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The Sinitic Nominal Phrase Structure: A Minimalist Perspective

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DECLARATION

This dissertation is a result of my own work and includes nothing which is the outcome of work done in collaboration except where specifically indicated in the text. It does not exceed the word limit of 80,000 words.

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SUMMARY

This dissertation is a comparative study of the morphosyntax of the constituents referred to as noun phrases in traditional grammar. In line with Abney's (1987) Determiner Phrase (DP) Hypothesis, this study investigates the syntactic structures of Sinitic nominal phrases by means of a thorough study of lexical elements, such as numerals, classifiers, possessives, adjectives, and nouns, and functional elements, such as plural/collective markers, force particles, and modification markers. It is argued that the syntactic structure of the nominal phrase is universal regardless of the presence of lexical items which realise the heads of the functional projections. This study further proposes a unified account of the articulated structure of nominal phrases, as a full-fledged DP, to explain the syntactic phenomena in both classifier and non-classifier languages. More specifically, a Probe-Goal feature-valuing model is proposed to account for parametric variation among Sinitic and other languages within the framework of Chomsky's (2000, 2001, 2004) Phase-based Minimalist Programme. Furthermore, given the assumption of the Split-DP Hypothesis, this study proposes that the DP in Sinitic languages is also not a unitary projection but an articulated array of functional projections, including $D_{\text{force}}P$, $D_{\text{focus}}P$, $D_{\text{topic}}P$ and $D_{\text{definite}}P$. As their counterparts in the clausal domain, these functional projections encode discourse-related properties, such as illocutionary force, topic, and focus. As far as modification structures are concerned, this study argues that the bare modifier is base-generated in the Spec of a functional or lexical projection, whereas the marked modifier is adjoined to the left of the nominal phrase by the operation Adjunction.

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ABBREVIATIONS

The following abbreviations are found in the main text and the glosses of the linguistic examples:

Adj	adjective
AdjP	adjectival phrase/projection
Asp	aspect marker
AspP	aspectual phrase/projection
A-P	Articulatory-Perceptual
C	complementiser
CaseP	Case phrase/projection
C _{HL}	Computational System for Human Language
C-I	Conceptional-Intentional
Cl	classifier
ClP	classifier phrase/projection
Conj	conjunction
ConjP	conjunction phrase/projection
CP	complementiser phrase/projection
D	determiner
D _{def} P	definiteness phrase/projection
DegP	degree phrase/projection
Dem	demonstrative
DemP	demonstrative phrase/projection
D _{foc} P	nominal focus phrase/projection
D _{force} P	nominal force phrase/projection
DP	determiner phrase/projection
D _{top} P	nominal topic phrase/projection
EP	exclamative particle
FinP	finiteness phrase/projection
FocP	focus phrase/projection
ForceP	force phrase/projection
FP	functional projection

I	inflection
IP	inflection phrase/projection
KP	Kase phrase/projection
LCA	Linear Correspondence Axiom
LF	Logical Form
Mod	modification marker
ModP	modifier phrase/projection
N	noun
NP	lexical noun phrase/projection
<i>n</i>	light noun
<i>n</i> P	light noun phrase/projection
NumP	number phrase/projection
PF	Phonetic Form
PIC	Phase Impenetrability Condition
Pl	plural
PP	prepositional phrase/projection
QP	question particle or quantifier phrase/projection
SFP	sentence final particle
Sg	singular
SP	specificity phrase/projection
Spec	specifier
TopP	topic phrase/projection
TP	tense phrase/projection
<i>v</i>	light verb
<i>v</i> P	light verb phrase/projection
XP	full syntactic phrase of type X
YP	full syntactic phrase of type Y

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Chapter 1

Introduction¹

1.1 Goal

This dissertation is a comparative study of the morphosyntax of the constituents referred to as noun phrases (NPs) in traditional grammar. In particular, the focus of this dissertation will be placed mainly on four Sinitic languages: Mandarin Chinese, Cantonese, Taiwan Southern Min, and Hakka. These languages are typologically categorised as article-less languages and classifier languages. One celebrated feature of these languages is the existence of a specific category, the numeral classifier, which serves as a grammatical device that enables speakers to categorise different persons or objects mentioned in their speech along certain semantic dimensions. In addition to this categorisation function, the numeral classifier also serves another important function, namely individualisation or subpartitioning. It is this function that gives rise to the name *numeral classifier*, since in these languages numeral classifiers are obligatory with numerals or other quantifying expressions, as shown in (1) to (4) below:

(1) Mandarin

liǎng	*(zhāng)	chuáng
two	Cl	bed
'two beds'		

¹ This chapter contains material presented in Lin (2009a).

(2) Cantonese

loeng ⁵	*(zoeng ¹)	cong ⁴
two	Cl	bed
‘two beds’		

(3) Taiwan Southern Min

n̄ng	*(tiunn)	bîn-tshn̄g
two	Cl	bed
‘two beds’		

(4) Hakka

liong ¹³	*(zong ¹³)	min ⁵⁵ cong ⁵⁵
two	Cl	bed
‘two beds’		

The phrase structure of nominal expressions in these languages has been examined in various studies (i.e., Cheng and Sybesma 2005 on Mandarin, Cantonese, Taiwan Southern Min and Wu among others). However, no consensus has yet been reached on the internal structure. More specifically, there is no agreement on whether these languages share the same syntactic structure as languages with articles and/or non-classifier languages. For instance, in line with Abney’s (1987) Determiner Phrase (DP) Hypothesis, which advocates that nominal phrases are headed by determiners, C.-C. Tang (1990a, 1990b) argues that nominal expressions in Mandarin Chinese also project to DP. In contrast, given the fact that Mandarin does not have determiners, J.-W. Lin (1997) argues that nominal expressions in Mandarin only project to NP but not DP. Because of this controversy, it is still worth exploring the internal structure of

Sinitic nominal phrases. Within the framework of Chomsky's (2000, 2001, 2004) Phase-based Minimalist Programme, this dissertation investigates the syntactic structure of nominal phrases in terms of Abney's (1987) DP Hypothesis. It aims to pursue a unified account of the articulated structure of nominal phrases for cross-linguistic data in line with Pereltsvaig's (2007) Universal-DP Hypothesis, which asserts that the syntactic structure of the nominal phrase is universal regardless of the presence of lexical items which realise the heads of the functional projections. More specifically, this dissertation will propose a Probe-Goal feature valuing model to account for modification structures and the encoding of argumenthood, referentiality, definiteness, specificity, quantification and discourse-related properties in article-less languages and classifier languages, especially in the Sinitic languages.

1.2 Sinitic Languages

1.2.1 Introduction

Sinitic languages and Tibeto-Burman languages are two subgroups of the Sino-Tibetan language family. Sinitic languages, spoken by over one billion people (Chappell 2001), are usually classified into seven different groups which are mutually unintelligible. Ranging roughly from north to south, they are Mandarin, Gan, Wu, Xiang, Min, Kejia (Hakka) and Yue. Some of these groups are often referred to by reference to the best-known variety in the group, e.g. Cantonese for Yue, and Hokkien for Southern Min. The main linguistic division among Sinitic languages is between northern and southern varieties, delineated by the Yangtze River. The northern group has been influenced by Altaic languages, whereas the southern group has been influenced by Tai-Kadai and Hmong-Mien languages (Goddard 2005). In this dissertation, four varieties of Sinitic languages, namely Mandarin, Cantonese, Taiwan Southern Min and Hakka, will be discussed. Except for Mandarin, the other three

belong to the southern group of Sinitic languages (Norman 1988).

It is now generally acknowledged that the grammatical differences between Sinitic languages have long been underestimated. The so-called ‘universal Chinese grammar’ proposed by Chao (1968: 13) is now taken as the result of several factors, including an insufficient database, politically motivated wishful thinking, and an outdated view of what grammar entails (Matthews and Yip 2001). The focus of this dissertation will be on certain features of Sinitic nominal expressions and the differences among the four Sinitic languages, which are believed to be relevant to the study of Sinitic languages in general. To this end, this dissertation will investigate the question of what parameters play a role in accounting for these differences and attempt to uncover deeper reasons for some of the systematic contrasts.

1.2.2 Grammatical Properties

Typologically speaking, Sinitic languages are isolating languages, having little or no inflection. As far as nominal expressions are concerned, Sinitic nouns are not inflected for gender or number and do not bear any case marking. All Sinitic languages have tones and numeral classifiers, especially the southern varieties (e.g., Cantonese, Taiwan Southern Min and Hakka), which have a greater range of both than the northern varieties. Prepositions and postpositions co-exist in Sinitic languages.

The typical word order generally assumed for Sinitic languages is Subject-Verb-Object (SVO), but they allow for variations of SOV and OSV. The position of a nominal phrase may vary based on whether it is definite or indefinite in meaning. Indefinite nominal phrases tend to occupy the post-verbal position. For instance, as indicated in (5), the preverbal object in the SOV and OSV orders generally does not allow an indefinite non-specific expression, whereas the post-verbal object in the SVO order allows such an expression.

Huang, Li and Li (2009: 200; modified):

(5) a. wǒ zài zhǎo yì běn xiǎoshuō

I at seek one Cl novel

‘I am looking for a novel.’

b. *wǒ yì běn xiǎoshuō zài zhǎo

I one Cl novel at seek

c. *yì běn xiǎoshuō wǒ zài zhǎo

one Cl novel I at seek

As for the difference between SOV and OSV structures, the SOV pattern has generally been regarded as a contrastive or a focus structure, whereas the OSV pattern is taken to be a topic structure.

In addition to the SOV and OSV structures, Sinitic languages have another word order variant, the so-called disposal construction, as discussed by Chao (1968) and Li and Thompson (1981) among many others. The structure illustrated in (6) below approximately represents such a construction:

(6) [Subject [Disposal marker [Object [Verb XP]]]]

An example of the disposal construction in Mandarin Chinese is provided in (7) below:

Huang, Li and Li (2009: 153; modified):

(7) Lǐsì bǎ nà ge huàidàn shā le

Lisi BA that Cl scoundrel kill SFP

‘Lisi killed that scoundrel.’

This construction is used to express an object being affected, dealt with or disposed of. In other words, it requires the object to be affected by an action. What would ordinarily be the object in the canonical SVO order surfaces as the object of the disposal marker (i.e. *bǎ* in Mandarin) in this construction.

Within the nominal phrase, demonstratives, possessives, numerals, classifiers and adjectives all precede the noun in the canonical order. The canonical word order for all these elements is shown in (8):

(8) possessive> demonstrative> numeral> classifier> adjective> noun²

An example of Mandarin Chinese is provided in (9) below:

(9) wǒ nà sān zhī hóngsè yuánzǐbǐ
my that three Cl red pen
‘those three red pens of mine’

With regards to classifiers, two types of classifiers are generally distinguished, namely sortal classifiers and mensural classifiers. According to Cheng and Sybesma (1998), a sortal classifier names the unit of natural semantic partitioning, whereas a mensural classifier creates a unit of measure. Examples for the two types of classifiers in Mandarin are provided in (10) below:

² ‘>’ is read as ‘precedes’.

Cheng and Sybesma (1998: 386; modified):

(10) **Sortal classifier**

- a. sān zhī bǐ
three Cl pen
‘three pens’

Mensural classifier

- b. sān ping jiǔ
three Cl-bottle liquor
‘three bottles of liquor’

1.2.3 Data under Study

The discussion in this dissertation includes data from Mandarin Chinese, the northern variety of Sinitic languages indigenous to the area north of the Yangtze River; nevertheless, the area in which Mandarin is spoken extends over all territories of China, since it has been adopted as the official language (Cheng and Sybesma 2005). It is also the official language of Taiwan and an official language in Singapore. The variety of Mandarin discussed in this dissertation (mainly) comes from Taiwan. However, the language data is presented using *Pinyin*, which is the official romanisation system of People’s Republic of China.

Being one of the best-known Sinitic languages, the Yue language is included in the discussion of this dissertation. It is a relatively homogeneous group of varieties spoken in most of Guangdong and Guangxi provinces of China as well as in Hong Kong and Macau. The term *Cantonese*, which is frequently used interchangeably with Yue, originally refers to the variety spoken in Guangzhou (Canton), the capital of Guangdong province. The Yue data rendered in this dissertation belong to the variety spoken in Hong Kong, and are presented using *Jyutping*, the romanisation system

developed by the Linguistic Society of Hong Kong. The term *Cantonese* will be used in the remainder of this dissertation.

The third Sinitic language under discussion in this dissertation is Southern Min. This is one of the varieties of the Min language, spoken in all of south-eastern Fujian province (i.e. Xiamen), Chaozhou in Guangdong province, Hainan province and Taiwan. Amoy³, the language spoken in Xiamen, and Taiwanese (also known as Hoklo or Holo) are considered to be the prestige varieties of Southern Min (Norman 1988). The variety of Southern Min chosen for this dissertation is Taiwanese, and the language data are presented in *Tailo*, the official romanisation system used in Taiwan. The tone is marked on the isolation tone. The term *Taiwan Southern Min* will be used throughout the remainder of this dissertation.

The last Sinitic language included in this dissertation is Hakka. It consists of several varieties spoken in the Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, and Sichuan provinces of China as well as in Taiwan (Chiang and Lai 2007). The Hakka language in Taiwan can be further categorised into five sub-dialects, namely Sixian, Hailu, Dapu, Raoping and Shaoan. The data presented in this dissertation are mainly based on Hailu Hakka, which is rendered with *Hakka Tongyong*, the official romanisation system for Hakka in Taiwan. The tone is marked on the isolation tone. The term *Hakka* will be used in the remainder of this dissertation.

1.3 The Theoretical Framework

This section outlines the theoretical background of this dissertation. The analysis I develop falls within the framework of generative syntax in its latest version, namely Chomsky's (2000, 2001, 2004) Phase-based Minimalist Programme. It also draws

³ Amoy is the conventional western name to designate the Southern Fujian dialect of Chinese.

extensively on the cartographic approach as developed mainly by Rizzi (1997, 2004).

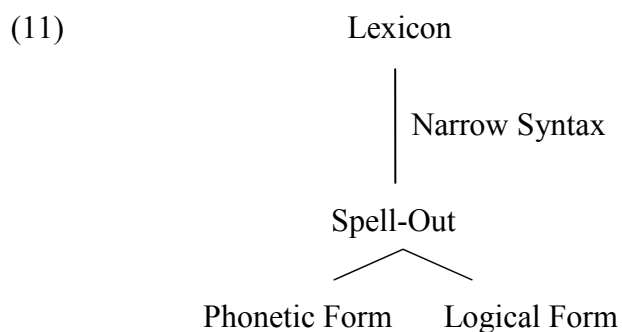
The main aspects of the Minimalist Programme are motivated by recourse to general principles underlying the way in which all biological systems operate, language being just a representative element of these systems. Language acquisition is determined by a biologically endowed innate language organ called the Faculty of Language. Universal Grammar is the theory of the initial stage of the Faculty of Language and might be seen as a unified model of the distinguishing features of human languages.

1.3.1 Levels of Representation

The architecture of the Faculty of Language outlined in Chomsky's latest papers (1995, 2001, 2004) includes a cognitive system and performance systems. The cognitive system stores information and makes this information available to the performance systems that access it in language use. A natural language in the human cognitive system consists of two basic components: a *Lexicon* and a *Computational System for Human Language* (C_{HL}). It is the Lexicon that feeds the building blocks of the sentence into the C_{HL} . The Lexicon represents a mental dictionary of all lexical items in the language, including substantive/lexical and non-substantive/functional ones, which are characterised by their idiosyncratic traits. These lexical items are seen as feature-bundles of phonological, semantic and formal features. A particular language selects features from the store of features made available by Universal Grammar and is identified by a listing of combinations of these features in the Lexicon. In other words, it is in the Lexicon that categories are assumed to be specified for the properties that determine the language-specific but universally constrained syntax. It is the locus of parametric variation. Therefore, everything that people have to acquire in order to know a particular language is represented in the

Lexicon.

The C_{HL} , which performs Narrow Syntax, is a step-by-step structure-building system which combines primitive elements from the Lexicon into larger units. A more detailed model is illustrated in (11):



An array or a selection of lexical items is taken from the Lexicon and placed in a *numeration*, which functions as a pre-syntactic ‘workspace’ for those selected lexical items to be fed into the C_{HL} in order to build a syntactic structure. This workspace also indicates how many times lexical items are to be used in a structure; therefore, it constitutes the initial point of the structure-building process. *Spell-Out* is the point at which the C_{HL} ‘passes over’ the most recently derived part of the derivation to the interface components, *Phonetic Form* (PF) and *Logical Form* (LF). PF is the interface component which ‘translates’ the syntactic structure into a format which the Articulatory-Perceptual (A-P) system can actually deal with the pronunciation and perception of the structure. LF is the interface component which ‘translates’ the syntactic structure into a format which the Conceptual-Intentional (C-I) system can deal with to compute the conceptualisation and interpretation of the structure. In the current Phase-based theory, there is not just one single point at which a derivation is spelt out. Instead, parts of the derivation are sent off to the interface components piece by piece. In other words, the C_{HL} processes structures in small chunks which are

called phases.

1.3.2 Mechanisms of Computation

The main goal of the Minimalist Programme is to find basic operations and principles which lead to the reduction of the complexity of the generative procedure and to the elimination of any superfluous mechanisms. In this way, the theory of grammar can adequately account for the variation among languages.

The indispensable operation of a recursive system is *Merge*, an operation which takes two syntactic objects and forms a new one from them. Merge is completely free and not language specific, for syntax has to find a way to put things together. Yet efficient computation requires the No Tampering Condition:

- (12) Merge of X and Y leaves the syntactic object unchanged because it creates the set {X, Y}.

The adoption of the No Tampering Condition leads Chomsky to the postulation of the *inclusiveness principle*. This principle requires that the output of a system should not contain anything beyond its input: the interface levels contain arrangements of lexical features. Optimally, mappings will satisfy the inclusiveness condition, introducing no new elements but only rearranging those of the domain. This principle bars introduction of new elements (i.e. traces) in the course of computation. Moreover, on Minimalist assumptions, the label of an element constructed after Merge of X and Y should be the label of either X or Y:

- (13)
- 
- ```
graph TD; A[X/Y] --- B[X]; A --- C[Y]
```

This implies that Merge is asymmetrical given that one of the two elements projects. No matter how complex the syntactic object is constructed, its label is the head selected from the Lexicon that has projected through the derivation. The other object is usually referred as the complement of the head. However, a syntactic tree can be built up without labelling the syntactic categories of the nodes or referring to the terms such as head and complement, since they are extra information which is inaccessible to the  $C_{HL}$  (Chomsky 1995). In other words, all these notations are derived concepts or relational properties. However, in this dissertation I will continue to employ labels and refer to the terms, such as head, complement and specifier in the X-bar template for the ease of our discussion of syntactic structures.

In the current theory, when a lexical item Y is merged with X, Y comes either from the numeration directly or from part of X. The former is called *External Merge*, while the latter is called *Internal Merge*. In other words, under External Merge, X and Y are separate objects; under Internal Merge, one is part of the other. According to Chomsky (2004), what used to be called *Move* in the previous generative literature is now reconceived as Internal Merge. Both External Merge and Internal Merge are indispensable for the computation and therefore both are ‘freely available’ (Chomsky 2004: 8). This view is different from previous works because movement used to be considered to be an imperfection of language. In the current theory, displacement is no longer to be taken as an imperfection but as part of the efficient design of language. Well-designed languages will have a dislocation property. Therefore, External Merge and Internal Merge should be equally economical and do not compete. In this dissertation, I will keep the term Merge for External Merge and Move for Internal Merge.

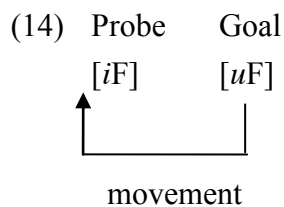
Under the copy theory of movement, Internal Merge takes the same syntactic

object to be re-merged at another location, creating a configuration in which one object occupies two locations in the tree. One copy has its phonological features deleted. Therefore, at PF, only one copy survives and is spelt out.

According to Chomsky (1995), the computation of an expression converges at an interface level only if the expression consists solely of elements that provide instructions to the external systems which will make use of those instructions. Features that are legible to the external systems at the interface level are *interpretable*, while all other features are defined as *uninterpretable*. In other words, only the interpretable features can survive to the LF representation, and the uninterpretable features must be eliminated. An uninterpretable feature reaching the interface will cause the derivation to crash. Both the interpretable and uninterpretable features are attribute-value pairs. Furthermore, the *unvalued* features are uninterpretable features, but not vice versa. In this framework, *valued* means the feature is given a value upon selection, and *unvalued* means the feature must be valued during the derivation through the operation Agree with a valued feature.

When a syntactic object (a head) with unvalued features is merged with another object (its complement), it serves as a *Probe* which searches for a matching *Goal* (a constituent which has identical interpretable features and with which the Probe can agree). Matching of the features of the Probe under identity with features of the Goal is sufficient to delete the uninterpretable features on the Probe, rendering movement (or Internal Merge) unnecessary. Agree, a head-head relation, allows the checking and erasure of an uninterpretable feature, by matching it with an identical feature of another item, in a sufficiently local domain. According to this conception, Agree is driven by uninterpretable features on the Probe, which must be deleted for legibility. Thus the Probe represents the element which seeks to be determined, while the Goal is the element which satisfies the Probe. For minimal computation, a Probe should

search the smallest possible domain, namely its c-command domain, to find its Goal. The relation Agree is established between a Probe and a Goal if there is no element closer to the Probe than the Goal with the relevant feature values. In addition, when the Probe bears a movement diacritic (also known as an EPP-feature), movement of the Goal will then be triggered. In line with Bošković (2007), I assume that the movement is triggered for the deletion of the uninterpretable feature on the Goal, as illustrated in (14) below:



In this dissertation, I assume that the movement diacritic, represented by the symbol \*, is marked on the interpretable feature of the Probe.

I will apply such a Probe-Goal feature valuing model to account for the internal structure of nominal phrase.

### 1.3.3 Functional Categories and Functional Projections

It is generally assumed that there is a distinction between two types of lexical items: lexical categories and functional categories. In contrast to lexical categories, functional categories do not contribute directly to the ‘descriptive content’ of the phrase or clause. Instead, they encode grammatical relationships among linguistic entities. By doing so, they may contribute to the interpretation of the phrase or clause. According to current Minimalist assumptions, heads of functional projections are involved in the operation Agree. In other words, the functional heads bear unvalued or uninterpretable features that need to be valued and eliminated. Although the

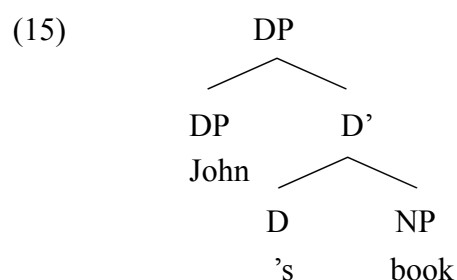
functional elements are in general morphologically and phonologically dependent, they can be lexically realised as bound or free morphemes.

Furthermore, within the framework of Distributed Morphology (Halle and Marantz 1993), it is the functional projections that assign a ‘lexical’ category (i.e. verb or noun) to a category-neutral root.

In this dissertation, I will focus on the functional projections within the nominal phrases and see how they encode grammatical relationships with each other and how they contribute to the interpretation of nominal phrases.

### 1.3.4 Parallelism between Clauses and Nominal Phrases

Chomsky (1970) points out that there exists a relation between clauses and the corresponding nominalisations. Cinque (1980) further elaborates on this idea and assumes that noun phrases and clauses share some properties in their internal structures. Furthermore, the subject-like properties of genitive noun phrases are taken to support the parallelism between the syntax of nominal phrases and that of clauses. According to Abney’s (1987) proposal, the determiner (D) in the nominal phrase is the parallel of the functional head, inflection (I), in the clause, which accommodates the agreement features, whereas its complement, the NP, is parallel to the verb phrase (VP) in the clause. For instance, Abney argues that *John* in (15) gets its Case in the specifier position (Spec) of DP from the morpheme *'s* in D. This is similar to how subjects in the clause get the Case from I by Spec-Head agreement.



Moreover, the distribution of the noun with regard to other constituents of the nominal phrase in many languages has been interpreted in terms of overt raising of N to D (see Ritter 1991 on Hebrew), which is an example of head movement with an extended projection paralleling V-movement to I.

More research into the clause structure and the nature of various clause-internal displacement phenomena has led to the identification of various phrase-structural layers within the clausal domain. A general characterisation that has emerged is that the clause is organized syntactically into a tripartite structure (cf. Chomsky 1986, 1995), namely (i) the theta domain ( $\theta$ -domain), where predicate-argument relations are involved and semantic selection (s-selection) is relevant, (ii) the phi domain ( $\phi$ -domain), which is responsible for agreement and/or inflectional features (e.g., tense, mood, aspect, negation), and (iii) the omega domain ( $\omega$ -domain), which encodes discourse-linked features in the interpretive left periphery (or the edge) of a clause and can be assigned a split structure. This is in the spirit of Rizzi (1997, 2004), who argues that in structures containing topicalised and/or focused elements, the CP layer splits into a number of separate projections: *Force Phrase* (ForceP), *Topic Phrase* (TopP), *Focus Phrase* (FocP), and *Finiteness Phrase* (FinP).

According to Rizzi's articulated structure of the left periphery, the primary role of the complementiser layer is the expression of Force and Finiteness: the head of ForceP specifies the illocutionary force of the clause (i.e., declarative, interrogative, exclamative, imperative, relative, etc.) and the head of FinP has specifications for finiteness. The Force projection is the highest node since it looks outside the clause expressing its type and thus links it to the superordinate structure, which can be the discourse or a higher clause. According to Rizzi, the English complementisers *that*

and *if* are situated in the head of ForceP since they indicate that the embedded clauses they introduce are respectively declarative and interrogative in force. The Fin projection, on the other hand, is the closest to the TP domain and looks inside the propositional content of the clause. Rizzi also assumes that in structures containing no topicalised or focused constituents, force and finiteness features can collapse and thus be realised onto a single head corresponding to the traditional complementiser.

Given such a parallelism between clausal and nominal structure, I will follow the trend to argue for a tripartite structure for the nominal phrase in this dissertation.

### **1.3.5 Other Proposals for Functional Projections in the Nominal Domain**

In the previous section, it was pointed out that the nominal phrase has a tripartite structure that contains two functional layers dominating the lexical/thematic layer: (a) a higher layer encoding discourse-oriented functions; and (b) a lower layer encoding agreement properties. In this section, I will further assess the issue of the presence of functional projections intervening between DP and NP. I will illustrate two types of arguments in the literature that have been advanced for postulating functional projections.

The first type of argument is the distributional evidence for postulating functional projections. For instance, the position of sentential adverbials has been interpreted as evidence for postulating functional projections in the clause. Since adjectival modifiers in the nominal phrase are taken to be the analogues of adverbial modifiers in the clause, the postulation of functional projections associated with the distribution of verbs in the clause can be replicated to postulate the extended projections associated with the distribution of nouns in the nominal domain. For instance, Bernstein (1993) proposes that the noun-adjective order in Romance is

derived from N-movement triggered by gender morphology. Further evidence for the existence of functional projections comes from the observed dislocation of constituents within nominals. For instance, a nominal head may move from N to a higher functional head in the structure. As observed by Ritter (1991, 1992, 1993), the distribution of the noun in the ‘construct state’ and ‘free state’ constructions in Modern Hebrew supports the postulation of a separate number projection. In contrast to the noun in the non-construct state, as in (16), the noun in the construct state, as in (17), lacks a determiner and occupies the initial position of the phrase.

Ritter (1991: 40; modified):

(16) ha-bayit

the-house

‘the house’

(17) beyt ha-mora

house the-teacher

‘the teacher’s house’

This word order suggests that the noun undergoes movement to a higher functional head. According to Ritter, the noun in (17) moves to the head of DP. Moreover, a phrasal element within nominals can also undergo movement. This supports the postulation of a functional projection as well. For instance, given Ritter’s assumptions that the possessor is base-generated at the Spec of NP and that N moves to D in the construct state in Modern Hebrew, the possessor in (18a) moves leftward out of the Spec of NP and targets a landing site right-adjacent to D, which Ritter (1991, 1992, 1993) labels as NumP.



Ritter (1991: 46-47; modified):

- (18) a. *beyt*            *ha-mora*            *ha-gadol*            ~~*ha-mora*~~            ~~*beyt*~~  
          house            the-teacher            the-big            the-teacher            house  
          ‘the teacher’s house’
- b. \**beyt*            *ha-gadol*            *ha-mora*            ~~*beyt*~~  
          house            the-big            the-teacher            house

More precisely, in (18a) the noun *beyt* ‘house’ undergoes N-to-D movement, while the possessor *ha-mora* ‘the teacher’ moves from the Spec of NP to the Spec of NumP. Example (18b) is ruled out because the possessor *ha-mora* ‘the teacher’ stays in-situ at the Spec of NP. Given the assumption of a parallel tripartite structure in clauses and nominal phrases, I assume that NumP is related to the assignment of Case in the nominal domain, parallel to TP, which is responsible for the assignment of nominative Case in the clausal domain. More specifically, I assume there is an uninterpretable [Case] feature on the Num head (cf. Abney 1987). This feature can specify the uninterpretable and unvalued [Case] feature of a possessor DP via the operation Agree. More discussion on the assignment of Case in the nominal domain will be addressed in Chapter Two.

In addition to the distributional evidence for functional projections, the second type of argument in support of postulating functional projections comes from morphological evidence. The basic assumption in the generative literature is that if a category is overtly realised in a language, this realisation must have a syntactic reflex in that language. In other words, inflectional morphology is structurally represented in syntax. In terms of formal features, this means that interpretable features must appear on designated heads. For instance, number, being an interpretable feature on nominals,

is considered to reside on an appropriate syntactic head, separately represented in the Lexicon. It is later fed into the C-I interface to signal that a set of entities has cardinality. Ritter (1991, 1992, 1993) proposes that it is the head of NumP that accommodates this feature.

In this dissertation, I will use both the distributional evidence and the morphological evidence to find out the functional projections in the nominal domain of Sinitic languages.

### **1.3.6 Universal-DP Hypothesis**

Since Abney (1987) proposed the DP Hypothesis, there has arisen a question in the generative literature: whether argumental nominal phrases are uniformly DPs across languages (i.e. Longobardi 1994) or whether some languages lack the functional projection(s) in the nominal phrases (i.e. Chierchia 1998). Under the latter view, the lack of DP correlates with the lack of overt articles. Given the fact that most Slavic languages lack overt articles, they have become good candidates for DP-less languages in the literature. However, the literature on Slavic nominal phrases split into two groups, one arguing for the presence of DP in Slavic (i.e. Progovac 1998 on Serbo-Croatian) and the other maintaining that Slavic nominal phrases are NPs (i.e. Bošković 2005). Since Sinitic languages also lack overt articles, the situation in the literature is also similar. For instance, C.-C. Tang (1990a, 1990b) and Li (1998, 1999a, 1999b) argue that nominal expressions in Mandarin Chinese also project to DP, while Huang (1982, 1998) and J.-W. Lin (1997) argue that nominal expressions in Mandarin only project to NP. According to Pereltsvaig (2007), the former view is the Universal-DP Hypothesis and the latter one is the Parameterised-DP Hypothesis.

According to the Universal-DP Hypothesis, the projection of DPs is a property of Universal Grammar. It is independent of the presence of the lexical item which

realises the head of the projection. The assumption that the existence of DP is part of the universal inventory is attractive on a number of grounds. Empirically, it can retain the structural parallelism between the clause and the nominal phrase, since it captures the similarities in behaviour between the two, exemplified by the relationship between nominalisations such as *the army's destruction of the city* and the corresponding clause *The army destroyed the city*. In these expressions the position of the noun corresponds to that of verb. Furthermore, both nominalisation and clause can have a subject occupying the Spec of the functional head. From the theory-internal perspective, the Universal-DP Hypothesis makes the theory of phrase structure much more general, since all categories in Universal Grammar have full extended projections. Namely, VP has CP or TP as its extended projection, whereas NP has DP as its extended projection. In addition, the Universal-DP Hypothesis is committed to Cinque's (1999) Universal Hierarchy of Clausal Functional Projections, which claims that the functional structure in the Narrow Syntax must be uniform across all languages and ultimately determines the interpretation of a certain expression. In other words, the Universal-DP Hypothesis can reach a one-to-one syntax-semantics mapping relation in the formation of our theory of Universal Grammar. The theoretical implication is that the same distinction between argumental nominal phrase and predicative nominal phrase can be upheld for all languages. As a result, the existence of a semantic parameter like the Nominal Mapping Parameter and the application of a semantic 'type-shifting' rule as proposed by Chierchia (1998) can then be abandoned. The so-called Nominal Mapping Parameter is implemented in terms of the binary features [ $\pm$  arg(ument)] and [ $\pm$ pred(icate)], and it constrains the interpretation of the category headed by N. The two features can be combined in three ways. To be more specific, a language permits its nominal phrases to denote (i) only kinds ([+arg] and [-pred]), (ii) only predicates ([-arg] and [+pred]) or (iii) either

arguments or predicates ([+arg] and [+pred]). Accordingly, Sinitic languages belong to the first group.

In contrast to a Parameterised-DP Hypothesis, such as Cheng and Sybesma's (1999, 2005) or Sio's (2006, 2008) account where two types of encoding strategies for (in)definiteness in natural languages are proposed, another advantage afforded by the Universal-DP Hypothesis is that a universal inventory for the encoding of (in)definiteness in natural languages can be reached.

Since this dissertation attempts to provide an account for the whole range of nominal constructions in Sinitic languages by appealing to a minimal but universal set of functional projections and the theory of movement, the Universal-DP Hypothesis is then taken as a basic assumption.

### **1.3.7 Distributed Morphology**

The concept of insertion in the theory of Government and Binding (Chomsky 1986) and in the early Minimalist Programme (Chomsky 1995) is based on the assumption that words are inserted into the syntax in their entirety, with all their phonological and semantic information being 'carried through' the syntax. This traditional view has been challenged by the theory of *Distributed Morphology* (Halle and Marantz 1993, Marantz 1997), which suggests that insertion can apply at later stages of the derivation, after syntactic operations have been performed.

Within the framework of Distributed Morphology, it is proposed that there are no phonological features in syntax. Instead, the phonological realisation of syntactic nodes is executed through the operation, Vocabulary Insertion, which occurs at the interface to the phonological component, a syntactic level that Halle and Marantz (1993) call Morphological Structure. The operation Vocabulary Insertion connects the phonological feature bundles of lexical entries with bundles of morphosyntactic

features associated with nodes in the syntax. The requirement for insertion is that the features of the lexical item are non-distinct from the features of the syntactic node. Lexical items can be underspecified for the morphosyntactic features they realise. Different vocabulary items compete for insertion, and the entry that matches the most features wins. The terminal nodes at Morphological Structure may be constructed by syntactic head movement or by post-syntactic operations that take place at the interface between syntax and morphology. Importantly, word formation in Distributed Morphology comprises both late insertion of PF-features and all sorts of syntactically constrained operations that manipulate the syntactic tree. Morphology is therefore ‘distributed’ among syntax and phonology (Zeller 1997).

In this theory, syntactic structure is derived on the basis of abstract categories defined by universal features. The lexical categories generally assumed (i.e. nouns and verbs) are reinterpreted as category-neutral roots ( $\sqrt{\quad}$ ) augmented with functional layers. More specifically, nounhood in such a system is created by merging category-neutral root with a nominal functional head, namely the light noun ( $n$ ).

This late-insertion approach allows us to reduce the parametric variation among languages down to the morpho-phonological realisation of functional heads: how the (un)interpretable features on different functional heads are phonetically realised. Therefore, it is taken as a basic assumption of this dissertation.

### **1.3.8 Definiteness and Specificity**

Generally, a definite nominal expression is used when a speaker presupposes that the referent of the expression is accessible to the hearer. That is to say, the speaker assumes that the referent is familiar or unique so that the hearer is able to identify, either (i) because the referent was previously introduced into the context of discourse, or (ii) because the referent is part of the interlocutors’ shared knowledge, or (iii)

because the referent becomes identifiable due to enough descriptive content in the sentence. On the other hand, when a novel referent is introduced into the discourse for the first time, an indefinite nominal expression is used. The speaker makes no assumption about the familiarity or accessibility of the referent to the hearer. In English, definiteness is expressed by the determiner *the*, whereas indefiniteness is expressed by the determiner *a* (Guérin 2007).

As far as specificity is concerned, a nominal expression is interpreted as specific when the speaker assumes the existence of a particular referent in the universe of discourse. Definite nominal expressions that refer to uniquely identifiable entities are thus specific. Indefinite nominal expressions may also be specific as shown in (19), where the nominal phrase in question is in boldface.

Lyons (1999: 167):

- (19) Peter intends to marry **a merchant banker** – even though he doesn't get on at all with her.

In the above example, the speaker makes a presupposition that there is an individual Peter wants to marry; however, the speaker does not identify this individual because he does not assume that the hearer can identify her, or the identity of the referent is not important to the discourse. The nominal expression *a merchant banker* is thus interpreted as specific but indefinite. In contrast, a nonspecific nominal expression is used when its referent stands as a typical representative of its class. An example is provided in (20):

Lyons (1999: 167):

- (20) Peter intends to marry **a merchant banker** – though he hasn't met one yet.

In (20), the speaker makes no commitment as to the existence of *a merchant banker*. In other words, the nominal phrase *a merchant banker* refers not to a particular individual in the set of merchant bankers, but to a representative token of the whole set (Guérin 2007).

Whether definite nominal phrases can also be interpreted as being nonspecific is a matter of debate. In this dissertation, I will assume that definite nominal expressions are not necessarily specific. For instance, the nominal phrase *the bus* in (21) is definite but nonspecific.

(21) Every morning I take **the bus** to school.

As shown in (21), a definite nonspecific nominal expression is used to refer to a class or a genus in its entirety, or to properties of that genus (Guérin 2007).

#### **1.4 The Debate surrounding Sinitic Nominal Phrases**

Abney's DP Hypothesis has provided parallel structural representations for clauses and nominal expressions and further established the theoretical consistency that lexical and functional categories in both clausal and nominal domains can project to the phrasal level. Since then, there have been some further proposals as to whether the DP corresponds to TP (the latest version of IP) or some other functional projection (e.g., Szabolcsi, 1994 among many others) and whether the DP involves a more articulated phrasal architecture (e.g. Giusti 1991, Ritter 1991, 1992, 1993 based on data from different languages). Moreover, recent studies of the nominal phrases in classifier languages, such as Mandarin Chinese, Japanese and Korean, have raised the issue of whether or not the DP Hypothesis can be applied to this type of language.

Regarding the syntactic structure of nominal phrases in classifier languages, Tang (1990a) firstly substantiates the DP Hypothesis by studying the nominal phrases of Mandarin Chinese. What she suggests is that a functional category, classifier, should be included in the nominal structure of Mandarin Chinese. She proposes that numeral and classifier as a single doubly-filled head project the classifier projection (CIP<sup>4</sup>), which is an intermediate projection between DP and NP (cf. Krifka, 1995, R. Yang, 2001). Although this proposal captures the fact that the classifier usually appears with the numeral, the postulation of a doubly-filled head obviously violates X-bar theory. Moreover, as pointed out by S.-F. Yang (2005), the postulation of a complex head formed by the numeral and classifier is further challenged from two empirical perspectives. First, a modifying element such as adjective can intervene between the numeral and the classifier, as shown in (22a), but cannot appear outside the complex head, as shown in (22b).

S.-F. Yang (2005: 49; modified):

(22) a. yí dà běn shū  
           one big Cl book  
           ‘one big book’

b. \*xiǎo yì zhāng zhǐ  
       small one Cl paper  
       Intended meaning: ‘a small piece of paper’

Under the proposal that the numeral and the classifier form a complex head, it is difficult to explain how an adjective such as *dà* ‘big’ appears within the complex head

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<sup>4</sup> I have replaced Tang’s (1990a) original label ‘KP’ by her later (1990b) label ‘CIP’.



instead of being merged outside. Secondly, when the value of a numeral is high, it can be shown as two coordinated numerals as in (23a). In such cases, as shown in (23b), the classifier is not allowed to intervene between the numeral and the coordinator *yòu* ‘and’.

S.-F. Yang (2005: 50; modified):

- (23) a. *yì bǎi yòu sān shí běn shū*  
one hundred and three ten Cl book  
‘one hundred and thirty books’
- b. \**yì bǎi běn yòu sān shí běn shū*  
one hundred Cl and three ten Cl book  
Intended meaning: ‘one hundred and thirty books’

These two examples suggest that the coordination occurs within the NumeralP and further cast doubt on the postulation of a complex head formed by the numeral and classifier.

Later, Tang (1990b), in her PhD dissertation, maintains that the doubly-filled head in her previous analysis can split into two distinct heads, one being a Num head and the other a Cl head, both having their own projections. Accordingly, the internal structure of Chinese nominal phrases should then be DP>number phrase (NumP)>ClP>NP.<sup>5</sup>

In contrast to Tang’s proposal, J.-W. Lin (1997) claims that Chinese nominal expressions only project to NP but not DP given the fact that Mandarin Chinese lacks articles. According to his analysis, ClP is generated in the Spec of NP.<sup>6</sup> However, as

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<sup>5</sup> Tang assumes the numerals head the NumP.

<sup>6</sup> A similar structure is proposed by Gao (1994) within the framework of Head-Driven Phrase Structure

pointed out by Chan (1999), Lin's proposal does not deal with the following issue: how or where the grammatical information contributing to semantic interpretation (i.e. how a predicate is turned into an argument) is encoded in a nominal structure without functional projections (i.e. only NP). Moreover, J.-W. Lin's (1997) claim needs to accept Huang's (1982) ad hoc formulation of the structure constraint on Chinese nominal phrases in (24), which states that the head-initial rule does not apply to noun phrases. However, such acceptance can be avoided by the DP Hypothesis.

Huang (1982: 41; modified):

(24) The X-bar structure of Chinese:

- a.  $[X^n X^{n-1} YP^*]$  if and only if  $n=1$  and  $X \neq N$
- b.  $[X^n YP^* X^{n-1}]$  otherwise

On the other hand, Li (1998, 1999b) adopts a compromise position. She argues that the nominal phrase of Mandarin Chinese can project to either a DP which selects the NumP as its complement or to a NumP which selects the CIP as its complement. More specifically, she maintains that Chinese nominal expressions containing numerals can be divided into two types, namely the individual-denoting number expression as in (25a) and the quantity-denoting number expression as in (25b).

Li (1998: 694; modified):

- (25) a. yǒu    sān    ge    xuéshēng    zài    xuéxiào    shòushāng    le  
           have three Cl    student    at    school    hurt    Particle  
           ‘There are three students hurt at school.’

- b. **sān ge xuéshēng** tái bú dòng nà yí jià gāngqín  
 three Cl student lift not move that one Cl piano  
 ‘Three students cannot lift up that piano.’

According to Li’s analysis, DP is the maximal projection of the individual-denoting number expression, whereas NumP is the maximal projection of the quantity-denoting number expression. The former is referential, while the latter is non-referential. Li’s proposal that the individual-denoting and quantity-denoting number expressions have different structural representations is to capture their differences in reflexive co-reference and scope interaction, which will be discussed in Chapter Three. Nevertheless, given Szabolcsi’s (1987, 1994) and Stowell’s (1989, 1991) proposals that a nominal expression is represented as a DP when it occurs in an argument position, Li’s analysis cannot account for cross-linguistic data such as English in (26), where DP needs to be projected for both individual-denoting and quantity-denoting number expressions as in (26a) and (26b) respectively because both of the nominal phrases occupy argument positions, namely the subject positions.

- (26) a. Three students got hurt at school.  
 b. Three students cannot lift up that piano.

Although Li can maintain that there is no DP layer in (26b), she has to abandon the general assumption that an argumental nominal expression in English projects to a DP.

In contrast to the aforementioned studies, Cheng and Sybesma (1999, 2005) propose that the nominal expression in Mandarin and Cantonese can project to a NumeralP selecting a CIP if it is indefinite or to a CIP only if it is definite. Their

proposal is to capture the fact that classifiers in Cantonese function as the definite article *the* in English. They treat a bare NumeralP without an overt demonstrative as inherently indefinite and a bare CIP without overt numeral or demonstrative as inherently definite. However, as indicated by Chan (1999), the CI head cannot encode a fixed [+Definite] value given that a NumeralP containing a CIP is invariably indefinite, for a phrase (i.e. NumeralP) which is indefinite but contains a CI head bearing [+Definite] feature must crash in derivation because the feature specification of a functional head is percolated to the highest node of an extended projection (Grimshaw 1991). For the same reason, it is not plausible for the Numeral head to have a fixed [-Definite] value since we can have a Dem-Numeral-CI-N sequence. As a result, we must conclude that neither the Numeral head nor the CI head encodes a fixed value for the [Definite] feature. The residual question then is how the surface Numeral-CI-N and CI-N sequences derive relevant (in)definite interpretations.

Following the line of research by Cheng and Sybesma (1998, 1999, 2005), Sio (2006, 2008) has recently argued that in the nominal phrase there is a specificity projection (SP) which is projected only for specific nominal phrases. Her proposal is to account for the structural representation of nominal expressions with demonstratives. What she proposes is that the SP, the layer where the demonstrative is accommodated, dominates the CIP. Yet Sio's analysis encounters the same problem as Cheng and Sybesma's (1999, 2005) does, since she also assumes that the CI head has a fixed [+Definite] value and the Numeral head has a fixed [-Definite] value.

Furthermore, none of the aforementioned studies aims to pursue a unified syntactic structure to explain the phenomena in both classifier and non-classifier languages. As a result, their claims for the existence of Universal Grammar as an inventory for all computational grammatical systems are mitigated. To prevent the same shortcoming, it is, therefore, preferable to have a one-to-one syntax-semantics

mapping relation (cf. Chierchia 1998). In addition, none of the existing studies pays attention to the encoding of discourse-related properties (i.e. topic, focus and illocutionary force) in the nominal domain. Therefore, the parallelism between clauses and nominal phrases is weakened.

Assuming that functional projections are involved in the derivation of certain aspects of meaning, this dissertation is committed to Cinque's (1999) Universal Hierarchy of Clausal Functional Projections, which claims that the functional structure in the Narrow Syntax must be uniform across all languages and ultimately determines the interpretation of a certain expression. In other words, a unified syntactic account with less language-specific mechanism for the nominal structure across different languages will be the ultimate goal of this dissertation. More specifically, a Probe-Goal feature-valuing model will be proposed to account for the parametric variation in Sinitic and other languages.

## **1.5 Overview of the Chapters**

In Chapter Two, I will investigate the internal structure of Sinitic nominal phrases in terms of Abney's (1987) DP Hypothesis. Furthermore, this chapter will maintain a universal structure for the nominal phrase in different types of languages (i.e. articed languages vs. article-less languages or classifier languages vs. non-classifier languages) in line with Pereltsvaig's (2007) Universal-DP Hypothesis, which asserts that the syntactic structure of the nominal phrase is universal regardless of the presence of lexical items which realise the heads of the functional projections. More specifically, a Probe-Goal feature-valuing model will be proposed to account for the parametric variation in Sinitic and other languages within the framework of Chomsky's (2000, 2001, 2004) Phase-based Minimalist Programme. Different layers of functional categories within the nominal phrase will be depicted in terms of their

grammatical properties. In addition, different types of movement operations (i.e. head movement and phrasal movement) in the nominal domain will be discussed on the basis of Sinitic data.

In Chapter Three, I will focus on the issue of the encoding of discourse-related properties in the nominal domain on the basis of Sinitic language data. It will argue that the left periphery of the nominal phrase is similar to its counterpart in the clause, both of which encode topic, focus and illocutionary force. Given Rizzi's (1997, 2004) assumption that CP, the clausal parallel of DP, splits into ForceP, TopP, FocP and FinP, this chapter will maintain that DP can also be decomposed into an articulated array of functional projections, including  $D_{\text{force}}\text{P}$ ,  $D_{\text{top}}\text{P}$ ,  $D_{\text{foc}}\text{P}$ ,  $D_{\text{top}}\text{P}$  and  $D_{\text{def}}\text{P}$ . Each layer will be discussed respectively based on cross-linguistic data. Furthermore, this chapter will show that topicalisation and focalisation in the clausal domain of Sinitic languages have to be licensed by DP-internal topicalisation and focalisation. In addition, it will be shown that there is no Left Branch Condition for Sinitic nominal expressions since the possessor DP can be extracted out from the nominal domain to the clausal domain.

In Chapter Four, I will deal with the ways modifiers of Sinitic nominal phrases are merged into the syntactic structure depicted in the previous chapters. The discussion will fall on two types of modifiers for Sinitic nominal phrases, namely the marked modifier and the bare modifier. It will show that the marked modifier in Sinitic languages is adjoined to the left of the nominal phrase by the operation Adjunction whereas the bare modifier is base-generated in the Spec of a functional or lexical projection. More specifically, it will argue that the modification markers (namely, *de* in Mandarin, *ge*<sup>3</sup> in Cantonese, *ê* in Taiwan Southern Min and *gai*<sup>11</sup> in Hakka) are head-initial complementisers and that all instances of the marked modifying phrases are in fact full forms of relative clauses which are adjoined to the left of modified nominal phrases

In Chapter Five, I will summarise the proposals in the preceding chapters and provide an account of the nominal orderings in Japanese and Korean based on the nominal structure proposed for Sinitic languages. It will show that data from Sinitic languages, Japanese and Korean can be subsumed under a unified analysis with a few language specific specifications.





## Chapter 2

### The Syntactic Structure of Sinitic Nominal Phrases<sup>1</sup>

#### 2.1 Introduction

As pointed out in Section 1.3.4, Abney's (1987) DP Hypothesis provides parallel structural representations for clauses and nominal expressions and further establishes the theoretical consistency that lexical and functional categories in both clausal and nominal domains can project to the phrasal level. Since then, there have been some further proposals as to whether the DP corresponds to TP (the latest version of IP) or to some other functional projection (e.g., Szabolcsi 1994 among many others) and whether the DP involves a more articulated phrasal architecture (e.g., Giusti 1991; Ritter 1991, 1992, 1993) based on the data of different languages. Moreover, recent studies of the nominal phrases in classifier languages such as Sinitic languages, Japanese and Korean have raised the issue of whether or not the DP Hypothesis can be applied to this type of language.

In this chapter, I intend to pursue a unified syntactic structure to explain the phenomena in both classifier and non-classifier languages. Assuming that functional projections are involved in the derivation of certain aspects of meaning, this chapter is committed to Cinque's (1999) Universal Hierarchy of Clausal Functional Projections, which claims that the functional structure in the Narrow Syntax must be uniform across all languages and ultimately determines the interpretation of a certain expression. Therefore, the goal of this chapter is to provide a more unified syntactic account with less language-specific machinery for the nominal structure across different languages.

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<sup>1</sup> This chapter contains material presented in Lin (2008a, 2008b, 2008d, 2009a).

That is to say, I will construct a one-to-one syntax-semantics mapping relation (cf. Chierchia 1998). For instance, in the spirit of Longobardi (1994, 1996, 2001, 2005), I assume D is obligatorily present in the syntactic structure of nominal expressions across all languages, for the need to encode different references must be present in every language. As defined by Chan (1999: 234), ‘D is a universal category which determines the *referential status* of nouns (i.e. definite/indefinite/generic)’. As a result, the same distinction between argumental nominal phrase (namely DP) and predicative nominal phrase (namely NumP) can be upheld for all languages. In other words, the existence of the Nominal Mapping Parameter and the application of a semantic ‘type-shifting’ rule as proposed by Chierchia (1998) can then be abandoned.

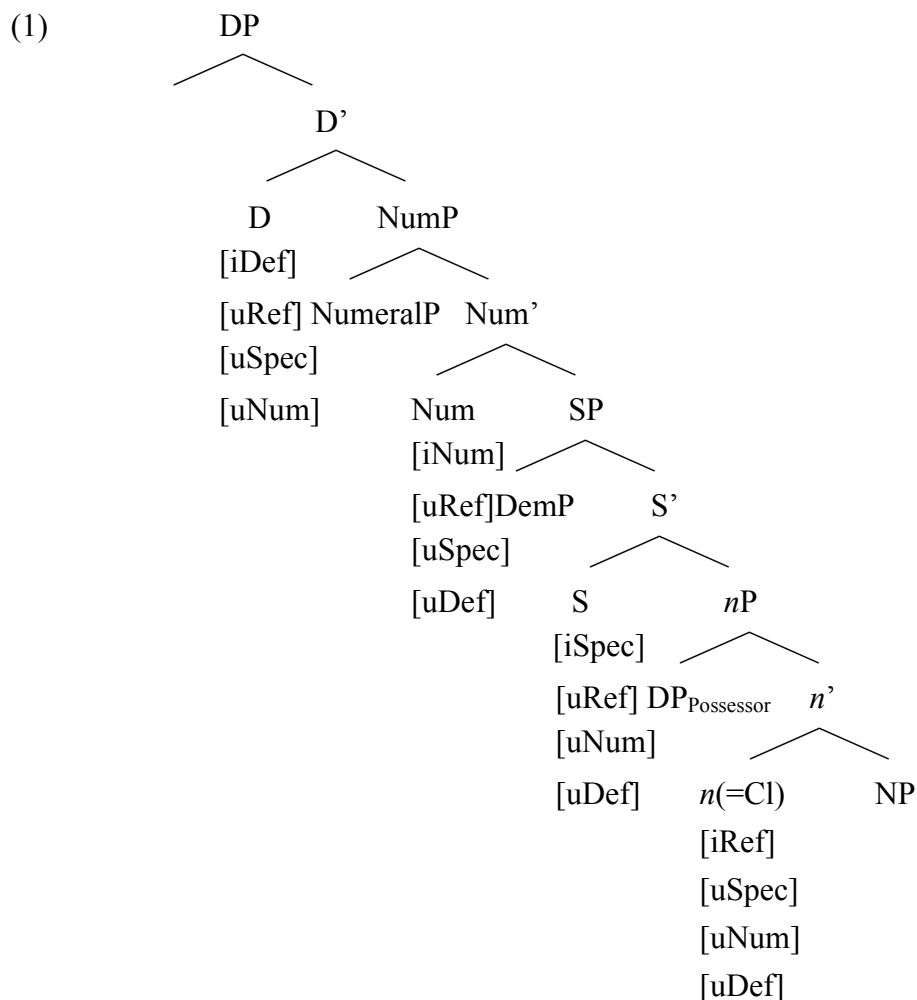
This chapter is organised in the following manner. In Section 2.2, I will argue for a Probe-Goal feature valuing model to account for the internal structure of nominal phrases in Sinitic languages. In Sections 2.3 through 2.12, I will discuss the derivation of various nominal constructions in the four Sinitic languages. These will include bare nouns, nouns with plural/collective markers, nominal expressions with numerals and classifiers, nominal expressions with demonstratives, and nominal expressions with possessives. I will then conclude this chapter in Section 2.13.

## **2.2 Elements and Internal Ordering of Nominal Phrases**

### **2.2.1 Probe-Goal Feature Valuing Model**

Against the background of the ongoing debate on the internal structure of the Sinitic nominal phrase, I will argue for the existence of a syntactic category DP in Sinitic languages within a Probe-Goal feature valuing model and show how the composition of the nominal phrase may bear on issues of referentiality, specificity, quantification, definiteness, Case, argumenthood and discourse-related properties. This is in order to maintain a unified account, the DP Hypothesis, for cross-linguistic data.

The basic syntactic structure that I postulate is schematised as in (1).



In order to maintain the idea that the nominal structures are essentially the same cross-linguistically, I propose that the head of DP is the locus of the [Definite] feature (henceforth [Def]), the head of NumP is the locus of the [Number] feature (henceforth [Num]), the head of SP is the locus of the [Specific] feature (henceforth [Spec]), and the light noun projection (*nP*), which is lexically realised as the classifier in Sinitic languages, is the locus of the [Referential] feature (henceforth [Ref]). In terms of feature interpretability (Chomsky 1995), the aforementioned feature carried by each functional projection is interpretable. However, the head of each functional projection bears not only the interpretable feature but also several uninterpretable features related

to the other functional projections. For instance, the D head is composed of an interpretable [Def] feature and the uninterpretable [Num], [Spec] and [Ref] features. The matching of these features is done in a head-to-head manner. More precisely, according to Chomsky's (2001) Agree-based theory, the interpretable feature of each functional head interacts with the uninterpretable features of other functional heads via the operation Agree. For example, the D head with the unvalued uninterpretable [Ref], [Spec] and [Num] features and the interpretable [Def] feature serves as the Probe, while the *n* head with the interpretable [Ref] feature and the unvalued uninterpretable [Def] feature, the S head with the interpretable [Spec] feature and the unvalued uninterpretable [Def] feature and the Num head with the interpretable [Num] feature and the unvalued uninterpretable [Def] feature serve as the Goals (cf. Sio 2006, 2008). The unvalued uninterpretable [Def] feature on the functional heads *n*, S and Num copies its value from the interpretable [Def] feature on the D head via the operation Agree. At the same time, the interpretable [Ref], [Spec] and [Num] features on the functional heads *n*, S and Num respectively value the unvalued uninterpretable [Ref], [Spec] and [Num] features on the D head by Agree. Given such an analysis, the parametric variation among languages can be reduced down to two sources: (i) how the movement-triggering feature on different functional heads can be satisfied (i.e. by DP-internal head and/or phrasal movement); and (ii) how the (un)interpretable features on different functional heads are phonetically realised.

Furthermore, since research on clause structure and the nature of various clause-internal displacement phenomena has led to the identification of various phrase structural layers within the clausal domain, a general characterisation that has emerged is that the clause is organised syntactically into a tripartite structure (cf. Chomsky 1986, 1995). These are namely (i) the theta domain ( $\theta$ -domain), where predicate-argument relations are involved and s-selection is relevant, (ii) the phi domain ( $\phi$ -domain), which

is responsible for agreement and/or inflectional features (e.g., tense, mood, aspect, negation), and (iii) the omega domain ( $\omega$ -domain), which encodes discourse-linked features in the interpretive left periphery (or the edge) of a clause and can be assigned a split structure in the spirit of Rizzi (1997, 2004). Schematically, we have the following organisation of the clause:

$$(2) \left[ \left[ \text{Discourse-linked features} \right] \left[ \text{Inflectional/agreement features} \right] \left[ \text{core predicate and its arguments} \right] \right]$$

Assuming a parallelism between clausal and nominal structure, I will follow the trend to argue for a tripartite structure for the nominal phrase. I assume that the *nP*-shell belongs to the  $\theta$ -domain, whereas the region between the NumP and the SP belongs to the  $\phi$ -domain. As for the  $\omega$ -domain, I argue for a split-DP in the spirit of Aboh's (2004) Split DP hypothesis, which maintains that the left periphery of the nominal phrase encodes information structure in the same way as the left periphery of clause.

Since Minimalism is adopted as the approach of this dissertation, in the following subsections the core functional projections in Sinitic nominal phrases are introduced in a bottom-up fashion, from the lowest *nP* to the highest DP. This provides a holistic view of the underlying syntactic structure of nominal phrases. Various proposals with respect to Sinitic nominal constructions are then introduced in Sections 2.3 through 2.12.

### **2.2.2 Light Noun Projection: The Nominal Parallel of *vP***

Given the assumption that there is cross-categorial symmetry between the structure of verbal and nominal projections, it has been suggested in the literature (e.g., Radford 2000) that nominal phrases have the same type of shell structure as verbal phrases. It is proposed that the nominal phrase is composed of an outer *nP* shell headed

by a light noun and an inner NP core headed by a lexical noun. Further, since it is maintained that light verb projections can be divided into two types, namely the transitive *\*vP* and the intransitive *vP*, I argue that *nPs* can be divided into two types as well, namely *\*nP* and *nP*. The difference between *\*vP* and *vP* is that an external argument, the agent, is introduced in the Spec of *\*vP*. Since Szabolcsi (1983), Fukui and Speas (1986) and Abney (1987) have shown that possessor constituents in nominal expressions are structurally parallel to clausal subjects, I propose that the possessor, a DP, is base-generated in the Spec of *\*nP*. This proposal can be supported by the following data, which show that, in many classifier languages, a possessor DP directly precedes the classifier:

Matthews and Yip (1994: 107; modified):

(3) Cantonese

|                  |                   |                 |
|------------------|-------------------|-----------------|
| ngo <sup>5</sup> | gaan <sup>1</sup> | uk <sup>1</sup> |
| I                | Cl                | house           |
| ‘my house’       |                   |                 |

Sio (2008: 109):

(4) Wenzhou

|                 |                       |                 |
|-----------------|-----------------------|-----------------|
| ŋ <sup>24</sup> | paŋ <sup>313/35</sup> | s <sup>33</sup> |
| I               | Cl                    | book            |
| ‘my book’       |                       |                 |

Bisang (1999: 156):

(5) Hmong

|     |     |      |
|-----|-----|------|
| kuv | lub | rooj |
|-----|-----|------|

I Cl table

‘my table’

Furthermore, in line with Chomsky’s (2001) proposal that  $*vP$  is a phase, I will argue that  $*nP$  is a phase as well. This line of argument will be pursued in Chapter Three with supporting data.

Following an idea by Huang (2005), I assume that in classifier languages such as Sinitic languages, the functional head,  $n$ , can be overtly lexically realised as the numeral classifier.<sup>2</sup> As for non-classifier languages such as English, from the perspective put forth by Borer (2005), I assume that the plural morpheme, such as the plural suffix  $-s$  in English, is the instantiation of the functional  $n$  head. In other words, the difference between classifier and non-classifier languages is reduced down to the morpho-phonological realisation of the functional head  $n$ .

In terms of the function of  $n$ , building on Borer’s (2005) proposal, I believe that the  $n$  head has the function of assigning nounhood to its complement. Such a function can be found with Sinitic numeral classifiers as shown in (6):

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<sup>2</sup> Diachronically speaking, most of the numeral classifiers in Sinitic languages are originally nouns (Tai and Chao 1994; Aikhenvald 2000; Tien, Tzeng and Hung 2002; Huang 2005; C.-C. Tang 2005). There may be a phenomenon of grammaticalisation of nouns into numeral classifiers. Synchronically, in Thai when a noun does not have a classifier, the noun is repeated in the position of the classifier as exemplified in (i):

Bisang (1999: 130):

- (i) kɔʔ                      səam                      kɔʔ  
N: island              NUM: three              CL: island  
‘three islands’

The lexicalisation of the functional head  $n$  as the numeral classifier by the insertion of the repeated noun suggests there is an N-to- $n$  movement.

Dragunov (1960:44, as cited in H.-Y. Liu (2003: 212)):

- (6) wèn    ge    hǎo  
      ask    Cl    good  
      ‘give some greeting’

As proposed by Dragunov (1960, as cited in H.-Y. Liu (2003)), in (6) the constituent *hǎo* ‘good’ following the classifier *ge* is to be interpreted as an abstract noun indicating the meaning ‘entity’. Therefore, the so-called NP in (1) is actually  $\sqrt{P}$ . In line with Marantz (1997), Chomsky (2004) and Borer (2005), I propose that the  $\sqrt{P}$  is assigned nounhood by the categorial [N] feature on the *n* head.

Furthermore, as indicated by Cheng and Sybesma’s (1999) proposal for their Cl head, it should be the *n* head that makes an N countable and serves a referential function. Following Cheng and Sybesma (1999) and Li (1997), I argue that in addition to the categorial [N] feature the head of *nP* carries the interpretable [Countable] (henceforth [Count]), [Unit] and [Ref] features.

The reason for postulating the [Count] feature is based on the assumption that nouns are not marked individually as count or mass in the Lexicon. This assumption is due to the fact that even in languages with plural marking(s), such as English, the so-called mass noun can be counted in some cases, whereas the so-called count noun can be used as mass. The mass-count distinction associated with nouns can be easily over-ridden. Examples can be found in (7) to (9) below.

I. Choi (2005: 23):

- (7) a. a wine, a love, a salt  
      b. wines, loves, salts



- (8) a. too much chicken  
b. that's quite a bit of table for the money

Park (2008: 106):

- (9) a. three apples/ a great deal of apple  
b. three potatoes/ some potato  
c. a metallic gold/ lots of gold  
d. three chocolates/ too much chocolate

The above examples suggest that the so-called count noun is not lexically inserted with a [+Count] feature, but rather derives its value from somewhere else, which I assume to be the head of *nP*. In other words, the distinction between mass and count is a syntactic property, rather than a lexical property. More precisely, the interpretation of nouns as mass or count relies on the feature specification of their selecting head *n*. This allows nouns to be flexible and coercible by the context in which they occur. As indicated by Borer (2005), it is the CIP, which is equivalent to my *nP*, that determines the mass or count interpretation of a noun and further makes the noun ready to be counted (i.e. by numerals or quantifiers). More specifically, the function of *n* is to create or define a unit of measure for the concept denoted by the NP. For instance, Senft (2000: 22) maintains that numeral classifiers can individuate 'in terms of the kinds of the entity that it is' or 'in terms of quantity'. As a result, the [Unit] feature is postulated to provide the individualisation or subpartitioning of the noun. It is also this feature that decides the compatibility of the notion of quantity or cardinality provided by the dominating functional head Num. As for the [Ref] feature, this determines whether or not the description provided by the NP refers to a specific entity in a real or possible world.

Concerning the other function of the CI head (which is corresponding to my *n*), Cheng and Sybesma (1999) propose that it encodes definiteness as well. Their proposal is based on the contrast of the following Cantonese constructions in (10):

Cheng and Sybesma (1999: 511; modified):

(10) a. **zek**<sup>3</sup>    **gau**<sup>2</sup>    gam<sup>1</sup>jat<sup>6</sup>    dak<sup>6</sup>bit<sup>6</sup>    teng<sup>1</sup>waa<sup>6</sup>

CI    dog    today    special    obedient

‘The dog is especially obedient today.’

b. \***gau**<sup>2</sup>    gam<sup>1</sup>jat<sup>6</sup>    dak<sup>6</sup>bit<sup>6</sup>    teng<sup>1</sup>waa<sup>6</sup>

dog    today    special    obedient

Intended meaning: ‘The dog is especially obedient today.’

The requirement of classifiers in the subject position in Cantonese leads Cheng and Sybesma to draw the conclusion that definiteness is encoded on the the CI head in Sinitic languages. However, as pointed out by Yip (2008), not all numeral classifiers in Cantonese can occupy the sentence-initial position and perform the function of D. For instance, the ungrammaticality of (11) suggests that the CI head in Cheng and Sybesma’s analysis does not necessarily encode definiteness.

Yip (2008: 293; modified):

(11) \***sing**<sup>1</sup>    **seoi**<sup>2</sup>    hou<sup>2</sup>    cung<sup>5</sup>

CI    water    very    heavy

Intended meaning: ‘The litre of water is very heavy.’

In the light of this fact, I abandon Cheng and Sybesma’s proposal that definiteness is encoded on the CI head in Sinitic languages. Instead, I maintain the idea that D is the

universal category that determines the definiteness of nominal phrases.

With regard to the distinction between the sortal classifier and the mensural classifier (or massifier as in Cheng and Sybesma 1998, 1999), I propose that there is only one position, the functional head *n*, in the DP to accommodate a classifier or a massifier though they are semantically distinctive. This is based on the fact that a classifier and a massifier never co-occur in the same DP as shown in (12).<sup>3</sup>

- (12) a. \*yì kē xiāng píngguǒ  
          one Cl Mass apple
- b. \*yì xiāng kē píngguǒ  
          one Mass Cl apple
- Intended meaning: ‘a box of apples’

Following C.-C. Tang’s (2005) non-movement analysis of numeral classifiers, I suggest that sortal and mensural classifiers are different in their specification of the semantic feature [Sortal]. The former is [+Sortal] while the latter is [-Sortal].

In fact, the proposed different structural analysis for classifiers and massifiers is based on the syntactic distinction that Cheng and Sybesma (1998, 1999) observe for

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<sup>3</sup> C.-C. Tang (2005) points out that in Mandarin a classifier and a massifier can co-occur in the same DP marked with *de* as in (i):

- (i) yì hé wǔ lì de píngguǒ  
      one Mw five Cl DE apple  
      ‘a box of apples that are five in number’

In contrast to *wǔ lì píngguǒ* ‘five apples’ in which the Numeral-Cl sequence and the noun are of head-complement relation, C.-C. Tang assumes the *de*-marked Numeral-Cl sequence and the noun in (i) is of modifier-modifiee relation. Following C.-C. Tang’s proposal, I will argue a different structure for the DP with *de*-marked Numeral-Cl sequence in Chapter Four.

Mandarin. They claim that classifiers and massifiers in Mandarin are distinct in two important ways: (i) only a massifier can co-occur with the particle *de* and (ii) only a massifier can be modified by adjectives such as *dà* ‘big’ and *xiǎo* ‘small’. However, these two claims are both unsustainable. Concerning the co-occurrence with the particle *de* to distinguish classifiers from massifiers, C.-C. Tang (2005) points out that a classifier can co-occur with the particle *de* as a massifier does. Examples can be found in (13) below:

C.-C. Tang (2005: 444; modified):

- (13) a. yì        bǎi    kē    de    táoshù  
           one    hundred Cl    DE    peach tree  
           ‘one hundred peach trees’
- b. èrshí-sì    méi    de    dàn  
           twenty-four Cl    DE    egg  
           ‘twenty-four eggs’

As for the use of adjectives for distinguishing classifiers from massifiers, C.-C. Tang provides the following counter-examples:

C.-C. Tang (2005: 446; modified):

- (14) a. yì        xiǎo    lì    mǐ  
           one    small    Cl    rice  
           ‘one small grain of rice’
- b. yí        dà        kē    shítóu<sup>4</sup>

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<sup>4</sup> The grammaticality judgement on (14b) diverges. For some native speakers, (14b) is not acceptable.

one big Cl stone  
'one big stone'

As shown above, both of Cheng and Sybesma's claims are refuted. Therefore, their different structure analysis for classifiers and massifiers should be abandoned.

In summary, the functional head *n* contains the following interpretable features: the categorial [N] feature and the [Count], [Unit] and [Ref] features. The categorial [N] feature assigns nounhood to its complement  $\sqrt{P}$ . The [Count] feature determines the countability of the nominal phrase. The [Unit] feature individualises or subpartitions the noun and decides the compatibility of the notion of quantity or cardinality provided by the dominating functional head Num. The [Ref] feature determines whether or not the description provided by the NP refers to an entity in the real or possible world. In classifier languages, such as Sinitic languages, the functional head *n* can be overtly lexically realised by numeral classifiers, sortal or mensural. Furthermore, the *n*Ps can be divided into two types, namely \**n*P and *n*P. The former hosts the possessor DP in its Spec position when the possessor DP enters into the derivation.

### **2.2.3 Demonstratives and Specificity Projection**

While languages may differ with regard to the presence or absence of overt determiners or articles, all languages, according to Diessel (1999), include demonstratives. In this section, I focus on the abstract [Spec] feature realised under the functional project SP and discuss the place where the demonstrative is base-generated (i.e. the head or Spec of SP). Before the discussion of the generated site of demonstratives, let us turn to the head or phrasal status of demonstratives first. In line with Giusti (1994, 1997), I assume that demonstratives are syntactically phrasal elements merged in the Spec of a functional projection that belongs to the extended

nominal projection. Giusti's proposal is based on the fact that in Romanian the demonstrative can be crossed over by a noun as shown in (15):

Giusti (1997: 107; modified):

- (15) a.   acest     băiat     frumos  
          this     boy       nice  
          'this nice boy'
- b.   băiatul   (acesta) frumos  
          boy-the   this       nice  
          'this nice boy'
- c.   frumosul băiat  
          nice-the   boy  
          'the nice boy'
- d.   \*frumosul   acesta   băiat  
          nice-the    this     boy  
          Intended meaning: 'this nice boy'

Example (15a) indicates the basic word order. The N-raising in (15b) shows that the demonstrative is neither in the D head nor in any intermediate extended nominal head. In addition, (15d) shows that the demonstrative cannot be crossed by an adjective, even though an adjective can precede a noun in Romanian, as shown in (15c). If an adjective is moved as a phrase as argued by Dimitrova-Vulchanova and Giusti (1998), the fact that it cannot cross over the demonstrative can prove the maximal projection status of the demonstrative itself (Alexiadou, Haegeman and Stavrou 2007). Furthermore, the fact that a noun can move over a demonstrative, as shown in (15b), can be taken as an evidence of the phrasal status of demonstratives. If demonstratives

were in the head position, the movement of noun in (15b) will violate the Head Movement Constraint.

Moreover, the demonstrative can appear independent of the presence of a noun as in (16), which further supports the fact that unlike articles the demonstrative does not occupy the head of an extended projection of noun.

Alexiadou, Haegeman and Stavrou (2007: 106):

(16) I like that. vs I like the \*(book).

Of course, one may refrain from a unified treatment of the cross-linguistic variation of the demonstrative and reject the phrasal status of the demonstrative in Sinitic languages. However, like English, demonstratives in Mandarin, Taiwan Southern Min and Hakka can appear independent of the presence of a noun, as shown in (17) (See also Sio 2006 for her arguments of the phrasal status of the demonstrative in Cantonese). Therefore, I conclude that demonstratives in Sinitic languages are syntactically phrasal elements.

(17) a. Mandarin

**zhè**    bǐng      bú    shì      ge    héilǐ de    yāoqiú  
this    entirely   not   Copula   Cl   fair DE   request  
'This is really not a fair request.'

b. Taiwan Southern Min<sup>5</sup>

**tse**    hōo      i  
this    give      him

---

<sup>5</sup> See Section 2.10 for more discussions on the demonstratives in Taiwan Southern Min.

‘This is for him.’

c. Hakka

**lia**<sup>24</sup>    bun<sup>53</sup>    ngi<sup>55</sup>

this    give    you

‘This is for you.’

Provided we accept the phrasal status of demonstratives, the next question to come to our attention is which functional projection hosts the demonstrative phrase (DemP) (in its Spec position). An assumption shared by many linguists is that the demonstrative is found in the initial position of DP as a result of movement from a lower position (Brugè 2002; Giusti 1997, 2002; Grohmann and Panagiotidis 2005; Panagiotidis 2000; Shlonsky 2004). As for Sinitic languages, Sio (2006) proposes that the DemP is base-generated in the Spec of ClP.<sup>6</sup> However, my analysis rejects Sio’s (2006) proposal on the grounds that the demonstrative does not stand in any thematic relationship with the classifier, the lexical realisation of the light noun, as merger into a Spec position would imply. I assume that the *n*P is purely the  $\theta$ -domain of nominal phrases. As a result, in line with Brugè’s (2002) hypothesis that the demonstrative, which is specified for the features [+Ref] and [+Deictic], is merged in the Spec of a functional projection that immediately c-commands either the NP or the functional projection which contains the possessive, I propose that there is a functional projection, namely SP, on top of the *n*P and the Spec of SP is the place where the DemP is merged. My proposal is different from Brugè’s analysis in two respects. First, what the SP c-commands is not NP but the *n*P, since the \**n*P hosts the possessor DP in its Spec position. Second, I assume that the Dem head is specified for only one interpretable

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<sup>6</sup> On the other hand, Sio (2008) argues that the demonstrative is merged in the S head, whose complement is the NumeralP.



feature, namely the [Deictic] feature as opposed to Brugè's proposal that it bears another interpretable feature, namely the [Ref] feature. In contrast, I propose that the [Ref] feature is an uninterpretable feature on the Dem head, which needs to be matched and deleted via Agree with the interpretable [Ref] feature on the head of *nP*. It is this [Ref] feature on the light noun that decides whether or not the description provided by the NP refers to a specific entity in the real or possible world. The current proposal is also in line with Campbell's (1996) claim that demonstratives are the overt realisation of the specificity operator, which starts out from the Spec of a functional projection lower in the nominal structure and ends up in the Spec of the highest functional projection of the nominal phrase, though the trigger of the movement of DemP is different in the two analyses.

However, a very different approach is taken by D. Liu (2002), who makes a distinction between classifier-prominent and demonstrative-prominent languages within the Sino-Tibetan family as viewed from a typological perspective. He suggests that classifiers and demonstratives serve similar (deictic and referential) functions. A strict classifier-prominent language allows a Cl-N sequence without a numeral or demonstrative preceding, whereas a strict demonstrative-prominent language allows a Dem-N sequence without a classifier intervening. His finding seems to support Sio's proposal that the functional projection which hosts the DemP in Sinitic languages is the ClP, since demonstratives and classifiers may be two different lexical realisations of the features [+Ref] and [+Deictic]. Nevertheless, D. Liu's finding can be accommodated in my analysis if we assume that there are some sorts of movements taking place in the strict classifier-prominent languages. More precisely, I propose that the head of SP carries an interpretable [Spec\*] feature, which can be satisfied either by the merger of DemP or by the movement of *nP*. In a strict classifier-prominent language, I propose that the head of *nP* is lexically realised by the insertion of classifier and the [Spec\*]

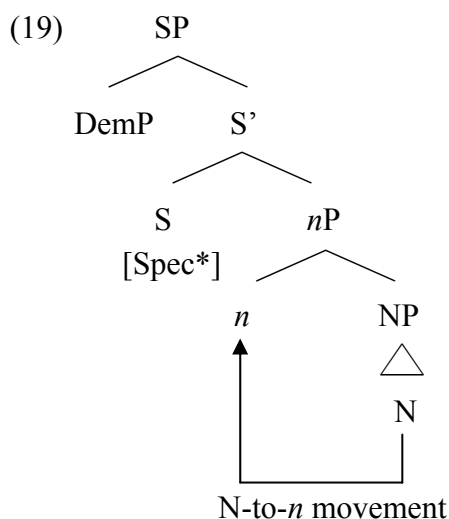
feature on the head of SP triggers the movement of *nP* to the Spec of SP, leading to the surface Cl-N sequence. For instance, as exemplified in (18), Cantonese allows the Cl-N sequence in both subject and object positions.

Sio (2006: 81):

(18) a. **zek<sup>3</sup> gau<sup>2</sup> zung<sup>1</sup>ji<sup>3</sup> sik<sup>6</sup> juk<sup>6</sup>**  
 Cl dog like eat meat  
 ‘The dog likes to eat meat’

b. **keoi<sup>5</sup> zung<sup>1</sup>ji<sup>3</sup>-zo<sup>2</sup> go<sup>3</sup> jau<sup>5</sup>-cin<sup>2</sup> zai<sup>2</sup>**  
 s/he like-Asp(ect) Cl have-money kid  
 ‘S/He is in love with a rich guy/gal’

By contrast, in a strict demonstrative-prominent language, I propose that the head of *nP* is filled by the head movement of N and the [Spec\*] feature on the head of SP is satisfied by the merge of DemP into the Spec of SP. This is illustrated in (19) below:



For instance, as shown in (20) and (21), Mandarin and Hakka allow the Dem-N

sequence.

- (20) Mandarin  
zhè shū  
this book  
'this/ these book(s)'

Chappell and Lamarre (2005: 49; modified):<sup>7</sup>

- (21) Hakka  
lia<sup>24</sup> sok<sup>5</sup>  
this rope  
'this rope'

More details on the analysis of Dem-N, Dem-Cl-N and Dem-Numeral-Cl-N sequences in Mandarin and Hakka will be presented in Section 2.9, where I argue that all involve movement of the DemP to the Spec of DP (via the Spec of NumP). Such a movement is triggered by the [Def\*] feature carried by the head of DP.

In summary, it is proposed that the functional head S contains the interpretable [Spec] feature and takes the *n*P as its complement. Furthermore, the Spec of SP hosts the DemP when the DemP enters into the derivation.

#### **2.2.4 Number Projection: The Nominal Parallel of TP**

In this section, I turn to consider the quantification of nominal expressions. There are two related projections discussed here, namely NumP and NumeralP. I assume that the former is projected based on an abstract [Num] feature whereas the latter is realised

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<sup>7</sup> Chappell and Lamarre provide a sentence from which I have isolated just the nominal phrase.

by numerals.

In line with Ritters' (1991, 1992, 1993) proposal that there is a functional projection NumP situated between DP and NP, Li (1997, 1998, 1999a, 1999b) claims that the Sinitic nominal phrase also has a NumP in its internal structure. More specifically, she argues that the functional head Num carries a plurality feature, which is realised as *-men* in Mandarin and *-s* in English, and that its Spec position is the place where the NumeralP is base-generated. Such an analysis contrasts with Cheng and Sybesma's (1999, 2005) proposal that the Numeral head takes ClP as its complement to form the NumeralP. Nonetheless, as indicated by Watanabe (2006) using the example given in (22), modified numerals need to occupy a Spec position due to their phrasal status.

Watanabe (2006: 253; modified):

- (22) a. [at least three] books  
b. [more than three] books

In addition, as pointed out by S.-F. Yang (2005), two pieces of evidence further support the claim that numerals in Sinitic languages are syntactically phrasal in nature. First, numerals can be replaced by a *wh*-phrase, as shown in (23).

S.-F. Yang (2005: 45; modified):

- (23) nǐ yǒu jǐ běn shū  
you have how many Cl book  
'How many books do you have?'

Second, numerals with high values can be decomposed into coordinated numerals as

illustrated in (24) below:

- (24) a. **yì bǎi sān shí** běn shū  
one hundred three ten Cl book  
'one hundred and thirty books'

S.-F. Yang (2005: 50; modified):

- b. **yì bǎi yòu sān shí** běn shū  
one hundred and three ten Cl book  
'one hundred and thirty books'

Since syntactic objects that result from co-ordination must be phrasal elements, the grammaticality of (24b) indicates that in Sinitic languages numerals are in the Spec position rather than in the head position.

Furthermore, the phrasal status of numerals can also be supported by the so-called N'-ellipsis phenomenon as shown in (25), where the elided element is marked by strikethrough.

Saito, Lin and Murasugi (2008: 7; modified):

- (25) John bought [<sub>DP</sub> three [<sub>NP</sub> books]], and Mary bought [<sub>DP</sub> five [<sub>NP</sub> ~~books~~]]

According to Saito and Murasugi (1990) and Lobeck (1990), the main cases of ellipsis, namely N'-ellipsis, VP-ellipsis and sluicing, all involve functional heads, such as D, T and C respectively, with the omission of their complements (i.e. NP, *v*P and TP). Each case is allowed only when the Spec position is filled. As far as N'-ellipsis is concerned, the omission of NP within DP is licensed only when the Spec of DP is occupied (Saito, Lin and Murasugi 2008). Since the second NP *books* in (25) can be

deleted, the numeral *five* must fill the Spec of DP, which further suggests that numerals are not base-generated as the head of NumP cross-linguistically.

As a result, I adopt Li's proposal that it is the functional head Num rather than Numeral that bears the interpretable [Num] feature. However, in contrast to her analysis of plural morpheme *-men* in Mandarin and *-s* in English, I propose that these two morphemes are the instantiation of the functional *n* head and their realisation is in the phonetic representation (i.e. the PF component) rather than in the Narrow Syntax in conformity with a Distributed Morphology approach. This proposal follows the line of research by Borer (2005) where the difference between classifier and non-classifier languages is reduced down to the morpho-phonological realisation of the functional head *n*. Further discussion on the analysis of the morpheme *-men* in Mandarin and its counterparts in the other three Sinitic languages will be presented in Section 2.4 and Section 3.2.2.

Furthermore, I propose that in Sinitic languages the NumP is always dominated by a DP when appearing in argument positions<sup>8</sup> and that the interpretable [Num] feature

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<sup>8</sup> I assume that the NumP is not dominated by a DP when it functions as a predicate as shown in (i), (ii) and (iii):

- (i) a. John is [<sub>NumP</sub> a student].  
 b. \*John is [<sub>DP</sub> the student].
- (ii) a. Zhāngsān shì [<sub>NumP</sub> ge xuéshēng].  
       Zhāngsān Copular Cl student  
       ‘Zhāngsān is a student’  
 b. \*Zhāngsān shì [<sub>DP</sub> zhè ge xuéshēng].  
       Zhāngsān Copular Dem Cl student
- (iii) a. Zhāngsān hé Lǐsì shì [<sub>NumP</sub> xuéshēng].  
       Zhāngsān and Lǐsì Copular student  
       ‘Zhāngsān and Lǐsì are students.’  
 b. \*Zhāngsān hé Lǐsì shì [<sub>DP</sub> xuéshēngmen].  
       Zhāngsān and Lǐsì Copular students  
       Intended meaning: ‘Zhāngsān and Lǐsì are students.’

on the Num head can be specified as [Singular] (henceforth [Sg]) or [Plural] (henceforth [Pl]) in Sinitic languages and provide the function of counting quantity (i.e. to accommodate the NumeralP in its Spec position). To be more precise, as suggested by S.-F. Yang (2005), the Num head which is specified as [Pl] refers to the pluralities within the set denoted by the *nP*.

In summary, it is proposed that the functional head Num contains the interpretable [Num] feature and its Spec position hosts the NumeralP when the NumeralP enters into the derivation.

### **2.2.5 Determiner Projection: The Nominal Parallel of CP**

In terms of argumenthood, based on the theoretical account that only DP can function as an argument by Szabolcsi (1987, 1994) and Stowell (1989, 1991), I propose that nominal phrases in Sinitic languages project to DPs in argument positions at all times, although Sinitic languages are languages without articles. This is not a new idea for article-less languages, because both Progovac (1998) and Pereltsvaig (2007) maintain that the projection of DPs is a property of Universal Grammar. It is independent of the presence of the lexical item which realises the head of the projection. Moreover, the assumption that the existence of DP is part of the universal inventory is more compatible with the statement that there is a parallelism between clausal and nominal structure.

In this dissertation, DP is treated as the nominal parallel of the clausal functional projection CP. In addition to its function of turning a predicate into an argument (Szabolcsi 1987, 1994; Stowell 1989, 1991), it also serves as an operator binding a variable in an NP. In other words, an NP provides a restriction for the operator in D (Li and Shi 2003). However, given the assumption that DP corresponds to CP, it is reasonable to claim that DP can split into a number of separate projections, paralleling

Rizzi's (1997, 2004) idea that the CP layer of clause structure should be split into force phrase (ForceP), topic phrase (TopP), focus phrase (FocP) and finite phrase (FinP). This issue will be addressed in Chapter Three. Based on the Sinitic language data, the encoding of discourse-related properties in the nominal domain will be discussed in more detail there. In this chapter, I will focus on the parallel of FinP in the nominal domain, namely the  $D_{\text{def}}\text{P}$ , only. I propose that the  $D_{\text{def}}$  head is the locus of definiteness and accommodates an interpretable [Def] feature (cf. Lyons 1999).

Furthermore, since Lyons (1999) argues that definiteness should be unified with person as the same category in order to account for the semantic incompatibility between person and indefiniteness and a certain complementarity between person and definiteness, I propose that the  $D_{\text{def}}$  head accommodates another interpretable [Person] feature in addition to the interpretable [Def] feature. Such a proposal can account for Postal's (1969) finding that in English pronouns behave like the definite article *the* in nominal expressions such as *we linguists*.

In summary, it is proposed that the projection of DPs is a property of Universal Grammar so that it exists in article-less languages like Sinitic languages as well. The functional head  $D_{\text{def}}$  contains the interpretable [Def] and [Person] features.

## 2.2.6 Movements in the Nominal Domain

Given that there is symmetry between the structure of clauses and nominal phrases, it is reasonable to suggest that the internal structure of DP may involve certain head movements parallel to V-to- $v$  movement,  $v$ -to-T movement and T-to-C movement in the clausal domain. For instance, Cinque (1994) proposes that in the DP domain of Romance languages there is N-movement (N-to-D movement) that is triggered by the checking of gender and number features. As far as Sinitic languages are concerned, following Cinque's proposal, Cheng and Sybesma (1999, 2005) argue that definite bare



nouns in Mandarin undergo N-to-Cl movement.

However, the parallelism between CP and DP in terms of head movement has been criticised by Alexiadou (2001) and Sadler (2001), on the grounds that N-raising shows no correlation with rich morphology whereas V-raising correlates with the richness of verbal morphology. On the other hand, as indicated by Alexiadou herself, the concept that there is a correlation between rich morphology and movement (i.e. Rohrbacher's (1999) Rich Agreement Hypothesis) has been dismissed from the recent Minimalist perspective, for morphology and syntax are taken as two independent components in human language faculty. For example, the Tromsø dialect of Norwegian exhibits the verb raising pattern though it lacks the richness of agreement morphology (Bobaljik 2002), whereas Russian has no verb raising though it has rich agreement morphology (Pereltsvaig 2007). In addition to head movement, phrasal movements within the nominal phrase will become another important issue in the following data analysis.

In what follows, the nominal phrases in Sinitic languages will be discussed in the same bottom-up fashion. The discussion will consider bare nouns, nouns with plural/collective markers, nominal expressions with numerals and classifiers, nominal expressions with demonstratives, and nominal expressions with possessives.

### **2.3 Bare Noun**

Bare nouns<sup>9</sup> are conventionally subcategorized into two types based on their referentiality, namely common nouns and proper names. The former are names of objects without any degree of inherent referentiality, while the latter can be used to identify and refer to entities provided that interlocutors' knowledge and discourse are specified from the context (Li 1999c; Longobardi 1994, 1996, 2001, 2005; Lu 1998). Cross-linguistically, proper names may appear in argument positions without any

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<sup>9</sup> The term 'bare noun' refers to nouns that are morphologically unmarked.

affixation or articles<sup>10</sup>, whereas in many languages common nouns alone cannot. As a result, common nouns are frequently affixed with morphemes or co-occur with articles in order to appear as arguments. For instance, common count nouns in English are required to occur with articles (i.e. *the* or *a*), demonstratives (i.e. *this* or *that*), quantifiers (i.e. *any*, *some*, *every* and etc.) or the plural marker *-s* in argument positions. As indicated in (26a, b, c), the common nouns *boy* and *toy* require an article or the plural marker *-s* to occur in argument positions. When the article and the plural marker are absent, the sentence becomes ungrammatical, as shown in (26d).

- (26) a. The boy likes toys.  
b. The boy likes the toy.  
c. Boys like toys.  
d. \*Boy likes toy.

In contrast with English, it is well known that Mandarin Chinese allows bare nouns to appear as arguments without any affixation or articles as in (27), since Mandarin Chinese lacks articles and productive number morphology. This is one of the main reasons why all nouns in Mandarin Chinese are assumed to have a mass denotation by some researchers (see Chao 1968; Chierchia 1998; Li and Thompson 1981 among many others).

Cheng and Sybesma (1999: 510; modified):

- (27) a. **gǒu** yào guò mǎlù  
dog want cross road

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<sup>10</sup> In some languages (e.g. Greek, dialects of German, Spanish), proper names can co-occur with the article. In other languages (e.g. English), proper names do not co-occur with the article.

Singular reading: ‘The dog wants to cross the road.’

Plural reading: ‘The dogs want to cross the road.’

NOT: ‘A dog wants to cross the road’ or ‘Dogs want to cross the road.’

b. **gǒu** ài chī ròu

dog love eat meat

‘Dogs love to eat meat.’

As we can see, a bare noun in Mandarin can be definite in an episodic context as shown in (27a), which is not possible in English. In addition, a bare noun in Mandarin can be generic as shown in (27b), which is also not possible in English. The situation is the same for Hakka and Taiwan Southern Min. Examples can be found in (28) and (29) below:

(28) Hakka

a. **gieu**<sup>31</sup> oi<sup>55</sup> go<sup>55</sup> ma<sup>24</sup> lu<sup>55</sup>

dog want cross road

Singular reading: ‘The dog wants to cross the road.’

Plural reading: ‘The dogs want to cross the road.’

NOT: ‘A dog wants to cross the road’ or ‘Dogs want to cross the road.’

b. **gieu**<sup>31</sup> oi<sup>55</sup> siit<sup>5</sup> ngiuk<sup>2</sup>

dog love eat meat

‘Dogs love to eat meat.’

Cheng and Sybesma (2005: 268; modified):

(29) Taiwan Southern Min

a. **káu** beh lim tsuí

dog want drink water

Singular reading: 'The dog wants to drink water.'

Plural reading: 'The dogs want to drink water.'

NOT: 'A dog wants to drink water' or 'Dogs want to drink water.'

b. **káu** ài lim tsuí

dog like drink water

'Dogs like to drink water.'

Furthermore, as exemplified in (30) and (31), bare nouns in Mandarin can have quite different interpretations. More precisely, both preverbal and postverbal bare nouns can be interpreted as indefinite, definite or generic.

(30) Subject position:

M.-L. Hsieh (2008: 77; modified):

a. Indefinite

wàimiàn **gǒu** zài jiào<sup>11</sup>

outside dog Asp bark

'Outside dogs are barking.'

Cheng and Sybesma (2005: 261; modified):

b. Definite

**gǒu** jīntiān tèbié tīnghuà

dog today very obedient

Singular reading: 'The dog was very obedient today.'

Plural reading: 'The dogs were very obedient today.'

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<sup>11</sup> This sentence is ambiguous given that it can have a definite reading: 'Outside, the dog(s) is/are barking.'

c. Generic

**gǒu** ài chī ròu  
dog love eat meat  
'Dogs love to eat meat.'

(31) Object position:

Cheng and Sybesma (2005: 261; modified):

a. Indefinite

Húfěi mǎi **shū** qù le  
Hufei buy book go SFP  
Singular reading: 'Hufei went to buy a book.'  
Plural reading: 'Hufei went to buy books.'

b. Definite

Húfěi hē-wán-le **tāng**  
Hufei drink-finish-Asp soup  
'Hufei finished the soup.'

c. Generic

wǒ xǐhuān **gǒu**  
I like dog  
'I like dogs.'

According to Cheng and Sybesma's (1999, 2005) analysis, the diverse interpretations result from the different underlying syntactic structures. More specifically, they propose that the nominal expression in Mandarin and Cantonese projects to a NumeralP when it is indefinite but only to a CIP when it is definite, for they assume that the NumeralP is inherently indefinite. In other words, in their theory adding a numeral

on top of a classifier can ‘undo’ the definiteness. In addition, they maintain that definite bare nouns in Mandarin undergo N-to-Cl movement.

In contrast to Cheng and Sybesma’s (1999, 2005) analysis, I argue that there is a unified underlying syntactic structure for both definite and indefinite nominal expressions. That is, they are all  $D_{\text{def}}\text{Ps}$  when they occur in argument positions. Such an account is preferable because only one functional projection, namely the  $D_{\text{def}}\text{P}$ , is proposed for the encoding of (in)definiteness cross-linguistically. As a result, a universal inventory for the encoding of (in)definiteness in natural languages can be reached. More specifically, I propose that the (in)definiteness of nominal phrases depends solely on the feature specification of the functional head  $D_{\text{def}}$ , but not on that of the Numeral head or the Cl head as proposed by Cheng and Sybesma. In contrast to their head-movement analysis of bare nouns in Mandarin, I provide an alternative account, arguing that there is N-to- $n$  movement followed by phrasal movement of  $n\text{P}$  to the Spec of  $D_{\text{def}}\text{P}$ . This proposal can better account for the unvaried adjective-noun order in Mandarin. However, let us consider Cheng and Sybesma’s head-movement analysis first.

The head-movement analysis of bare nouns in Mandarin follows Cinque’s (1994) proposal that there is N-movement (head movement of N to D) in the DP domain of Romance languages. Cinque’s analysis is based on the relative order of nouns with respect to a number of modifying adjectives. Such an analysis is parallel to the head-movement analysis of verb in the clausal domain, which is based on the relative order of verbs with respect to a number of modifying adverbs. Nevertheless, given that Mandarin has an unvaried adjective-noun order as shown in (32), Cheng and Sybesma’s (1999, 2005) postulation of head movement in Mandarin nominal phrases seems to be unconvincing. If there were N-to- $n$  movement (which is corresponding their N-to-Cl movement) in bare nouns, (32a) should be ungrammatical, whereas (32b) should be

grammatical. Yet this is not the case. Cheng and Sybesma do not take this phenomenon into consideration. As a result, an alternative account is required for the relevant data.

- (32) a. piàoliàng nǚhái  
 beautiful girl  
 ‘beautiful girl’
- b. \*nǚhái piàoliàng  
 girl beautiful  
 Intended meaning: ‘beautiful girl’

Moreover, Cheng and Sybesma’s suggestion that the different interpretations of bare nouns are due to the different underlying syntactic structures (namely, a NumeralP for the indefinite nominal and a CIP for the definite nominal) is built on their theoretical assumption that the NumeralP is inherently indefinite and the CIP is inherently definite. However, the proposal for the functional head Numeral or Cl to be specified as indefinite or definite is not fully justified. It is motivated by their assumption that the encoding of (in)definiteness in articulated and article-less languages is fundamentally different. The two types of encoding strategies that they assume are schematised below:

Sio’s (2006: 29; modified):

Article-less languages such as Sinitic languages

- (33) [<sub>NumeralP</sub> Indefinite [<sub>CIP</sub> Definite]]

Articled languages such as Romance and Germanic languages

- (34) [<sub>DP</sub> Definite [<sub>NumeralP</sub> Indefinite]]

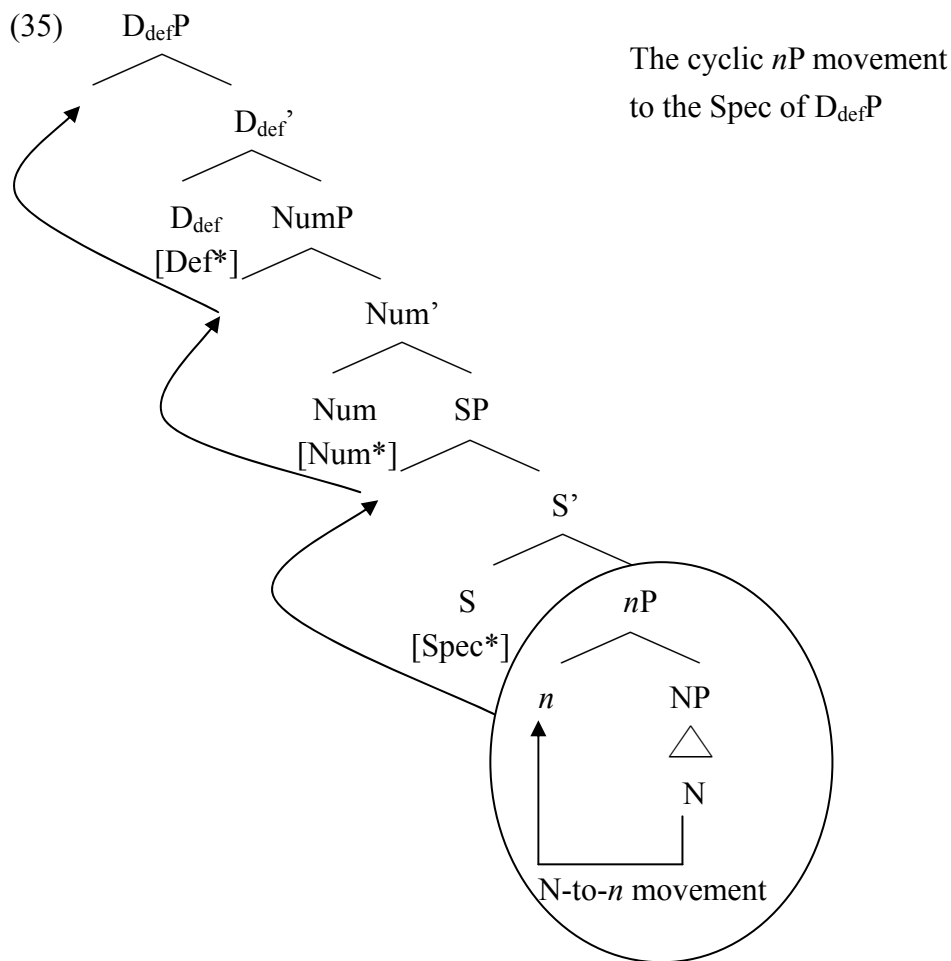
Nonetheless, such an assumption is questionable. Why should there be two types of encoding strategies instead of one? Their answer to this question may be that the article-less languages do not have the DP layer in the underlying syntactic structure. However, if the CIP and NumeralP can be non-overt as they propose for Sinitic bare nouns, there is no reason for arguing against the postulation of a covert DP.

In addition, as noted by Chan (1999), it is not theoretically plausible for the CI head and the Numeral head to have a fixed value for the [Def] feature, which in turn will lead to a crash in the derivation, for the feature specification of a functional head is percolated to the highest node of an extended projection (Grimshaw 1991). Therefore, Cheng and Sybesma's (1999, 2005) postulation of inherently indefinite NumeralP containing the CI head with the inherent [+Def] feature must be on the wrong track.

On the contrary, if it is believed that the projection of DPs is a property of Universal Grammar, a universal inventory for the encoding of (in)definiteness in natural languages can be reached. That is, the (in)definiteness of nominal phrases should rely on the feature specification of the functional head  $D_{\text{def}}$ , but not on that of the Numeral head or the CI head. As a result, we can have a unified underlying structure for bare nouns in Sinitic languages. That is to say, definite and indefinite bare nouns are all  $D_{\text{def}}$ P. The only difference is the value of the interpretable [Def] feature on the  $D_{\text{def}}$  head.

Given that DP is present in Sinitic nominal expressions, then, according to Cheng and Sybesma's (1999, 2005) idea, definite bare nouns have to move to the functional head which encodes the [Def] feature (i.e.  $D_{\text{def}}$  in my analysis). Having rejected the head-movement analysis of bare nouns, I am going to provide an alternative account, in which there is N-to-*n* movement followed by phrasal movement of *n*P to the Spec of  $D_{\text{def}}$ P (via the Spec of SP and the Spec of NumP). This is illustrated in (35) below.





For definite bare nouns, the  $D_{\text{def}}$  head with the unvalued uninterpretable [Ref] feature and the interpretable [+Def] feature agrees with the  $n$  head with the interpretable [+Ref] feature and the unvalued uninterpretable [Def] feature. The  $nP$  then raises to the Spec of  $D_{\text{def}}P$  to satisfy the [Def\*] feature on the  $D_{\text{def}}$  head. The intermediate movements to the Spec of SP and the Spec of NumP are triggered by the [Spec\*] feature on the S head and the [Num\*] feature on the Num head respectively. As for indefinite bare nouns, the  $nP$  undergoes the same movement operation as definite bare nouns, but the  $n$  head gets its uninterpretable and unvalued [Def] feature specified as [-Def] from the  $D_{\text{def}}$  head. The N-to- $n$  movement in the derivation is triggered by the [N\*] feature carried by the  $n$  head.

Compared with a pure head-movement analysis, such an account is more compatible with the following analyses in Sections 2.4 through 2.12, where I propose that various syntactically phrasal elements move to the Spec of D<sub>def</sub>P to satisfy the [Def\*] feature on the D<sub>def</sub> head.

The analysis provided can also be applied to Taiwan Southern Min and Hakka. In the rest of this section, I will focus on Cantonese since Cheng and Sybesma (2005) indicate that Cantonese is different from Mandarin and Taiwan Southern Min in that bare nouns cannot receive a definite reading as shown in (36):

Cheng and Sybesma (2005: 269; modified):

- (36) \*gau<sup>2</sup>    jiu<sup>3</sup>    gwo<sup>3</sup>    maa<sup>5</sup>lou<sup>6</sup>  
dog    want    cross    road

Intended meaning: ‘The dog wants to cross the road.’

Instead, bare nouns in Cantonese can only receive an indefinite reading as in (37) or a generic reading as in (38):

Cheng and Sybesma (2005: 269; modified):

- (37) Wu<sup>4</sup>fei<sup>2</sup>    heoi<sup>3</sup>    maai<sup>5</sup>    **syu<sup>1</sup>**  
Wufei    go    buy    book

‘Wufei went to buy a book/some books.’

- (38) ngo<sup>5</sup>    zung<sup>1</sup>ji<sup>3</sup>    **gau<sup>2</sup>**  
I    like    dog

‘I like dogs.’

According to the unified account for both definite and indefinite nominal expressions, the (in)definiteness of Cantonese nominal phrases depends solely on the feature specification of the functional head  $D_{\text{def}}$ . More precisely, the only difference between definite and indefinite nominal phrases is the value of the interpretable [Def] feature on the  $D_{\text{def}}$  head. The grammatical counterpart of (36) is provided in (39) below:

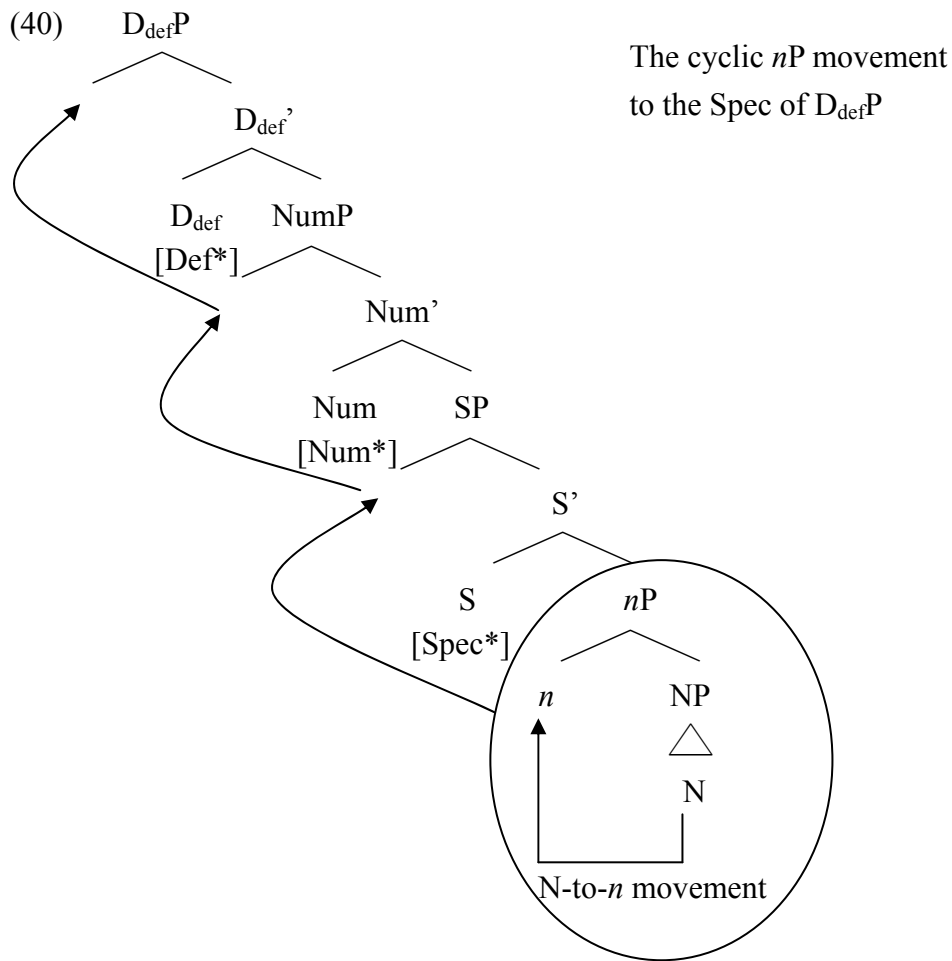
Sio (2006: 27; modified):

(39) **zek**<sup>3</sup> **gau**<sup>2</sup> jiu<sup>3</sup> gwo<sup>3</sup> maa<sup>5</sup>lou<sup>6</sup>

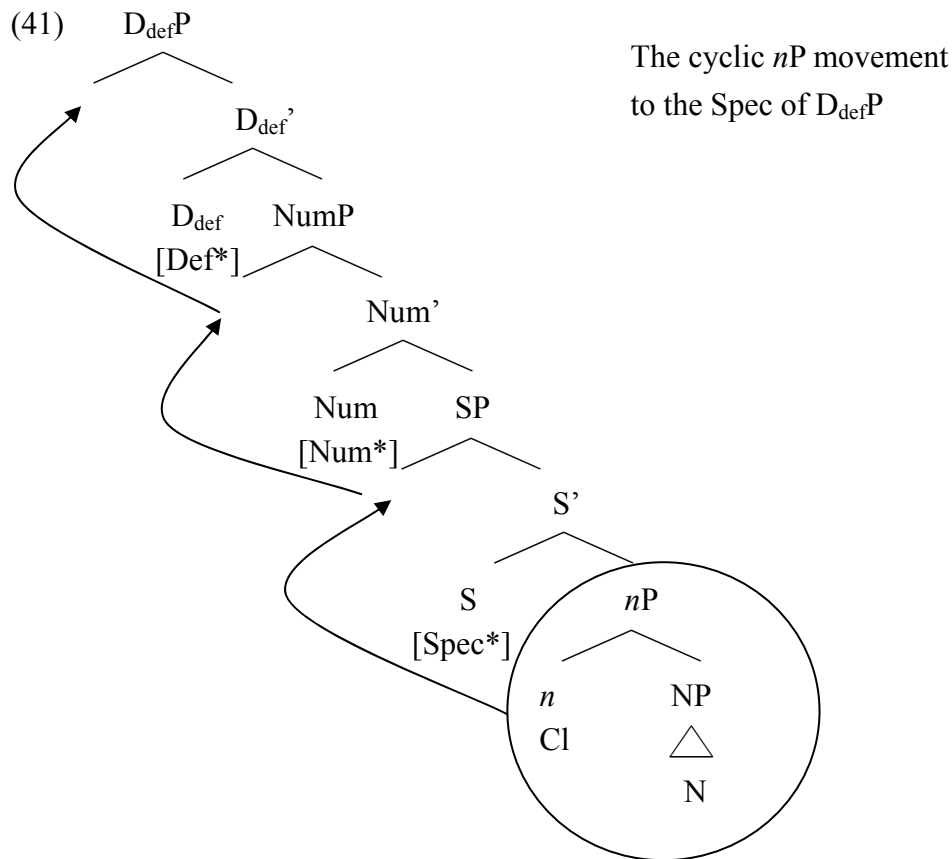
Cl dog want cross road

‘The dog wants to cross the road.’

Given the analysis for bare nouns in Mandarin, I propose that there is an instance of N-to-*n* movement followed by phrasal movement of *n*P to the Spec of  $D_{\text{def}}$ P in Cantonese bare nouns. Hence, in the indefinite bare noun such as (37), the *n*P with the interpretable [+Ref] feature raises to the Spec of  $D_{\text{def}}$ P to satisfy the [Def\*] feature on the  $D_{\text{def}}$  head. The uninterpretable [Ref] feature on the  $D_{\text{def}}$  head is valued by the interpretable [+Ref] feature on the *n* head via the operation Agree. At the same time, the unvalued [Def] feature on the *n* head is specified as [-Def] by the  $D_{\text{def}}$  head through the same operation. The movement operations in the derivation of Cantonese bare nouns are illustrated in (40) below.



As for the definite Cl-N sequence as in (39), the *nP* undergoes the same movement operation as indefinite bare nouns, but the *n* head which is lexically realised by a classifier gets its unvalued [Def] feature specified as [+Def] from the  $D_{\text{def}}$  head. The cyclic *nP* movement is illustrated in (41) below:



As for the ungrammaticality of (36), I assume that this is due to the requirement in Cantonese that the uninterpretable [+Def] feature on the *n* head must be spelt out by the insertion of classifiers rather than the N-to-*n* movement.

In summary, it has been shown in this section that bare nouns can be interpreted as indefinite and generic in the four Sinitic languages. As far as the definite interpretation is concerned, bare nouns can be so interpreted in Mandarin, Taiwan Southern Min and Hakka, but not in Cantonese. The interpretation of bare nouns in the four Sinitic languages is summarised in the following table:

Table 1 Interpretation of Bare Nouns in the Four Sinitic Languages

| Interpretation<br>of bare nouns | Definite |        | Indefinite |        | Generic |        |
|---------------------------------|----------|--------|------------|--------|---------|--------|
|                                 | Subject  | Object | Subject    | Object | Subject | Object |
| Mandarin                        | √        | √      | √          | √      | √       | √      |
| Cantonese                       | X        | X      | X          | √      | √       | √      |
| Taiwan<br>Southern<br>Min       | √        | √      | √          | √      | √       | √      |
| Hakka                           | √        | √      | √          | √      | √       | √      |

## 2.4 Nominal with Collective Marker

As indicated in the previous section, plurality in Sinitic languages can appear on bare nouns. A morphologically unmarked noun as exemplified in (42) may express plurality without any marker on it.

Cheng and Sybesma (1999: 510; modified):

(42) **gǒu** yào guò mǎlù

dog want cross road

Singular reading: ‘The dog wants to cross the road.’

Plural reading: ‘The dogs want to cross the road.’

Therefore, Sinitic languages are usually taken to lack number marking. However, in Mandarin a morpheme *-men* is found attached to certain nominal expressions, such as human nouns, pronouns and proper names, to express plurality. Li (1999a) claims that in Mandarin the [PI] feature on the functional head, Num, can be lexically realised as this suffix *-men*. Nevertheless, the use of the morpheme *-men* is different from the plural marking on nouns observed in Indo-European languages. It is quite restricted.

Except for the usage with personified objects in certain contexts, it can only be suffixed to nominal expressions designating human beings. This can be exemplified by the contrast of grammaticality in (43).

- (43) a. háizi-men  
child-MEN  
'the children'
- b. \*pingguǒ-men  
apple-MEN  
Intended meaning: 'the apples'

Moreover, as indicated by Iljic (1994, 2001), the *N-men* sequence must be interpreted with a definite meaning. This leads to Li's (1999a) conclusion that *-men* is attached to an element in D which is specified for [+Def].

Nevertheless, in this section I will argue against Li's (1999a) proposal for the English plural marker *-s* and the Mandarin plural marker *-men*. According to Li's (1999a) head-movement analysis, the English plural marker *-s* is base-generated in the Num head and suffixed to the noun that raises to the Num head, whereas the Mandarin plural marker *-men* is base-generated in the Num head and later attached to an element occupying the D head. However, given the fact that English and Mandarin have an unvaried adjective-noun order<sup>12</sup> as shown in (44) and (45) respectively, I abandon the head-movement analysis and suggest that these two morphemes are the instantiation of the functional *n* head and their realisation is in the phonetic representation (namely, the PF component) rather than in the Narrow Syntax in conformity with a Distributed

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<sup>12</sup> Here I assume that the adjective can be adjoined to the NP or *nP*. More discussion on the modification structure will be addressed in Chapter Four.

Morphology approach. To be more precise, I propose that *-s* in English is the spell-out of the interpretable [+Unit] feature and the uninterpretable [PI] feature on the *n* head (cf. Borer 2005) and that the suffix *-men* in Mandarin is the spell-out of the interpretable [+Human] and [-Unit] features and the uninterpretable [PI], [Person] and [+Def] features on the *n* head. Such a proposal can better explain the adjective-noun order in English and Mandarin.

- (44) a. pretty girls  
 b. \*girls pretty

- (45) a. piàoliàng bǎobèi-men  
 pretty girl-MEN  
 ‘the pretty girls’  
 b. \*bǎobèi-men piàoliàng  
 girl-MEN pretty  
 Intended meaning: ‘the pretty girls’

If the suffix *-s* in English were base-generated in the Num head and the noun raised to the Num head as proposed by Li, (44a) should be ungrammatical and (44b) should be grammatical, since the noun has to move across the adjective to adjoin to the Num head. However, this definitely does not match the grammaticality as shown in (44); therefore, an alternative account is required. Given the phrase structure in (1), I propose that in English there is N-to-*n* movement triggered by the [N\*] feature, which is parallel to the V-to-*v* movement in the clausal domain. After the derivation of DP, the interpretable [+Unit] feature and the uninterpretable [PI] feature on the *n* head are then spelt out as the morpheme *-s*.



The derivation of nouns suffixed with *-men* in Mandarin is more complicated. Due to the fact that *-men* constructions have a human reference restriction, as illustrated in (43b), a definiteness requirement, as illustrated in (46), and an incompatibility with counting, as illustrated in (47), many linguists have suggested that *-men* should not be treated as a simple counterpart of the English plural morpheme suffix *-s*.

Huang, Li and Li (2009: 308; modified):

(46) a. wǒ      qù      zhǎo      **háizi-men**

I      go      find      child-MEN

‘I will go find the children.’

b. wǒ      qù      zhǎo      **háizi**

I      go      find      child

‘I will go find the/some child/children.’

Cheng and Sybesma (1999: 537; modified):

(47) \*sān      ge      háizi-men

three      Cl      child-MEN

Intended meaning: ‘the three children’

Moreover, as indicated by X. Zhang (2008), the treatment of *-men* as a pure number marker predicts that a suffixed form, such as *jiāzhǎng-men* in (48), should be indistinguishable from its bare form, such as *jiāzhǎng* in (49), which is also interpreted as definite and plural, since both kinds of nominal expressions are human-denoting, definite and plural.

X. Zhang (2008: 412-413; modified):

(48) dài **jiāzhǎng-men** dào xiàozhǎng bàngōngshì qù, kěyǐ mā?

bring parent-MEN arrive principal office go, allowed SFP

1<sup>st</sup> person reading: ‘Could you bring us parents to the principal’s office?’

2<sup>nd</sup> person reading: ‘May I bring you parents to the principal’s office?’

3<sup>rd</sup> person reading: ‘Could you bring the parents to the principal’s office?’

(49) dài **jiāzhǎng** dào xiàozhǎng bàngōngshì qù, kěyǐ mā?

bring parent arrive principal office go, allowed SFP

‘Could you bring the parent(s) to the principal’s office?’

However, as shown in (48) and (49), the suffixed form differs from the bare form in that the former can have varied person interpretations according to context whereas the latter only allows a third-person reading.

Given the above conditions on the usage of *-men*, I propose that this suffix is the spell-out of the interpretable [+Human] and [-Unit] features and the uninterpretable [Pl], [Person] and [+Def] features on the *n* head.

However, common nouns with *-men* raise problems that cannot be discussed immediately and a full discussion of them will be delayed until Section 3.2.2. Next I will firstly focus on how the morpheme *-men* in Mandarin is used to construct a plural personal pronoun, as exemplified in (50):

(50) a. wǒ-men

I-MEN

‘we/us’

b. nǐ-men

you-MEN

‘you (plural)’

c. tā-men

s/he-MEN

‘they/them’

In line with Cardinaletti (1994) and Cheng and Sybesma (1999), I assume that in Sinitic languages pronouns also start out in the N head, since a singular form of pronoun is similar to a common noun in that it can follow a numeral and a classifier, as shown in the following examples from Mandarin:

Cheng and Sybesma (1999: 538; modified):

(51) cóng nà ge jìngzi wǒ kěyǐ kàndào wǔ ge wǒ  
from that Cl mirror I can see five Cl I

‘From that mirror, I can see five copies of myself (five I’s/me’s).’

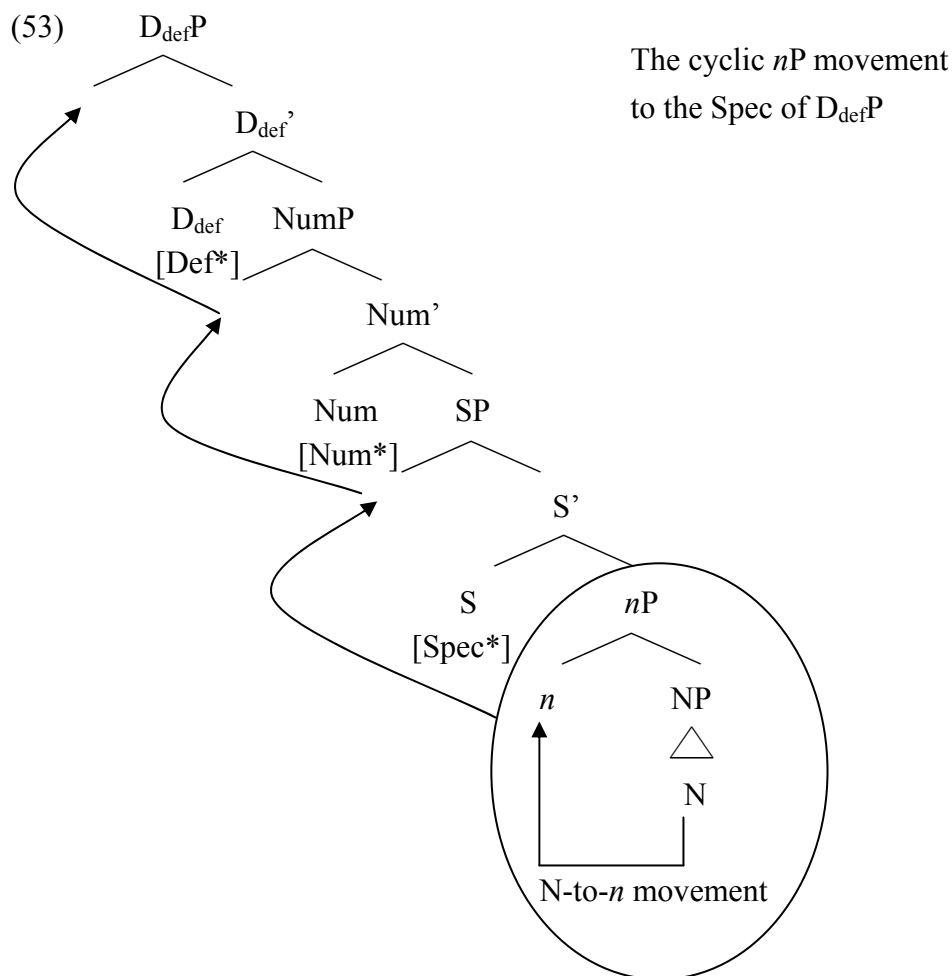
Huang, Li and Li (2009: 302; modified):

(52) jìngzi lǐ yǒu sān ge tā  
mirror inside have three Cl him

‘Inside the mirror are three hims.’

In the derivation of plural forms, pronouns move further up to a higher head position (namely, the *n* head). More specifically, I propose that a feature bundle, including an interpretable [pronominal] feature, enters the derivation in the N position followed by the N-to-*n* movement and the phrasal movement of *n*P to the Spec of D<sub>def</sub>P. The N-to-*n* movement is triggered by the [N\*] feature on the *n* head. The successive cyclic

movement of *nP* to the Spec of  $D_{\text{def}}P$  via the Spec of *SP* and the Spec of *NumP* is triggered by the [Spec\*], [Num\*] and [Def\*] features carried by the functional heads *S*, *Num* and  $D_{\text{def}}$  respectively. The merger of the [PI] feature on the *Num* head provides the number information, while the merger of the [Person] and [+Def] features on the  $D_{\text{def}}$  head provides person and definite interpretation. The plural personal pronoun is then spelt out. The entire derivation is illustrated in (53) below.<sup>13</sup>



<sup>13</sup> In the derivation of the Numeral-Cl-Pronoun sequence in (51) and (52), there is no N-to-*n* movement because the *n* head is lexically realised by the classifier. Furthermore, the [Num\*] feature on the *Num* head is satisfied by the merger of numeral, and the [Def\*] feature on the  $D_{\text{def}}$  head is satisfied by the movement of numeral from the Spec of *NumP*. This is similar to the derivation of the Numeral-Cl-N sequence discussed in Section 2.7.

After the derivation, the whole DP is then spelt out by the PF component as the plural forms of personal pronouns (namely, *wōmen* ‘we/us’, *nǐmen* ‘you (plural)’ and *tāmen* ‘they/them’ as in (50)). The current analysis for plural pronouns is perfectly consistent with the analysis of bare nouns provided in the previous section and the analysis of the CI-N sequence in the next section.

Similar to Mandarin, the collective marker *-dei<sup>6</sup>* in Cantonese is used to form a plural pronoun as shown in (54):

- (54) a. ngo<sup>5</sup>-dei<sup>6</sup>  
       I-DEI  
       ‘we/us’
- b. nei<sup>5</sup>-dei<sup>6</sup>  
       you-DEI  
       ‘you (plural)’
- c. keoi<sup>5</sup>-dei<sup>6</sup>  
       s/he-DEI  
       ‘they/them’

As with the collective marker in Cantonese, the collective marker *-n* in Taiwan Southern Min and the collective marker *-den<sup>24</sup>* in Hakka can also be suffixed to a pronoun as indicated in (55) and (56) respectively:

- (55) Taiwan Southern Min
- a. guá-n  
       I-N  
       ‘we/us’

- b. lí -n  
you-N  
'you (plural)'
- c. i-n  
s/he-N  
'they/them'

(56) Hakka

- a. ŋai<sup>55</sup>-den<sup>24</sup>  
I-DEN  
'we/us'
- b. ŋgi<sup>55</sup>-den<sup>24</sup>  
you-DEN  
'you (plural)'
- c. gi<sup>55</sup>-den<sup>24</sup>  
s/he-DEN  
'they/them'

The analysis proposed for Mandarin plural pronouns can be applied to these three languages without any modification given that these languages also show the properties illustrated in (51) and (52).

In addition, the current analysis can also be applied to the derivation of proper names suffixed with *-men* which refer to groups of people with the same characteristics or the same name. Following Longobardi (1994) and Cheng and Sybesma (1999), I assume that proper names in Sinitic languages also start out in the N head given the fact that they can be preceded by a classifier as shown in (57)

below:

Cheng and Sybesma (1999: 538; modified):

(57) a. Guōjing    shuō    tā    kàndào-le    **liǎng**    **ge**    **Húfěi**

Guojing    say    he    see-Asp    two    Cl    Hufei

‘Guojing said that he saw two Hufei’s.’

b. **nà**    **ge**    **Húfěi**    zhēn    bú    xiànghuà

that    Cl    Hufei    truly    not    decent

‘That Hufei is really unreasonable!’

In the formation of proper names suffixed with *-men*, the proper name moves further up to the *n* head because of the [N\*] feature on the *n* head. There is also phrasal movement of *n*P to the Spec of D<sub>def</sub>P via the Spec of SP and the Spec of NumP triggered by the [Spec\*], [Num\*] and [Def\*] features on the functional heads S, Num and D<sub>def</sub> respectively. After the derivation, the interpretable [+Human] and [-Unit] features and the uninterpretable [Pl], [Person] and [+Def] features on the *n* head is then spelt out as *-men*.

As for the derivation of proper names suffixed with *-men* which denote an associative meaning (a group consisting of the person denoted by the proper name and others) and the derivation of common human nouns suffixed with *-men*, the analysis will be presented in Chapter Three, where I argue that all of them involve a merger of plural pronouns to the Spec of D<sub>top</sub>P.

In summary, it has been shown that the four Sinitic languages all have a morpheme to attach to singular personal pronouns to derive the plural forms in order to denote collectivity.

## 2.5 Classifier-Noun

According to Cheng and Sybesma (1999, 2005), the Cl-N sequence in Mandarin and Cantonese cannot simply be taken as the phonological reduction of the *yi/jat*<sup>1</sup> ‘one’-Cl-N sequence, for these two types of sequences have different distributions and interpretations. For instance, as indicated by Cheng and Sybesma, the Cl-N sequence in Mandarin cannot appear in the object position of a bounded predicate<sup>14</sup> as shown in (58a), but the *yi*-Cl-N sequence can as in (58b). In addition, the Cl-N sequence cannot appear in the post-*bǎ* position of the disposal construction as in (59a), whereas the *yi*-Cl-N sequence can as shown in (59b). The nominal phrases in question are in boldface.

Cheng and Sybesma (1999: 525-526; modified):

(58) a. \*wǒ chī-wán-le **kuài bǐnggān**

I eat-finish-Asp Cl cookie

Intended meaning: ‘I finished a cookie.’

b. wǒ chī-wán-le **yí kuài bǐnggān**

I eat-finish-Asp one Cl cookie

‘I finished a cookie.’

(59) a. \*wǒ bǎ **wǎn tāng** hē-wán-le

I BA bowl soup drink-finish-Asp

Intended meaning: ‘I finished a (particular) bowl of soup.’

b. wǒ bǎ **yì wǎn tāng** hē-wán-le

I BA one bowl soup drink-finish-Asp

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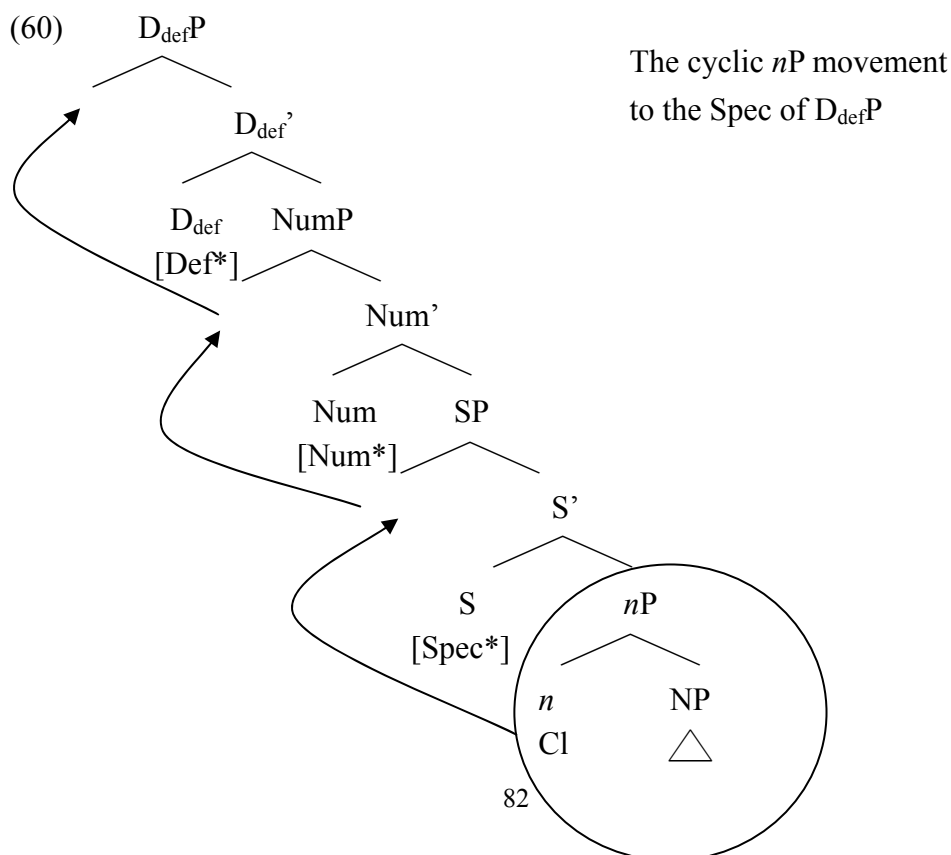
<sup>14</sup> A bounded event presents a situation where its initial and final endpoints are closed.



‘I finished a (particular) bowl of soup.’

In terms of different interpretations, Cheng and Sybesma (1999, 2005) argue that the CI-N sequences in Mandarin are invariably limited to an indefinite non-specific reading, while the *yi*-CI-N sequence can be both specific and non-specific.

As for the derivation of the CI-N sequence in Mandarin, I propose that the classifier lexically realises the *n* head and there is phrasal movement of *n*P to the Spec of  $D_{\text{def}}$ P via the Spec of SP and the Spec of NumP. This movement is the same as the one found in the derivation of bare nouns. The *n* head with the unvalued [Def] feature and the interpretable [+Ref] feature is probed by the  $D_{\text{def}}$  head with the interpretable [Def] feature and the unvalued [Ref] feature. The *n* head gets its uninterpretable and unvalued [Def] feature specified as [-Def] from the  $D_{\text{def}}$  head via the operation Agree. The *n*P then moves to the Spec of  $D_{\text{def}}$ P to satisfy the [Def\*] feature on the  $D_{\text{def}}$  head. This is illustrated in (60) below.



Such an account is entirely compatible with the analysis of bare nouns provided in Section 2.3.

Similarly, the Cl-N sequence in Cantonese cannot simply be taken as the phonological reduction of the *jat*<sup>1</sup>-Cl-N sequence, for these two types of sequences have different interpretations as shown in (61) and (62).

- (61) keoi<sup>5</sup>    maai<sup>6</sup>-zo<sup>2</sup>    **jat**<sup>1</sup>    **gaa**<sup>3</sup>    **ce**<sup>1</sup>  
s/he    sell-Asp    one    Cl    car  
'S/He sold a car'

Cheng and Sybesma (1999: 524; modified):

- (62) keoi<sup>5</sup>    maai<sup>6</sup>-zo<sup>2</sup>    **gaa**<sup>3</sup>    **ce**<sup>1</sup>  
s/he    sell-Asp    Cl    car  
'S/He sold the car.'  
NOT: 'S/He sold a car.'

In addition, the Cl-N sequence in Cantonese can appear in the subject position to express a definite meaning as shown in (39), repeated as (63) below:

Sio (2006: 27; modified):

- (63) **zek**<sup>3</sup> **gau**<sup>2</sup>    jiu<sup>3</sup>    gwo<sup>3</sup>    maa<sup>5</sup>lou<sup>6</sup>  
Cl    dog    want    cross    road  
'The dog wants to cross the road.'

With regard to the derivation of the Cl-N sequence in Cantonese, I assume that the

analysis for Mandarin can also be applied to it. As illustrated in (60), the *n*P moves to the Spec of  $D_{\text{def}}P$  to satisfy the [Def\*] feature on the  $D_{\text{def}}$  head. In addition, the interpretable [Def] feature on the  $D_{\text{def}}$  head can be specified as [+Def] or [-Def], which in turn leads to the definite reading of the Cl-N sequence in (62) and (63) or an indefinite reading of the Cl-N sequence in (64).

- (64) keoi<sup>5</sup>    soeng<sup>2</sup>    maai<sup>5</sup>    **gaa**<sup>3</sup>    **ce**<sup>1</sup>  
       s/he    want    buy    Cl    car  
       ‘S/He wants to buy a car.’

As for the ungrammaticality of the indefinite interpretation of the Cl-N sequence in (62), I propose that it is due to the restriction that in Cantonese a bounded predicate must select a Cl-N sequence with the interpretable [+Def] feature on the  $D_{\text{def}}$  head as its internal argument.<sup>15</sup>

As indicated by C. Chen (1958) and Zhou (1991), Southern Min does not allow Cl-N sequences. The classifier must co-occur with either a numeral or a demonstrative (Cheng and Sybesma 2005). Examples are shown in (65) and (66) below:

Cheng and Sybesma (2005: 268; modified):

- (65) guá siūnn    beh    bé \*(tsit)    pún    tsu  
       I    want    want    buy    one    Cl    book  
       ‘I would like to buy a book.’

- (66) \*(tsit)    tsiah    káu    beh    lim    tsuí

---

<sup>15</sup> Further work needs to be done to see why there is such a restriction in Cantonese.

this Cl dog want drink water

‘This dog wants to drink water.’

Therefore, I propose that in Taiwan Southern Min, when the *n* head is lexically realised by a classifier, the [Num\*] feature on the Num head has to be satisfied either by the insertion of a numeral in its Spec position or by the movement of demonstrative from the Spec of SP to the Spec of NumP.<sup>16</sup>

As far as Hakka is concerned, the Cl-N sequence is also not allowed in the object position of a bounded predicate as shown in (67a), but the *rhit*<sup>2</sup>-Cl-N sequence is allowed as in (67b). On the other hand, the Cl-N sequence cannot appear in the post-*lau*<sup>53</sup> position of the disposal construction as exemplified in (68a), whereas the *rhit*<sup>2</sup>-Cl-N sequence can as shown in (68b).

(67) a. \*ngai<sup>55</sup> shit<sup>2</sup>-tet<sup>5</sup>-le<sup>53</sup> de<sup>11</sup> biang<sup>13</sup>

I eat-finish-Asp Cl cookie

Intended meaning: ‘I finished a cookie.’

b. ngai<sup>55</sup> shit<sup>2</sup>-tet<sup>5</sup>-le<sup>53</sup> rhit<sup>2</sup> de<sup>11</sup> biang<sup>13</sup>

I eat-finish-Asp one Cl cookie

‘I finished a cookie.’

(68) a. \*ngai<sup>55</sup> lau<sup>53</sup> de<sup>11</sup> biang<sup>13</sup> shit<sup>2</sup>-tet<sup>5</sup>-le<sup>53</sup>

I LAU Cl cookie eat-finish-Asp

Intended meaning: ‘I finished a (particular) cookie.’

b. ngai<sup>55</sup> lau<sup>53</sup> rhit<sup>2</sup> de<sup>11</sup> biang<sup>13</sup> shit<sup>2</sup>-tet<sup>5</sup>-le<sup>53</sup>

<sup>16</sup> Further work needs to be done to see how these restrictions are enforced.

I LAU one Cl cookie eat-finish-Asp  
 ‘I finished a (particular) cookie.’

Therefore, the Cl-N sequence should not be treated as the phonological reduction of the *rhit*<sup>2</sup>-Cl-N sequence. Furthermore, in Hakka the Cl-N sequence in the object position can bear a definite reading as in (69) or an indefinite reading as in (70).

Lamarre (p.c.):

(69) *biong*<sup>53</sup> ***tiau***<sup>13</sup> ***tiet*<sup>2</sup>*lien***<sup>11</sup>  
 leave Cl chain  
 ‘Leave the chain.’

Chappell and Lamarre (2005: 60; modified):

(70) *bun*<sup>53</sup> ***khwai***<sup>13</sup> ***men***<sup>11</sup>***bau***<sup>53</sup> *ŋai*<sup>55</sup>  
 give Cl bread me  
 ‘Give me a piece of bread.’

As for the derivation of the Cl-N sequence in Hakka, I suggest that the analysis for Mandarin can be applied to it as well. As shown in (60), the *nP* moves to the Spec of *D*<sub>def</sub>*P* to satisfy the [Def\*] feature on the *D*<sub>def</sub> head. In addition, the interpretable [Def] feature on the *D*<sub>def</sub> head can be specified as [+Def] or [-Def], which accordingly results in the definite interpretation of the Cl-N sequence in (69) and the indefinite interpretation of the Cl-N sequence in (70).

In summary, this section has shown the fact that Taiwan Southern Min crucially differs from Mandarin, Cantonese and Hakka in that it does not have the Cl-N sequence. It is also noted that the Cl-N sequence in Cantonese and Hakka can be used

to express definite or indefinite meaning. The interpretation of the CI-N sequence in the four Sinitic languages is summarised in the following table:

Table 2 Interpretation of the CI-N Sequence in the Four Sinitic Languages

| Interpretation<br>of the CI-N<br>sequence | Definite |        | Indefinite |        |
|-------------------------------------------|----------|--------|------------|--------|
|                                           | Subject  | Object | Subject    | Object |
| Mandarin                                  | X        | X      | X          | √      |
| Cantonese                                 | √        | √      | X          | √      |
| Taiwan<br>Southern<br>Min                 | X        | X      | X          | X      |
| Hakka                                     | X        | √      | X          | √      |

## 2.6 Possessor-Classifier-Noun

Cantonese is different from the other three Sinitic languages discussed in this dissertation in that it allows a possessor DP to precede right next to a CI-N sequence as shown in (71) to (74).

Matthews and Yip (1994: 108; modified):

(71) Cantonese

leih<sup>5</sup> go<sup>3</sup> pahng<sup>5</sup>yauh<sup>5</sup>  
 you Cl friend  
 ‘your friend’

Sio (2006: 68; modified):

(72) Mandarin

\*wǒ běn shū

I      Cl      book

Intended meaning: ‘my book’

Sio (2006: 70; modified):

(73) Taiwan Southern Min

\*guá      pún      tsheh

I      Cl      book

Intended meaning: ‘my book’

Sio (2006: 70; modified):

(74) Hakka

\*ŋai<sup>55</sup>      bun<sup>24</sup>      shu<sup>53</sup>

I      Cl      book

Intended meaning: ‘my book’

As proposed in Section 2.2.2, the possessor DP is analysed as base-generated in the Spec of *nP* given that the *nP*-shell belongs to the  $\theta$ -domain of nominal structure. However, this assumption leads to a question as to whether the possessor DP stays in situ or not. As shown in (75) below, it is found that the possessor DP does not stay in the Spec of *nP*, for a demonstrative can intervene between it and the classifier.

Matthews and Yip (1994: 108; modified):

(75) leih<sup>5</sup>      go<sup>2</sup> go<sup>3</sup> pahng<sup>5</sup>yauh<sup>5</sup>

you      that Cl      friend

‘that friend of yours’

Therefore, I propose that the possessor DP first moves to the Spec of NumP via the Spec of SP to satisfy the uninterpretable [Case\*] feature on the Num head. The uninterpretable and unvalued [Case] feature of the possessor DP is specified as [Genitive] by the uninterpretable [Case] feature on the Num head via the operation Agree. More specifically, the possessor DP with the unvalued [Case] feature and the interpretable [+Possessive] feature is probed by the Num head with a valued [Case] feature and an unvalued [Possessive] feature. After matching, the uninterpretable and unvalued [Possessive] feature on the Num head is specified as [+Possessive] and then gets deleted. At the same time, the Num head assigns the genitive Case to the possessor DP. After the valuation, the uninterpretable [Case] feature of the possessor DP is then deleted. Because of the [Case\*] feature on the Num head, the possessor DP then moves to the Spec of NumP. The possessor DP is further probed by the  $D_{\text{def}}$  head with an uninterpretable [Possessive] feature and the interpretable [Def] feature. The possessor DP moves to the Spec of  $D_{\text{def}}\text{P}$  to satisfy the [Def\*] feature on the  $D_{\text{def}}$  head and values the uninterpretable [Possessive] feature on the  $D_{\text{def}}$  head.

In addition, it is noted that the classifier in (71) can be absent as shown in (76) below. However, the two constructions have different interpretations. When the classifier (i.e.  $go^3$ ) is present as in (71), the possessive construction only bears a singular reading.<sup>17</sup>

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<sup>17</sup> The possessive construction can bear a plural reading when the so-called ‘collective classifier’  $di^l$  is used, as shown in (i) below (Matthews and Yip 1994: 108).

- (i) leih<sup>5</sup> di<sup>1</sup> pahng<sup>5</sup>yauh<sup>5</sup>  
 you DI<sup>1</sup> friend  
 ‘friends of yours’

However, whether the morpheme  $di^l$  is a classifier or a quantifier as I propose for the word  $xi\bar{e}$  in Section 2.9 will be left open for future research.



Matthews and Yip (1994: 108; modified):

(76) leih<sup>5</sup>      pahng<sup>5</sup>yauh<sup>5</sup>

you      friend

Singular reading: ‘a friend of yours’

Plural reading: ‘friends of yours’

I suggest that there is N-to-*n* head movement in the derivation of (76). Furthermore, it should be pointed out that the two possessive constructions in Cantonese have another distinction. The one shown in (71) bears a definite reading, whereas the other shown in (76) bears an indefinite reading. In other words, the interpretable [Def] feature on the  $D_{\text{def}}$  head is specified as [+Def] in (71) and [-Def] in (76). As mentioned in Section 2.3, in Cantonese there is a PF constraint that requires the uninterpretable [+Def] feature on the *n* head to be spelt out by the insertion of classifiers. This constraint leads to the existence of the Possessor-Cl-N sequence in Cantonese, which makes it different from the other three Sinitic languages.

In summary, this section has shown the derivation of the Possessor-Cl-N sequence in Cantonese. Given the fact that a demonstrative can intervene between the possessor DP and the classifier in the Possessor-Dem-Cl-N sequence, it is proposed that the possessor DP does not stay in situ in the base position and it moves to the Spec of  $D_{\text{def}}P$  to satisfy the [Def\*] feature on the  $D_{\text{def}}$  head.

## 2.7 Numeral-Classifier-Noun

According to Li (1998, 1999b), Sinitic nominal expressions containing numerals can be divided into two types, namely the quantity-denoting number expression and the individual-denoting number expression. Examples from Mandarin can be found in (77)

to (79) below. For Li, NumP is the maximal projection of the quantity-denoting number expression, whereas DP is the maximal projection of the individual-denoting number expression. Li argues that the former differs from the latter in that it can occur in the topic and subject positions and it is definite in meaning. However, as indicated by (79), the individual-denoting number expression with an indefinite meaning can appear in the subject position as well.<sup>18</sup>

### Quantity-denoting

- (77) **liǎng zhāng chuáng jǐ wǔ ge rén**  
 two Cl bed squeeze five Cl people  
 ‘Two beds are crowded with five people.’

### Individual-denoting

Li (1999b: 201; modified):

- (78) **yǒu yí ge kèrén lái-le**  
 have one Cl guest come-LE  
 ‘There is one guest coming.’

P. Chen (2004: 1170; modified):

- (79) **yì zhī xiǎo qì é yáo yáo bǎi bǎi zǒu-le shàng-lái**

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<sup>18</sup> Shyu (1995) also points out that an indefinite Numeral-Cl-N sequence can appear in the subject position of a non-root clause as exemplified in (i):

Huang, Li and Li (2009: 321; modified):

- (i) **rúguǒ yì zhī dàxiàng bízi hěn cháng nà yíding hěn kěai**  
 if one Cl elephant nose very long then definitely very lovely  
 ‘If an elephant’s trunk is very long, then it must be lovely.’

one Cl little penguin swaying walk-Asp up-come  
'A little penguin was waddling up.'

Pursuing my proposal that nominal phrases in Sinitic languages always project to DPs in argument positions, I maintain that both the individual-denoting and quantity-denoting number expressions have the  $D_{\text{def}}P$  projection. In addition, as observed by M. Wu (2006), individual-denoting number expressions can occur in the subject position as in (80) and the object position as in (81) and bear the definite meaning as quantity-denoting number expressions do.

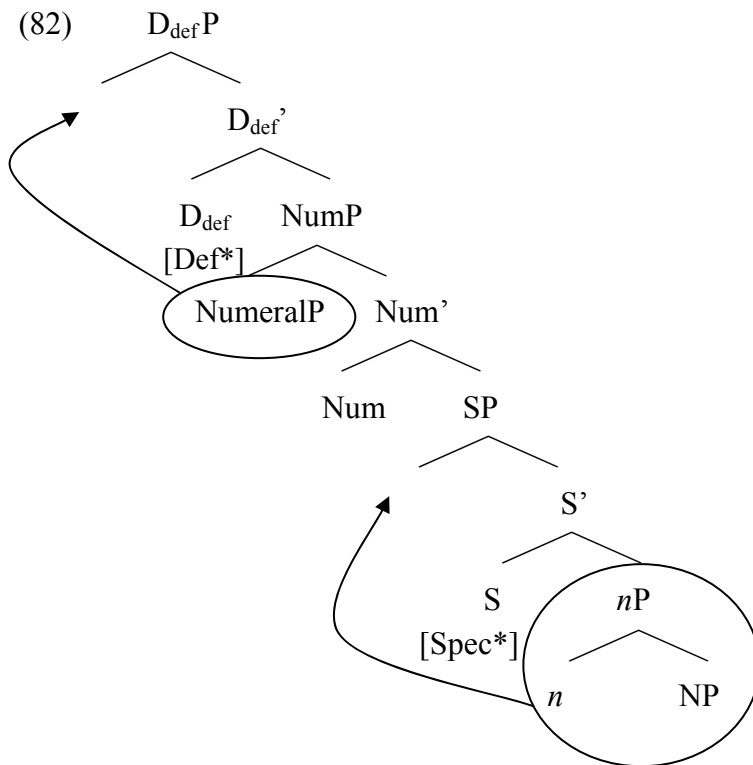
M. Wu (2006: 129; modified):

(80) **sān ge wén guān** xià-de zhí dǎduōsuō  
three Cl rotten official scare-DE keep shiver  
'The three rotten officials were shivering with fear, ....'

M. Wu (2006: 132; modified):

(81) Guō Jìng xiàng Huáng Yàoshī yǔ **liù wèi shīfù** gōngshēn  
Guo Jing towards Huang Yaoshi and six Cl mentor bend-over  
xínglǐ  
bow  
'Guo Jing bowed at Huang Yaoshi and the/his six mentors.'

As a result, I propose that the individual-denoting and quantity-denoting number expressions share the same derivation, which is illustrated in (82) below.



For the quantity-denoting number expression, the head of  $D_{\text{def}}P$  is specified for an interpretable  $[+Def]$  feature, and the NumeralP moves to the Spec of  $D_{\text{def}}P$  to satisfy the  $[Def^*]$  feature on the  $D_{\text{def}}$  head. As for the individual-denoting number expression, the head of  $D_{\text{def}}P$  carries a  $[\pm Def]$  feature ( $[+Def]$  as in (80) to (81) and  $[-Def]$  as in (78) to (79)), and the Spec of  $D_{\text{def}}P$  is filled by the movement of NumeralP as the quantity-denoting number expression.

The distinction between the quantity-denoting and the individual-denoting number expressions can also be found in the other three Sinitic languages.

(83) Cantonese

**Quantity-denoting**

a. **loeng<sup>5</sup> zoeng<sup>1</sup> cong<sup>4</sup> fan<sup>3</sup> ng<sup>5</sup> go<sup>3</sup> jan<sup>4</sup>**  
 two Cl bed sleep five Cl person

‘Two beds are crowded with five people.’

### Individual-denoting

b. **saam<sup>3</sup> go<sup>3</sup> taam<sup>1</sup> gun<sup>1</sup> haak<sup>3</sup>-dou<sup>3</sup> daa<sup>2</sup>saai<sup>3</sup> laang<sup>5</sup>zan<sup>3</sup>**

three Cl rotten official scare-DOU keep shiver

‘The three rotten officials were shivering with fear, ....’

c. **Gwok<sup>3</sup> Zing<sup>6</sup> hoeng<sup>3</sup> luk<sup>6</sup> wai<sup>2</sup> si<sup>1</sup>fu<sup>2</sup> haang<sup>4</sup>lai<sup>5</sup>**

Gwok Zing toward six Cl mentor bow

Gwok Zing bowed at the/his six mentors.’

d. **jat<sup>1</sup> zek<sup>3</sup> aap<sup>3</sup>zai<sup>2</sup> jiu<sup>4</sup>jiu<sup>4</sup>baai<sup>2</sup>baai<sup>2</sup> hang<sup>4</sup> gan<sup>2</sup> soeng<sup>5</sup>lai<sup>4</sup>**

one Cl duckling swaying walk so come-up

‘A duckling was waddling up.’

(84) Taiwan Southern Min

### Quantity-denoting

a. **nāng tiunn bîn-tshûg kheh gōo ê lâng**

two Cl bed squeeze five Cl person

‘Two beds are crowded with five people.’

### Individual-denoting

b. **sann ê tham kuann kiann-kā phih-phih-tshuah**

one Cl rotten official scare-KA shiver

‘The three rotten officials were shivering with fear, ....’

c. **Iâ-soo tshut-hiān tit tsáp-jī ê mûg-tô bîn-tsîng**

Jesus appear in twelve Cl disciple in the face of

‘Jesus appeared in front of his twelve disciples.’

d. **tsit tsiah ah-á iô-lâi-iô-khì kiânn kuè-lâi**

one Cl duck swaying walk come over

‘A duck was waddling nearby.’

(85) Hakka

**Quantity-denoting**

a. **liong**<sup>13</sup>    **zong**<sup>13</sup>    **min**<sup>55</sup> **cong**<sup>55</sup>    ziam<sup>53</sup>    **ng**<sup>13</sup>    **sa**<sup>55</sup> **ngin**<sup>55</sup>  
two            Cl            bed            squeeze    five            Cl    person

‘Two beds are crowded with five people.’

**Individual-denoting**

b. **sam**<sup>53</sup> **gai**<sup>11</sup> **tam**<sup>53</sup>    **gon**<sup>53</sup>    hag<sup>5</sup>-do<sup>24</sup>    gin<sup>24</sup>    chad<sup>5</sup>

three    Cl    rotten official    scare-DO    keep    shiver

‘The three rotten officials were shivering with fear, ....’

c. Rha<sup>53</sup> su<sup>53</sup>    chut<sup>53</sup> hien<sup>11</sup>    cai<sup>11</sup>    **ship**<sup>53</sup> **ngi**<sup>11</sup> **ge**<sup>11</sup>    **mun**<sup>55</sup> **tu**<sup>55</sup>    mien<sup>11</sup>    cien<sup>55</sup>

Jesus            appear    in    twelve    Cl            disciple    in the face of

‘Jesus appeared in front of his twelve disciples.’

d. **rhit**<sup>5</sup> **zhak**<sup>5</sup> **ap**<sup>5</sup> **er**<sup>55</sup>    rhau<sup>55</sup> rhau<sup>55</sup> bai<sup>24</sup> bai<sup>24</sup>    hang<sup>55</sup>    shong<sup>53</sup>    loi<sup>55</sup>

one    Cl    duck            swaying            walk    up    come

‘A duck was waddling up.’

Cheng and Sybesma’s (1999, 2005) and Sio’s (2006, 2008) analyses of Sinitic nominal expressions, where the NumeralP is assumed to be inherently indefinite, can be falsified by the existence of definite individual-denoting number expressions, such as (80) and (81) in Mandarin, (83b) and (83c) in Cantonese, (84b) and (84c) in Taiwan Southern Min, and (85b) and (85c) in Hakka.

Even though the individual-denoting and quantity-denoting number expressions share the same surface form and show the same distributions, an individual-denoting number expression differs from a quantity-denoting number expression in that it can be the antecedent or binder of a reflexive as shown in (86).

Huang, Li and Li (2009: 291; modified):

(86) a. Zhāngsān<sub>i</sub> zhīdào [sān ge rén]<sub>j</sub> yídìng bān  
Zhangsan know three Cl person certainly move  
bú dòng zìjǐ<sub>i/\*j</sub> de gāngqín  
not move self DE piano  
'Zhangsan knows that three people certainly cannot move self's  
piano.'

b. Zhāngsān<sub>i</sub> jiào [sān ge rén]<sub>j</sub> huíqù bǎ zìjǐ<sub>i/j</sub> de  
Zhangsan ask three Cl person return BA self DE  
gāngqín bān lái  
piano move over  
'Zhangsan asked three people to go and move self's piano over.'

As can be seen from above, the quantity-denoting number expression *sān ge rén* 'three people' in (86a) cannot bind the reflexive *zìjǐ* 'self', whereas the individual-denoting number expression *sān ge rén* 'three people' in (86b) can serve as a binder of the reflexive *zìjǐ* 'self'. Furthermore, a quantity-denoting number expression behaves differently from an individual-denoting number expression in that it cannot have scope interaction with another quantity-denoting expression as shown in (87).

Huang, Li and Li (2009: 291; modified):

(87) **Quantity-denoting**

a. sān ge rén wǒ zhīdào chī-de-wán wǔ wǎn fàn  
three Cl person I know eat-can-finish five Cl rice

‘Three people, I know can finish five bowls of rice.’

**Individual-denoting**

b. wǒ      ràng      sān      ge      rén      chī      wǔ      wǎn      fàn

I      let      three      Cl      person      eat      five      Cl      rice

‘I let three people eat five bowls of rice.’

Example (87a) has only one interpretation: the total amount of rice consumed by three people is five bowls. In contrast, (87b) can have the fifteen-bowl reading. That is, the individual-denoting number expression *sān ge rén* ‘three people’ has scope over the nominal expression *wǔ wǎn fàn* ‘five bowls of rice’. To capture their differences in reflexive co-reference and scope interaction, the individual-denoting and quantity-denoting number expressions should have different structural representations. This line of argument will be pursued in Chapter Three, where I argue that the NumeralP in quantity-denoting number expressions ends up in the Spec of  $D_{\text{foc}}\text{P}$ .

In summary, this section has revealed that the four Sinitic languages all make a distinction between individual-denoting and quantity-denoting number expressions. In addition, it has been shown that both the individual-denoting and quantity-denoting expressions are DPs and they can be used to express various meanings, including a definite meaning. In other words, the Numeral-Cl-N sequence in the four Sinitic languages can take three kinds of interpretations: definite, indefinite and a pure quantity reading. That is to say, there are really no definiteness restrictions at all. The interpretation of the Numeral-Cl-N sequence in the four Sinitic languages is summarised in Table 3:



Table 3 Interpretation of the Numeral-CI-N Sequence in the Four Sinitic Languages

| Interpretation<br>of the<br>Numeral-CI-N<br>Sequence | Individual-denoting |            |          |            | Quantity-denoting |        |
|------------------------------------------------------|---------------------|------------|----------|------------|-------------------|--------|
|                                                      | Subject             |            | Object   |            | Subject           | Object |
|                                                      | Definite            | Indefinite | Definite | Indefinite |                   |        |
| Mandarin                                             | √                   | √          | √        | √          | √                 | √      |
| Cantonese                                            | √                   | √          | √        | √          | √                 | √      |
| Taiwan<br>Southern Min                               | √                   | √          | √        | √          | √                 | √      |
| Hakka                                                | √                   | √          | √        | √          | √                 | √      |

## 2.8 Classifier-Classifier-Noun and ‘one’-Classifier-Classifier-Noun

In Mandarin reduplication of classifiers can be used to express the meanings ‘all’ or ‘every’; however, S.-F. Yang (2005) claims that when the CI-CI-N sequence is used the word *dōu* ‘all’ is required to appear in the same clause as illustrated in (88).

(88) **gè gè háizi** dōu hěn cōngmíng

Cl Cl child DOU very smart

‘Every child is very smart’

Yet this is not always the case. As shown in (89) below, the CI-CI-N sequence can appear in a sentence without the word *dōu* ‘all’.

(89) a. **duǒ duǒ xiǎo huā** shèng kāi zài cǎoyuán shàng

Cl Cl little flower thriftily bloom on prairie up

‘All the little flowers bloom thriftily in the prairie.’

b. **duǒ duǒ lànghuā** dǎ zài yánshí shàng

Cl Cl spindrift hit on rock up

‘Sprindrift hit the rocks.’

S.-F. Yang (2005) does not offer an analysis for this Cl-Cl-N structure and leaves it for future research. In contrast, I propose that the Cl-Cl-N sequence does not derive from the same syntactic structure as the *yī*-Cl-Cl-N sequence, since they have different distributions. It is similar to the distinction between the Cl-N sequence and the Numeral-Cl-N sequence in that the Cl-Cl-N sequence in Mandarin cannot appear in the object position of a bounded predicate as shown in (90a), but the *yī*-Cl-Cl-N sequence can appear as in (90b). In addition, the Cl-Cl-N sequence cannot appear in the post-*bǎ* position of the disposal construction as in (91a), whereas the *yī*-Cl-Cl-N sequence can as shown in (91b).<sup>19</sup>

(90) a. \*wǒ chī-wán-le duǒ duǒ bái jùn  
I eat-finish-Asp Cl Cl white mushroom

Intended meaning: ‘I finished every white mushroom.’

b. wǒ chī-wán-le yí duǒ duǒ bái jùn  
I eat-finish-Asp one Cl Cl white mushroom

‘I finished every white mushroom.’

(91) a. \*wǒ bǎ duǒ duǒ bái jùn chī-wán-le  
I BA Cl Cl white mushroom eat-finish-Asp

Intended meaning: ‘I finished every white mushroom.’

b. wǒ bǎ yí duǒ duǒ bái jùn chī-wán-le  
I BA one Cl Cl white mushroom eat-finish-Asp

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<sup>19</sup> According to Yuan (p.c.), (91a) would be ok if *dōu* is added before the verb *chī* and (91b) is out since *dōu* does not show up before the verb *chī*. This may be a dialectal difference.

‘I finished every white mushroom.’

S.-F. Yang (2005) proposes that in the  $y\bar{i}$ -Cl-Cl-N sequence there is a strong [Num] feature with a plural value and an emphasis on the individuals in the domain. She (2005: 87) argues that ‘the number of individuals has to be greater than a contextually salient large amount’. She further claims that this strong [Num] feature triggers the Cl head to move to the Num head and it is spelt out as the reduplicated classifier. In addition, she suggests that in contrast to the [Num] feature just with a plural value this [Num] feature is marked with specificity. However, given that my proposed nominal structure in (1) has an extra SP layer in contrast to S.-F. Yang’s, I suggest that the [Spec\*] feature in the S head is specified as [+Spec] and causes the  $n$  head to move to the S head to satisfy the [Spec\*] feature on the S head. After the derivation of the entire DP, the S head is then spelt out in the form of a reduplicated classifier. More precisely, the reduplicated classifiers are the multiple spell-outs of the S head and the  $n$  head. I suggest that this is the case for both the  $y\bar{i}$ -Cl-Cl-N sequence and the Cl-Cl-N sequence. However, in their derivations, the Cl-Cl-N sequence is different from the  $y\bar{i}$ -Cl-Cl-N sequence in that the [Num\*] feature of the Cl-Cl-N sequence is satisfied by the movement of SP to the Spec of NumP rather than by the merger of NumeralP as in the  $y\bar{i}$ -Cl-Cl-N sequence.

Moreover, since only the numeral  $y\bar{i}$  ‘one’ is allowed to precede the Cl-Cl-N sequence as shown in (92), I reject S.-F. Yang’s (2005) proposal that the [Num] feature in the  $y\bar{i}$ -Cl-Cl-N sequence has a plural value.

(92) S.-F. Yang (2005: 86; modified):

|    |     |       |       |       |
|----|-----|-------|-------|-------|
| a. | yì  | zhāng | zhāng | zhǐ   |
|    | one | Cl    | Cl    | paper |

100

‘the individual pieces of paper’

S.-F. Yang (2005: 89; modified):

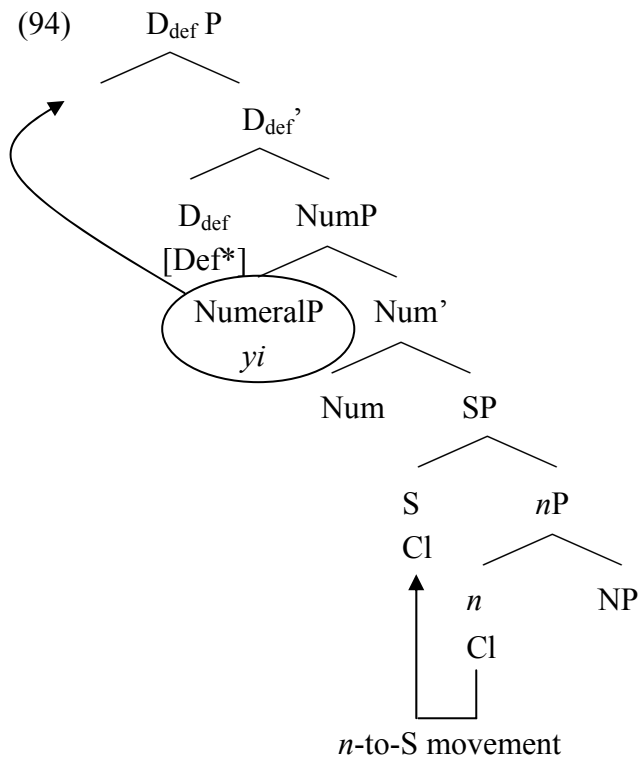
- b. \*sān    zhāng    zhāng    zhǐ  
three    Cl            Cl            paper

Intended meaning: ‘every three-piece of paper’

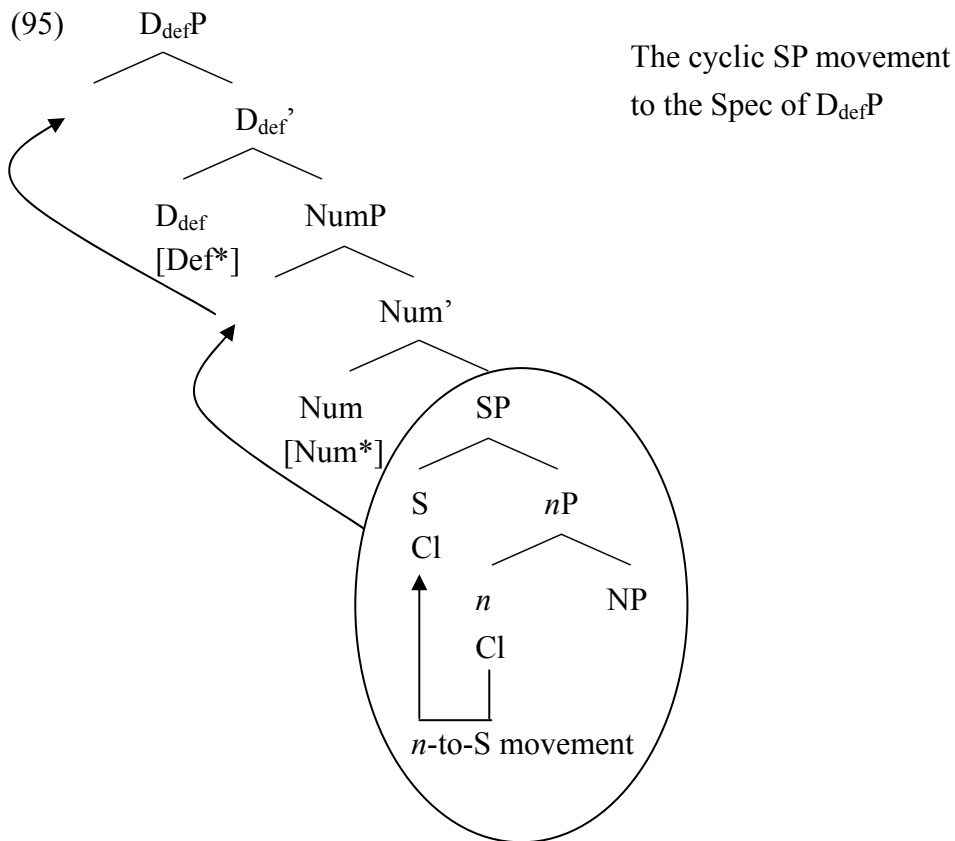
Instead, following Gil’s (1995) observation that distributive universal quantification requires singularities as in (93), I propose that the [Num] feature in the  $y\bar{i}$ -Cl-Cl-N sequence has a singular value.

- (93) a. every book  
      b. \*every books

Furthermore, since I propose that nominal phrases in argument positions always project to DPs, I maintain that both the Cl-Cl-N sequence and the  $y\bar{i}$ -Cl-Cl-N sequence have the  $D_{\text{def}}P$  projection. As for the derivation of the  $y\bar{i}$ -Cl-Cl-N sequence, I assume that the head of  $D_{\text{def}}P$  carries a [Def\*] feature and the Spec of  $D_{\text{def}}P$  is filled by the movement of NumeralP to satisfy this [Def\*] feature. The uninterpretable [Num] feature on the  $D_{\text{def}}$  head is valued as [Sg] and then deleted by the interpretable [Num] feature on the Num head via the operation Agree. Through the same operation, the uninterpretable [Def] feature on the Num head is valued as [+Def] by the  $D_{\text{def}}$  head. This derivation is illustrated in (94), where the reduplicated classifiers are the multiple spell-outs of the S head and the  $n$  head.



In contrast, the Cl-Cl-N sequence differs from the  $y\bar{i}$ -Cl-Cl-N sequence in that the  $[\text{Def}^*]$  feature of the  $D_{\text{def}}$  head in the Cl-Cl-N sequence is satisfied by the movement of SP to the Spec of  $D_{\text{def}}P$  (via the Spec of NumP) rather than by the movement of NumeralP as in the  $y\bar{i}$ -Cl-Cl-N sequence. The derivation of the Cl-Cl-N sequence is illustrated in (95).



In Cantonese and Hakka, reduplication of classifiers can be used to express the meanings ‘all’ or ‘every’ as well. Examples can be found in (96) and (97) below:

Cantonese

(96) Yip and Matthews (2000b: 48; modified):

a. (jat<sup>1</sup>) go<sup>3</sup> go<sup>3</sup> nei<sup>5</sup>hoi<sup>4</sup> dou<sup>1</sup> zung<sup>3</sup>ji<sup>3</sup> keoi<sup>5</sup>  
 one Cl Cl girl DOU like him  
 ‘All the girls like him.’

b. keoi<sup>5</sup> (jat<sup>1</sup>) bun<sup>2</sup> bun<sup>2</sup> syu<sup>1</sup> dou<sup>1</sup> duk<sup>6</sup>-gwo<sup>3</sup>  
 S/He one Cl Cl book DOU read-Asp  
 ‘S/He’s read every book.’

Sio (2006: 25):

c. tiu<sup>4</sup> tiu<sup>4</sup> daai<sup>6</sup> lou<sup>6</sup> tung<sup>1</sup> lo<sup>4</sup>ma<sup>5</sup>

Cl Cl big road connect Rome

‘All roads lead to Rome.’

Hakka

(97) *ngai*<sup>55</sup> *gau*<sup>55</sup> *gai*<sup>11</sup> (***rhit***<sup>5</sup>) ***gai***<sup>11</sup> ***gai***<sup>11</sup> ***hok***<sup>2</sup>***sang***<sup>53</sup> *du*<sup>33</sup> *cin*<sup>33</sup> *guai*<sup>53</sup>

I teach GAI (one) Cl Cl student DU really docile

‘All the students I taught are really well-behaved.’

As in Mandarin Chinese, the Cl-Cl-N sequence in Cantonese and Hakka does not derive from the same syntactic structure of the ‘one’-Cl-Cl-N sequence, since the two sequences have different distributions. In Hakka, the distinction between the Cl-Cl-N sequence and the *rhit*<sup>5</sup>-Cl-Cl-N sequence is similar to the distinction between the Cl-N sequence and the Numeral-Cl-N sequence in that the Cl-Cl-N sequence cannot appear in the object position of a bounded predicate as shown in (98a), but the *rhit*<sup>5</sup>-Cl-Cl-N sequence can as in (98b). In addition, the Cl-Cl-N sequence cannot appear in the post-*lau*<sup>53</sup> position of the disposal construction as in (99a), whereas the *rhit*<sup>5</sup>-Cl-Cl-N sequence can as shown in (99b).

(98) a. \**nga*<sup>55</sup> *shit*<sup>2</sup>-*tet*<sup>5</sup>-*le*<sup>53</sup> ***pan***<sup>55</sup> ***pan***<sup>55</sup> ***coi***<sup>11</sup>

I eat-finish-Asp Cl Cl dish

Intended meaning: ‘I finished every dish.’

b. *nga*<sup>55</sup> *shit*<sup>2</sup>-*tet*<sup>5</sup>-*le*<sup>53</sup> ***rhit***<sup>5</sup> ***pan***<sup>55</sup> ***pan***<sup>55</sup> ***coi***<sup>11</sup>

I eat-finish-Asp one Cl Cl dish

‘I finished every dish.’

(99) a. \**nga*<sup>55</sup> *lau*<sup>53</sup> ***pan***<sup>55</sup> ***pan***<sup>55</sup> ***coi***<sup>11</sup> *shit*<sup>2</sup>-*tet*<sup>5</sup>-*le*<sup>53</sup>

I LAU Cl Cl dish eat-finish-Asp

Intended meaning: 'I finished every dish.'

b. nga<sup>55</sup> lau<sup>53</sup> **rh**it<sup>5</sup> **pan**<sup>55</sup> **pan**<sup>55</sup> **coi**<sup>11</sup> shit<sup>2</sup>-tet<sup>5</sup>-le<sup>53</sup>

I LAU one Cl Cl dish eat-finish-Asp

'I finished every dish.'

In Cantonese, the Cl-Cl-N sequence can function as a topic as exemplified in (100a), whereas the *yat*<sup>6</sup>-Cl-Cl-N sequence cannot as shown in (100b).<sup>20</sup> In addition, the Cl-Cl-N sequence can appear in the post-*zoeng*<sup>1</sup> position of the disposal construction as in (101a), whereas the *yat*<sup>6</sup>-Cl-Cl-N sequence cannot as shown in (101b).

(100) a. **dip**<sup>6</sup> **dip**<sup>6</sup> **sung**<sup>3</sup> ngo<sup>5</sup> dou<sup>1</sup> sik<sup>6</sup>-jyun<sup>4</sup>

Cl Cl dish I DOU eat-finish

'I finished every dish.'

b. \***jat**<sup>1</sup> **dip**<sup>6</sup> **dip**<sup>6</sup> **sung**<sup>3</sup> ngo<sup>5</sup> dou<sup>1</sup> sik<sup>6</sup>-jyun<sup>4</sup>

one Cl Cl dish I DOU eat-finish

'I finished every dish.'

(101) a. ngo<sup>5</sup> zoeng<sup>1</sup> **gin**<sup>6</sup> **gin**<sup>6</sup> **saam**<sup>1</sup> dou<sup>1</sup> si<sup>3</sup>-jyun<sup>4</sup> laa<sup>3</sup>

I ZOENG Cl Cl dish DOU eat-finish SFP

'I tried every clothes.'

b. \*ngo<sup>5</sup> zoeng<sup>1</sup> **jat**<sup>1</sup> **gin**<sup>6</sup> **gin**<sup>6</sup> **saam**<sup>3</sup> dou<sup>1</sup> si<sup>3</sup>-jyun<sup>4</sup> laa<sup>3</sup>

I ZOENG one Cl Cl dish DOU eat-finish SFP

Intended meaning: 'I finished every dish.'

<sup>20</sup> According to Yuan (p.c.), the contrast of grammaticality shown here may be due to the fact that the Cl-Cl-N sequence is definite and therefore can be a topic whereas 'one'-Cl-Cl-N sequence is not.



As far as Taiwan Southern Min is concerned, similar to the the CI-N sequence, the CI-CI-N sequence is ruled out due to the restriction that the [Num\*] feature on the Num head has to be satisfied either by the insertion of numerals or by the movement of demonstrative when the *n* head is lexically realised by a classifier. However, for an unknown reason, the ‘one’-CI-CI-N sequence is rarely used in Taiwan Southern Min. Further investigation is needed.

In summary, it has been shown that the reduplication of classifiers in Mandarin, Cantonese and Hakka can be used to express the meanings ‘all’ or ‘every’. Moreover, it is pointed out that the CI-CI-N sequence does not result from the omission or non-spellout of the numeral ‘one’ in the ‘one’-CI-CI-N sequence since the two constructions have different syntactic distributions. More specifically, in Mandarin and Hakka the CI-CI-N sequence cannot appear in the object position of a bounded predicate, but the ‘one’-CI-CI-N sequence can. In addition, the ‘one’-CI-CI-N sequence in Mandarin and Hakka can show up in the post-*bǎ/lau*<sup>53</sup> position of the disposal construction, whereas the CI-CI-N sequence cannot. In contrast, the ‘one’-CI-CI-N sequence in Cantonese cannot appear in the post-*zoeng*<sup>l</sup> position of the disposal construction, whereas the CI-CI-N sequence can. Furthermore, the CI-CI-N sequence in Cantonese can appear in the sentence-initial topic position, whereas the ‘one’-CI-CI-N sequence cannot.

## 2.9 Nominal with *Xiē*

In Mandarin Chinese, another way of expressing plurality is via the use of the morpheme *xiē*. As indicated by S.-F. Yang (2005), in the literature the word *xiē* is analysed in two ways. In one analysis, it is considered as a plural classifier (e.g., Norman 1988; Li and Thompson 1989; Cheng and Sybesma 1999; Li 1999a; Li and

Shi 2003; M.-L. Hsieh 2008); in the other, it is treated as a lexical realisation of the Num head (e.g., Ijic 1994, 2001). Given the co-occurrence of *xiē* with the general classifier *ge* within the same nominal phrase as in (102) and the non-occurrence of *xiē* with numerals other than *yī* ‘one’ as in (103), S.-F. Yang (2005) argues that *xiē* should be taken as a morpheme that instantiates the [PI] feature of the Num head.

Li and Shi (2003: 23; modified):

(102) zhè xiē ge xuéshēng  
this XIE Cl student  
‘these students’

S.-F. Yang (2005: 72; modified):

(103) a. yī xiē zhǐ  
one XIE paper  
‘some paper’  
b. \*liǎng xiē zhǐ  
two XIE paper

The grammaticality of (102) suggests that the morpheme *xiē* and the general classifier *ge* does not compete for the same position. Moreover, the distinction between (109a) and (109b) indicates that the sequence *yī xiē* should not be treated as the composite of a singular numeral and a plural classifier.

In contrast to the two aforementioned proposals, I suggest that the word *xiē* should be analysed as a phrasal element that occupies the Spec of NumP rather than a

morpheme that lexically realises a functional head.<sup>21</sup> There are two pieces of evidence that can support the claim that *xiē* is syntactically phrasal in nature. First of all, the word *xiē* can appear independently as the object of a sentence as shown in (104).

- (104) gěi      tā      xiē  
          give    s/he    XIE  
          ‘Give him/her some.’

This further supports the fact that unlike classifiers the word *xiē* does not occupy the head of an extended projection of N. Secondly, as shown in (105), the word *xiē* can be modified as a numeral or a quantifier.

Iljic (1994: 102; modified):

- (105) hǎo      xiē      (ge)      rén  
          quite    XIE      Cl      person  
          ‘a fair number of people’

As a result, I treat the word *xiē* as a quantifier similar to the word *some* in English, both of which express an indeterminate quantity.<sup>22</sup> Given this assumption, the co-occurrence of *xiē* and the general classifier *ge* within the same nominal phrase will not be a surprise. In fact, being a quantifier, *xiē* is not restricted to only occur with the general classifier *ge*. As reported by Iljic (1994), some speakers of Mandarin dialects

<sup>21</sup> C.-C. Tang (2007) suggests that *yī xiē* altogether should be treated as a unitary quantifier phrase marked with the [Num: Plural] feature and situated in the Spec of NumP.

<sup>22</sup> However, *xiē* is different from *some* in that *xiē*-NP cannot appear in a preverbal position as *some*-NP does.

in Beijing accept the use of *xiē* with other classifiers as shown in (106).<sup>23</sup>

Iljic (1994: 102; modified):

- (106) a. hǎo xiē běn shū  
quite XIE Cl book  
'quite a few books'
- b. hǎo xiē jiàn yīfú  
quite XIE Cl clothes  
'quite a few clothes'

We saw above that *xiē* does not co-occur with numerals greater than one, as illustrated in (103b). I propose that this is due to the incompatibility of indeterminate quantity expressions and numerals. However, the reason why the word *xiē* can co-occur with the numeral *yī* 'one' is not clear. I suspect that it is similar to the co-occurrence of the indefinite article *a* and the quantifier *few* in English to express an indeterminate quantity as in (107). I will leave this open for future research.

(107) **a few** books

Since I analyse *xiē* as a quantifier base-generated in the Spec of NumP, the nominal phrase quantified by *yī xiē* 'some' should behave like the Numeral-Cl-N sequence discussed in Section 2.7. As shown in (109), the sequence in question can also bear a definite reading as the Numeral-Cl-N sequence does in (108).

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<sup>23</sup> However, in Taiwan Mandarin, the word *xiē* is restricted to combine with the general classifier *ge*.

- (108) tā dào de shíhòu sān ge xuéshēng dōu hái zài  
 he arrive DE time three Cl student DOU still in  
 ‘The three students were still there when he arrived.’

M.-L. Hsieh (2008: 86; modified):

- (109) tā dào de shíhòu yì xiē xuéshēng dōu hái zài  
 he arrive DE time one XIE student DOU still in  
 ‘Some of the students were still there when he arrived.’

In summary, it is demonstrated that the treatment of *xiē* as a plural classifier or a functional element realizing the Num head is not heading in the right direction given the fact that *xiē* is syntactically phrasal in nature. Instead, it is proposed that the word *xiē* should be treated as a quantifier base-generated at the Spec of NumP. It is used to express an indeterminate quantity as does the word *some* in English.

## 2.10 Possessor-Numeral-Classifier-Noun

This section investigates the derivation of the Possessor-Numeral-Cl-N sequence in the four Sinitic languages. As indicated in Section 2.2.2 and Section 2.6, based on the assumption that the *n*P-shell belongs to the  $\theta$ -domain of nominal structure, the possessor DP is assumed to be base-generated in the Spec of *n*P and to move to the Spec of D<sub>def</sub>P (via the Spec of SP and the Spec of NumP) to satisfy the [Def\*] feature on the head of D<sub>def</sub>P. Since the [Def\*] feature on the D<sub>def</sub> head can also be satisfied by the movement of NumeralP as indicated in Section 2.7, one may wonder how the surface Possessor-Numeral-Cl-N order, as exemplified in (110) to (113), is derived in the four Sinitic languages.

(110) Mandarin

wǒ sān zhī bǐ  
my three Cl pen  
'three pens of mine'  
'my three pens'

(111) Cantonese

nei<sup>5</sup> loeng<sup>5</sup> go<sup>3</sup> pang<sup>4</sup>jau<sup>5</sup>  
you two Cl friend  
'two friends of yours'  
'your two friends'

(112) Taiwan Southern Min

guá n̄ng pún tsu  
my two Cl book  
'two books of mine'  
'my two books'

(113) Hakka

gi<sup>55</sup> liong<sup>13</sup> zong<sup>13</sup> biang<sup>13</sup>  
his two Cl cookie  
'two cookies of his'  
'his two cookies'

I propose that the possessor DP first moves to the Spec of NumP (via the Spec of SP) to satisfy the uninterpretable [Case\*] feature on the Num head. The

uninterpretable and unvalued [Case] feature of the possessor DP is specified as [Genitive] by the uninterpretable [Case\*] feature on the Num head via the operation Agree. More specifically, the possessor DP with the unvalued [Case] feature and the interpretable [+Possessive] feature is probed by the Num head with the valued [Case] feature and the unvalued [Possessive] feature. After matching, the uninterpretable and unvalued [Possessive] feature of the Num head is specified as [+Possessive] and then deleted. At the same time, the Num head assigns the genitive Case to the possessor DP. After the valuation, the uninterpretable [Case] feature of the possessor DP is then deleted. Because of the [Case\*] feature on the Num head, the possessor DP then moves to the higher Spec of NumP.

The possessor DP is further probed by the  $D_{\text{def}}$  head with an uninterpretable [Possessive] feature and the interpretable [Def] feature. The possessor DP moves to the Spec of  $D_{\text{def}}\text{P}$  because of the [Def\*] feature on the  $D_{\text{def}}$  head. It also values and deletes the uninterpretable [Possessive] feature on the  $D_{\text{def}}$  head.

Furthermore, it should be pointed out that unlike the English possessive constructions, the Sinitic phrases in (110) to (113) can be either definite or indefinite in meaning. In other words, the interpretable [Def] feature on the  $D_{\text{def}}$  head in (110) to (113) can be specified as [+Def] or [-Def].

In summary, it has been shown that in the four Sinitic languages the [Def\*] feature on the  $D_{\text{def}}$  head in the Possessor-Numeral-CI-N sequence is satisfied by the movement of the possessor DP. In contrast to the Possessor-Numeral-N sequence in English (i.e. *my two books*), the Possessor-Numeral-CI-N sequence in Sinitic languages can be interpreted as definite or indefinite.

## **2.11 Demonstrative-Numeral-Classifier-Noun**

This section investigates the derivation of sequences containing demonstratives

but not possessor DPs in the four Sinitic languages. According to Sio (2006), the demonstratives in Sinitic languages are base-generated in the Spec of CIP<sup>24</sup> and move to the Spec of SP to check the [Spec] feature. However, as indicated in Section 2.2.3, the demonstrative does not stand in any thematic relationship with the classifier. Therefore, given the assumption that the *n*P is purely the  $\theta$ -domain of nominal expressions, I propose that the Spec of SP is the place where the DemP is base-generated. Such a proposal is also semantically motivated since demonstratives give rise to specific interpretations of nominal phrases. My proposal is different from Sio's analysis in two main aspects. First of all, in contrast to Sio's assumption that SP is only projected in specific nominal phrases, I assume that the SP layer is available in both specific and non-specific nominal expressions. In other words, the interpretable [Spec] feature on the S head can enter the derivation specified as either [+Spec] or [-Spec]. Secondly, as shown in (1), I maintain that the SP is located in between the NumP and the *n*P. This is different from Sio's proposal that the SP is on top of the CIP or the NumeralP if NumeralP is present. These two basic assumptions make my analysis a more unified account of nominal structure than Sio's, since only one underlying structure is needed for both specific and non-specific nominal expressions.

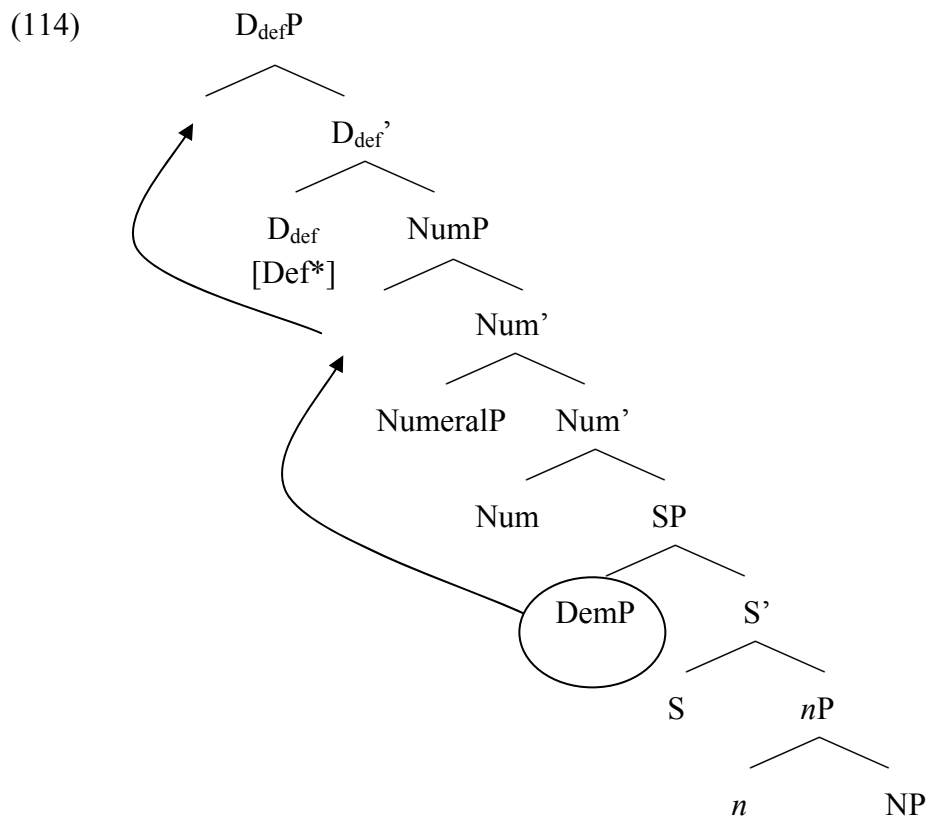
Let us now consider the surface Dem-Numeral-CI-N word order in the four Sinitic languages. I propose that this order involves the movement of DemP from the Spec of SP to the Spec of D<sub>def</sub>P via the Spec of NumP. This movement is triggered by the [Def\*] feature with the match and deletion of an uninterpretable [Deictic] feature carried by the head of D<sub>def</sub>P. More specifically, I propose that the Dem head is specified for the interpretable [Deictic] feature (i.e. [Proximal] or [Distal]) and this feature

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<sup>24</sup> Sio (2006) assumes that in Sinitic languages the CIP and the lower referential layer (henceforth LoReP), which encodes the definiteness in her account, are fused into one whereas in Zhuang and Miao there are two separate projections for the CIP and the LoReP. She proposes that the LoReP in Zhuang is headed by demonstratives and the numeral 'one' which indicates indefiniteness.



values and deletes the uninterpretable [Deictic] feature on the head of  $D_{\text{def}}P$  via the operation Agree. In turn, the interpretable [Def\*] feature on the head of  $D_{\text{def}}P$  matches and deletes the uninterpretable [Def] feature carried by the Dem head. The DemP then moves to the Spec of  $D_{\text{def}}P$  to satisfy the [Def\*] feature on the  $D_{\text{def}}$  head. This is illustrated in (114) below:



Consider next the Dem-Cl-N sequence in the four Sinitic languages. I propose that this order shares the same syntactic structure as the Dem-Numeral-Cl-N sequence, given that they do not have different distributions. The difference between the two structures is whether the NumeralP is overtly realised or not. That is to say, I propose that there is a null numeral ‘one’ occupying the Spec of NumP in the Dem-Cl-N sequence, for the interpretation of the Dem-Cl-N sequence is always singular. The DemP in this sequence undergoes the same syntactic operations as the DemP in the

Dem-Numeral-Cl-N sequence. For instance, in terms of Agree, the interpretable [Deictic] feature on the head of DemP values and deletes the uninterpretable [Deictic] feature on the head of  $D_{\text{def}}\text{P}$ . Simultaneously, the interpretable [Def\*] feature on the head of  $D_{\text{def}}\text{P}$  values and deletes the uninterpretable [Def] feature on the head of DemP. In terms of movement, the [Def\*] feature on the  $D_{\text{def}}$  head triggers the movement of DemP to the Spec of  $D_{\text{def}}\text{P}$  via the Spec of NumP.

As pointed out by C.-C. Tang (2005, 2007), Taiwan Southern Min differs from Mandarin in that it does not allow demonstratives to co-occur with the noun without the presence of the numeral and the classifier. This constraint is shown by the data of Taiwan Southern Min in (115) below:

C.-C. Tang (2007: 980; modified):

- (115) a. \*tsit    tsu  
           this    book  
           Intended meaning: ‘this book’
- b. \*hit    tsu  
           that    book  
           Intended meaning: ‘that book’

The grammatical counterparts of (115) are provided in (116) below:

- (116) a. tsit    pún    tsu  
           this    Cl    book  
           ‘this book’
- b. hit    pún    tsu  
           that    Cl    book

‘that book’

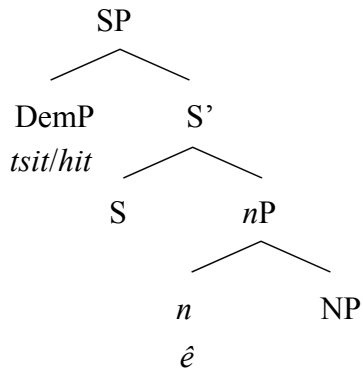
However, in contrast to *tsit* ‘this’ and *hit* ‘that’, the demonstratives *tse* ‘this’ and *he* ‘that’ as in (117) can co-occur with the noun without the presence of the numeral and the classifier.

C.-C. Tang (2007: 981; modified):

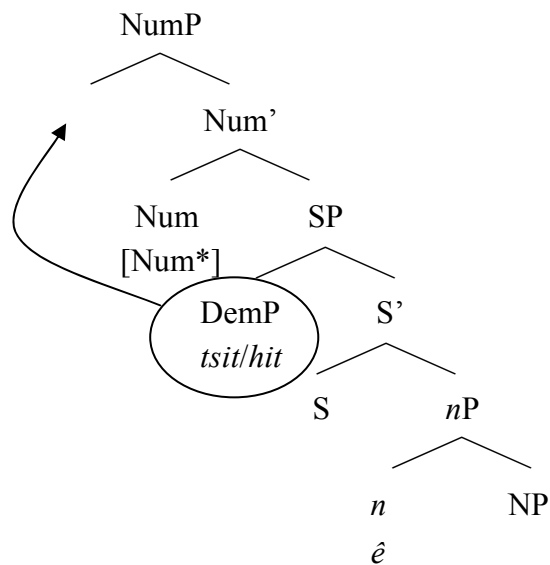
- (117) a. *tse*    *tsu*  
          this    book  
          ‘this book’
- b. *he*    *tsu*  
          that    book  
          ‘that book’

Although C.-C. Tang (2007) argues that synchronically *tse* and *he* may not be a syntactic fusion of *tsit* and *hit* with the classifier  $\hat{e}$ , I suggest that in Taiwan Southern Min the uninterpretable [+Def] feature on the *n* head must be spelt out by the insertion of classifiers (e.g.  $\hat{e}$ ). The derivation of (117) concerning the demonstratives will then be in the following steps:

- (i) the demonstrative is merged into the Spec of SP:

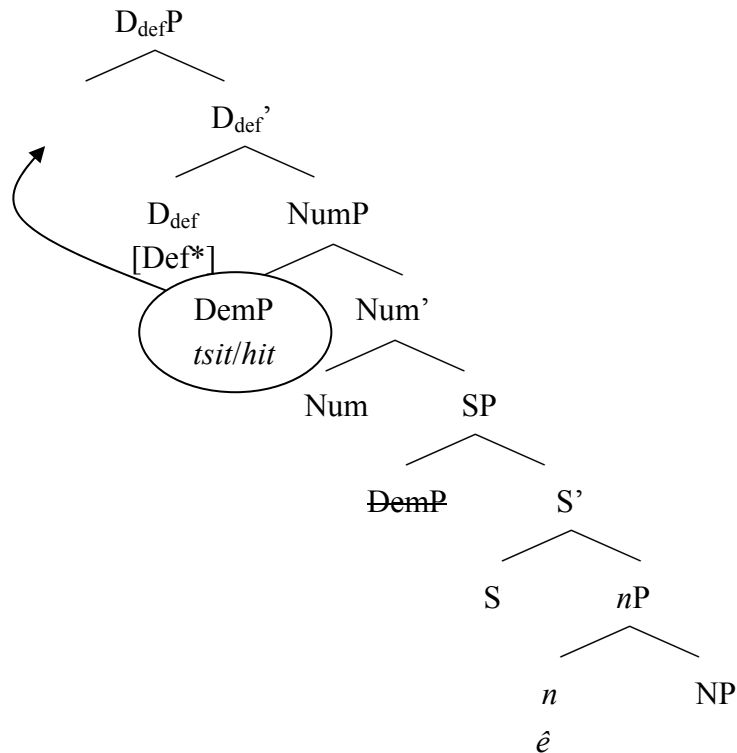


- (ii) the demonstrative, which is specified for the interpretable [Deictic] feature, values and deletes the uninterpretable [Deictic] feature on the Num head and further moves to the Spec of NumP to satisfy the [Num\*] feature on the Num head. In turn, the uninterpretable and unvalued [Num] feature on the demonstrative obtains its value from the interpretable [Num] feature on the Num head:



- (iii) the demonstrative, which is specified for the interpretable [Deictic] feature, values and deletes the uninterpretable [Deictic] feature on the head of D<sub>def</sub>P and further moves to the Spec of D<sub>def</sub>P to satisfy the [Def\*] feature on the D<sub>def</sub> head. In turn, the uninterpretable and unvalued [Def] feature of the demonstrative

obtains its value from the interpretable [Def] feature on the  $D_{\text{def}}$  head:



- (iv) the demonstrative and the classifier  $\acute{e}$  are then fused into *tse* or *he* by the PF component after Spell-Out.

This analysis for the *tse/he*-N sequence is completely consistent with the analyses for the bare nouns and the CI-N sequence in Taiwan Southern Min.

Moreover, Cantonese is similar to Taiwan Southern Min but different from Mandarin and Hakka in that it does not allow the demonstratives to co-occur with the noun without the occurrence of the classifier as shown in (118).<sup>25</sup>

Yip and Matthews (2000a: 117; modified).<sup>26</sup>

<sup>25</sup> As indicated in Section 2.5, Cantonese is different from Taiwan Southern Min in that it allows the CI-N sequence.

<sup>26</sup> Yip and Matthews provide a sentence from which I have isolated just the nominal phrase.

- (118) ni<sup>1</sup> \*(go<sup>3</sup>) daan<sup>6</sup>gou<sup>1</sup>  
 that Cl cake  
 ‘that cake’

I assume that this is due to the requirement in Cantonese that the uninterpretable [+Spec] feature on the *n* head must be lexically realised by the insertion of classifiers rather than by the N-to-*n* movement. Therefore, only the Dem-Cl-N sequence and the Dem-Numeral-Cl-N sequence are allowed in Cantonese.

With regard to the number marking of demonstratives, the four Sinitic languages do not exhibit different sets of demonstratives, such as *this/that* and *these/those* in English. In other words, demonstratives in the four Sinitic languages are not overtly marked for singularity or plurality as shown in (119) to (122).

C.-C. Tang (2007: 973; modified):

(119) Mandarin

- a. zhè/nà (yì) zhī bǐ  
 this/that one Cl pen  
 ‘this/that pen’
- b. zhè/nà liǎng zhī bǐ  
 this/that two Cl pen  
 ‘these/those two pens’

(120) Cantonese

- a. nei<sup>1</sup>/go<sup>2</sup> go<sup>3</sup> hok<sup>6</sup>saang<sup>1</sup>  
 this/that Cl student  
 ‘this/that student’

b. nei<sup>1</sup>/go<sup>2</sup>    loeng<sup>5</sup>    go<sup>3</sup>    hok<sup>6</sup>saang<sup>1</sup>  
this/that    two    Cl    student  
‘these/those two students’

C.-C. Tang (2007: 973; modified):

(121) Taiwan Southern Min

a. tsit/hit    pún    tsu  
this/that    Cl    book  
‘this/that book’

b. tsit/hit    n̄ng    pún    tsu  
this/that    two    Cl    book  
‘that book’

(122) Hakka

a. lia<sup>24</sup>/gai<sup>55</sup>    sa<sup>55</sup>    se<sup>11</sup>ngin<sup>55</sup>  
this/that    Cl    kid  
‘this/that kid’

b. lia<sup>24</sup>/gai<sup>55</sup>    sam<sup>33</sup>    sa<sup>55</sup>    se<sup>11</sup>ngin<sup>55</sup>  
this/that    three    Cl    kid  
‘these/those three kids’

As can be seen from these examples, the singular/plural interpretation of the demonstratives has to derive from the number interpretation of the numeral in each phrase. In addition, the demonstratives in Mandarin can co-occur with the quantifier *xiē* ‘some’ as shown in (102), repeated as (123) below:

Li and Shi (2003: 23; modified):

(123) zhè xiē ge xuéshēng

this XIE Cl student

‘these students’

As indicated in the above example, the quantifier *xiē* ‘some’ can also lead to the plural interpretation of the demonstrative.

In summary, we can conclude that the Dem-Numeral-Cl-N sequence and the Dem-Cl-N sequence in the four Sinitic languages share the same syntactic structure given that they do not have different distributions. In other words, the only difference between the two structures is whether the NumeralP is overtly realised or not. Furthermore, it has been shown that Cantonese and Taiwan Southern Min differ from Mandarin and Hakka in that they do not allow a demonstrative to co-occur with a noun without the occurrence of a numeral and a classifier. The acceptability of the three sequences in the four Sinitic languages is summarised in the following table:

Table 4 Acceptability of the Dem-Numeral-Cl-N, Dem-Cl-N and Dem-N Sequences

| Acceptability          | Dem-Numeral-Cl-N | Dem-Cl-N | Dem-N |
|------------------------|------------------|----------|-------|
| Mandarin               | √                | √        | √     |
| Cantonese              | √                | √        | X     |
| Taiwan Southern<br>Min | √                | √        | X     |
| Hakka                  | √                | √        | √     |

As for the number marking of demonstratives, we have noted that there is no lexical or morphological distinction between the singular and plural interpretations in the four Sinitic languages. Other elements such as numerals and quantifiers may



affect the interpretation of the demonstratives.

## 2.12 Possessor-Demonstrative-Numeral-Classifier-Noun

This section investigates how the Possessor-Dem-Numeral-Cl-N sequence and the Possessor-Dem-Cl-N sequence are derived in the four Sinitic languages. As indicated in Section 2.2.2 and Section 2.6, the possessor DP is assumed to be base-generated in the Spec of *n*P moving to the Spec of D<sub>def</sub>P (via the Spec of SP and the Spec of NumP) to satisfy the [Def\*] feature on the head of D<sub>def</sub>P. Similarly, as indicated in Section 2.2.3 and Section 2.10, the DemP is assumed to be merged in the Spec of SP and move to the Spec of D<sub>def</sub>P (via the Spec of NumP) to satisfy the [Def\*] feature on the D<sub>def</sub> head.

Since the [Def\*] feature on the D<sub>def</sub> head triggers both of the movements of the possessor DP and the DemP, one may wonder how the surface Possessor-Dem-(Numeral)-Cl-N order, as shown in (124) to (127), is derived.

(124) Mandarin

wǒ nà (sān) zhī bǐ  
my Dem three Cl pen  
'those three pens of mine'

(125) Cantonese

nei<sup>5</sup> nei<sup>1</sup> (loeng<sup>5</sup>) go<sup>3</sup> pang<sup>4</sup>jau<sup>5</sup>  
you Dem two Cl friend  
'those two friend of yours'

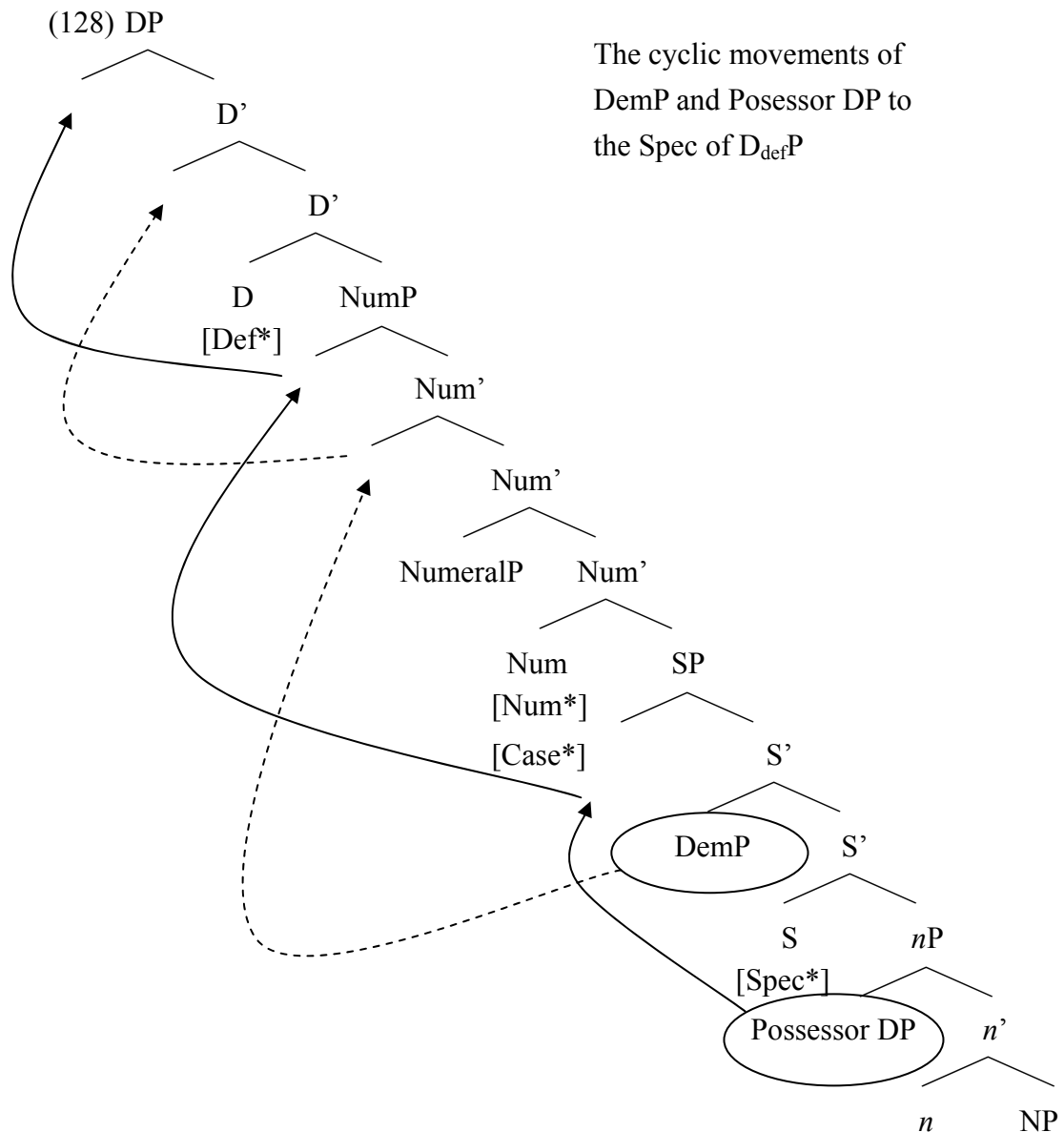
(126) Taiwan Southern Min

guá tsit (n̄ng) pún tsu  
my Dem (two) Cl book  
'these two books of mine'

(127) Hakka

gi<sup>55</sup> lai<sup>31</sup> (liong<sup>13</sup>) zong<sup>13</sup> biang<sup>13</sup>  
his Dem (two) Cl cookie  
'these two cookies of his'

Since this is the case involving movements to multiple Specs of one single head, I assume that the possessor DP first moves to the higher Spec of  $D_{\text{def}}P$  and then the DemP moves to the lower Spec of  $D_{\text{def}}P$  in order to maintain Richards' (2001) observation that multiple movements cross rather than nesting in cases where the landing sites are multiple Specs of a single head. The derivation is illustrated in (128).



More specifically, the possessor DP first moves to the Spec of NumP (via the Spec of SP) to satisfy the uninterpretable [Case\*] feature on the Num head. The possessor DP is then probed by the uninterpretable [Possessive] feature on the D<sub>def</sub> head. As for the DemP, it is probed by the uninterpretable [Deictic] feature on the D<sub>def</sub> head. With regard to the Possessor-Dem-Cl-N sequence in the four Sinitic languages, I assume that it shares the same syntactic structure with the Possessor-Dem-Numeral-Cl-N sequence, since they do not have different distributions. The difference between the two structures is whether the NumeralP is overtly realised or not. That is to say, I

assume that in the Possessor-Dem-Cl-N sequence a covert numeral ‘one’ is underlyingly present at the lowest Spec of NumP because of the singular interpretation of the sequence.

Furthermore, since the Dem-N sequence is allowed in Mandarin and Hakka, it is possible to have the Possessor-Dem-N sequence in these two languages. Examples can be found in (129) and (130) below:

(129) Mandarin

wǒ    nà    bǐ  
my    Dem    pen  
‘that pen of mine’

(130) Hakka

gi<sup>55</sup>    lai<sup>31</sup>    biang<sup>13</sup>  
his    Dem    cookie  
‘that cookie of his’

The analysis illustrated in (128) can be applied to this type of sequence as well. The only difference is that the *n* head is filled by the N-to-*n* movement rather than the lexical insertion of the classifier.

In summary, we have seen that the Possessor-Dem-Numeral-Cl-N sequence and the Possessor-Dem-Cl-N sequence in the four Sinitic languages involve the movements of the possessor DP and the DemP, both of which are triggered by the [Def\*] feature on the D<sub>def</sub> head. In addition, it has been maintained that the difference between the Possessor-Dem-Cl-N sequence and the Possessor-Dem-Numeral-Cl-N sequence is in whether the NumeralP in the lowest Spec of NumP is overtly realised

or not. Furthermore, it has been shown that the Possessor-Dem-N sequence is allowed in Mandarin and Hakka and it shares a similar derivation with the Possessor-Dem-Numeral-Cl-N sequence and the Possessor-Dem-Cl-N sequence. The acceptability of the three sequences in the four Sinitic languages is summarised in the following table:

Table 5 Acceptability of the Possessor-Dem-Numeral-Cl-N, Possessor-Dem-Cl-N and Possessor-Dem-N Sequences in the Four Sinitic Languages

| Acceptability             | Possessor-Dem-Numeral-Cl-N | Possessor-Dem-Cl-N | Possessor-Dem-N |
|---------------------------|----------------------------|--------------------|-----------------|
| Mandarin                  | √                          | √                  | √               |
| Cantonese                 | √                          | √                  | X               |
| Taiwan<br>Southern<br>Min | √                          | √                  | X               |
| Hakka                     | √                          | √                  | √               |

### 2.13 Summary

In this chapter, the internal structure of Sinitic nominal phrases has been investigated in terms of Abney's (1987) DP Hypothesis, which proposes that nominal phrases are headed by determiners. Furthermore, this chapter has maintained a universal structure for the nominal phrase in all languages in line with Pereltsvaig's (2007) Universal-DP Hypothesis, which asserts that the syntactic structure of the nominal phrase is universal regardless of the presence of lexical items which realise the heads of the functional projections. More specifically, a Probe-Goal feature-valuing model is proposed to account for the parametric variation in Sinitic and other languages within the framework of Chomsky's (2000, 2001, 2004) Phase-based Minimalist Programme.

In Section 2.2, the main functional projections in Sinitic nominal phrases were

introduced in a bottom-up fashion, from *nP* to DP, to provide a holistic view of the underlying syntactic structure of nominal phrases. In Section 2.3, we found that bare nouns can be interpreted as indefinite and generic in all four Sinitic languages. As far as the definite interpretation is concerned, bare nouns can be so interpreted in Mandarin, Taiwan Southern Min and Hakka, but not in Cantonese. In Section 2.4, we saw that there are collective markers, which can be suffixed to personal pronouns, in all the four Sinitic languages. In Section 2.5, it was shown that Taiwan Southern Min crucially differs from Mandarin, Cantonese and Hakka in that it does not have the Cl-N sequence at all. It was also noted that the Cl-N sequence in Cantonese and Hakka can convey either a definite or an indefinite reading. In Section 2.6, it was indicated that Cantonese is significantly different from Mandarin, Taiwan Southern Min and Hakka in that it allows a possessor DP to directly precede a Cl-N sequence. In Section 2.7, it was demonstrated that Mandarin, Cantonese, Taiwan Southern Min and Hakka all make a distinction between individual-denoting and quantity-denoting number expressions. It was argued that both of the constructions are DPs and they can be used to express a definite meaning. In Section 2.8, it was found that the reduplication of classifiers in Mandarin, Cantonese and Hakka can be used to express the meanings ‘all’ or ‘every’. In Section 2.9, it was argued that the word *xiē* in Mandarin should be treated as a quantifier base-generated at the Spec of NumP to express an indeterminate quantity just like the word *some* in English. In Section 2.10, it was indicated that the possessor DP in the four Sinitic languages does not stay in situ in its base position but moves to the phrase-initial position. In Section 2.11, it was shown that Cantonese and Taiwan Southern Min differ from Mandarin and Hakka in that they do not allow a demonstrative to co-occur with a noun without the occurrence of a numeral and a classifier. In Section 2.12, we saw how the Possessor-Dem-Numeral-Cl-N sequence is derived in the four Sinitic languages.

With regard to the parametric variation of nominal phrases among the four Sinitic languages, there are certain constraints in the PF component on the spell-out of some uninterpretable features. More specifically, the Cl-N sequence is ruled out in Taiwan Southern Min, and this is due to the fact that the interpretable [Num\*] feature on the Num head has to be satisfied either by the insertion of numerals or by the movement of demonstrative when the *n* head is lexically realised by a classifier. On the other hand, in contrast to Mandarin, Taiwan Southern Min and Hakka, the Cl-N sequence can appear in the subject position in Cantonese due to the requirement that the uninterpretable [+Def] feature on the *n* head must be spelt out by the insertion of classifiers.

Furthermore, the Dem-N sequence and the Possessor-Dem-Cl sequence are not allowed in Cantonese, since the uninterpretable [+Spec] feature on the *n* head requires the lexical insertion of classifiers.

As far as the extension of the functional projections is concerned, how the [Def\*], [Num\*] and [Spec\*] features can be satisfied in different constructions in the four Sinitic languages is summarised in the following table:

Table 6 Extension of Functional Projections in the Nominal Constructions of the Four Sinitic Languages

|         | Bare Nouns | <i>N-men</i><br><i>N-def</i> <sup>6</sup><br><i>N-n</i><br><i>N-den</i> <sup>2,4</sup> | CI-N      | CI-CI-N  | Numeral-CI-N | Numeral-CI-CI-N | Nominals containing Possessor DP | Nominals containing DemP |
|---------|------------|----------------------------------------------------------------------------------------|-----------|----------|--------------|-----------------|----------------------------------|--------------------------|
| [Def*]  | <i>nP</i>  | <i>nP</i>                                                                              | <i>nP</i> | SP       | NumeralP     | NumeralP        | Possessor DP                     | DemP                     |
| [Num*]  | <i>nP</i>  | <i>nP</i>                                                                              | <i>nP</i> | SP       | NumeralP     | SP              | Possessor DP                     | DemP and Numerals        |
| [Spec*] | <i>nP</i>  | <i>nP</i>                                                                              | <i>nP</i> | <i>n</i> | <i>nP</i>    | <i>n</i>        | Possessor DP                     | DemP                     |



## Chapter 3

### The Syntax-Discourse Interface of DP in Sinitic Languages<sup>1</sup>

#### 3.1 Introduction

Since Abney's (1987) DP Hypothesis, there have been various further proposals as to whether the DP involves a more articulated phrasal architecture based on data from different languages (e.g., Giusti 1991; Ritter 1991, 1992, 1993 among many others). To further maintain a DP hypothesis for Sinitic languages, this chapter seeks empirical evidence from discourse-related properties of nominal phrases.

It is generally assumed that different formal manifestations of the same proposition are related to the discourse context in which they are used. This allows a speaker to structure or package the information in such a way that there is an optimal exchange of information. Examples from Mandarin can be found in sentences (1) to (4) below:

(1) tā mǎi-le shí zhī bǐ  
s/he buy-Asp ten Cl pen  
'S/He bought ten pens.'

(2) tā mǎi-le bǐ shí zhī  
s/he buy-Asp pen ten Cl  
'(lit.) S/He bought pens ten.'

---

<sup>1</sup> This chapter contains material presented in Lin (2008c, 2009b, 2009c) and Kuo and Lin (2008).

(3) tā    bǐ    mǎi-le    shí   zhī  
       s/he   pen   buy-Asp   ten   Cl  
       ‘(lit.) S/He, pens, bought ten.’

(4) bǐ    tā    mǎi-le    shí   zhī  
       pen   s/he   buy-Asp   ten   Cl  
       ‘As for the pens, s/he bought ten.’

This chapter will focus on the issue of how the discourse-related properties are encoded in the nominal domain on the basis of data from the four Sinitic languages. It will argue that the left periphery of the nominal phrase is similar to its counterpart in the clause, both of which encode illocutionary force, topic and focus. In line with Rizzi’s (1997, 2004) proposal that CP, the clausal parallel of DP, splits into ForceP, TopP, FocP, TopP and FinP, this chapter will maintain that DP can also be decomposed into separate functional projections, namely  $D_{\text{forceP}}$ ,  $D_{\text{topP}}$ ,  $D_{\text{focP}}$ ,  $D_{\text{topP}}$  and  $D_{\text{defP}}$ . Except for the  $D_{\text{defP}}$ , which was discussed in Chapter Two, the other layers will be discussed one by one in this chapter using Sinitic data. In contrast to Giusti (1996), who argues that the counterparts of TopP and FocP in the nominal domain are not necessarily available in all languages, I assume that the existence of  $D_{\text{topP}}$  and  $D_{\text{focP}}$  is not subject to cross-linguistic parametric variation. On the basis of Sinitic language data, I propose that  $D_{\text{topP}}$  and  $D_{\text{focP}}$  are available in article-less languages and classifier languages as well. As a consequence of this proposal, this chapter will further show that topicalisation or focalisation in the clausal domain of Sinitic languages have to be licensed by DP-internal topicalisation or focalisation

respectively.

This chapter is organised in the following manner. In Section 3.2, I will investigate the left periphery of the nominal phrase based on the data from the four Sinitic languages. In Section 3.3, I will discuss the licensing condition on the topicalisation and focalisation of NP in Sinitic languages. In Section 3.4, I will examine if there is any constraint on DP-internal movements, such as the Left Branch Condition, in Sinitic languages. In Section 3.5, I will extend my analysis to linguistic data beyond Sinitic languages. I will then conclude this chapter in Section 3.6.

## **3.2 The Left Periphery of the Nominal Phrase**

This section will first review the literature that motivates analysing DP not as a unitary projection but an articulated array of projections. Next, following the split DP account, it will argue that DP can be split into a discrete set of functional projections. The nature of each projection will then be discussed in turn, based on Sinitic data.

Given the fact that only DPs and CPs can function as arguments, it is generally assumed that D is akin to C in that both of them turn their complements into arguments (e.g., Szabolcsi 1987, 1994; Stowell 1989, 1991). Furthermore, they both link their complements with the discourse or non-linguistic context. More specifically, CP converts a proposition into a particular speech act, whereas DP links a predicative category (i.e. NumP) to the universe of discourse signifying whether the referent is already contextually accessible or is novel in the discourse (Alexiadou, Haegeman and Stavrou 2007). As indicated by Ihsane and Puskás (2001: 41), finiteness in the C domain ‘anchors the event in time and determines the truth conditions of the proposition’, whereas definiteness in the D domain ‘determines the presupposition of existence of the entity represented by the nominal’. For a similar proposal see also

Haegeman (2004).<sup>2</sup>

Furthermore, the hypothesis that DP is to the nominal phrase what CP is to the clause can be supported by the parallelism between interrogative clauses and interrogative DPs in Greek, as shown in (5) and (6) below:

Alexiadou, Haegeman and Stavrou (2007: 132; modified):

(5) a. Ekane            ti?  
      did-3Sg        what  
      ‘He did what?’

      b. Ti            ekane?  
      what        did-3Sg  
      ‘What did he do?’

(6) a. to            vivlio    tinos?  
      the        book    whose  
      b. tinos    to    vivlio?  
      whose    the    book  
      ‘whose book?’

As can be seen from the examples above, wh-words in Greek can remain in situ or move to the left periphery within both the clause and the nominal phrase. In English, there is also evidence for the existence of a Spec position in the DP, parallel to that of the CP. This is illustrated in (7) below:

---

<sup>2</sup>As Haegeman (2004: 235) puts it, ‘[t]he position that encodes (in)definiteness in the D domain and in which the definite article is merged is parallel to Fin in the C domain. In the same way that finiteness “delimits/anchors” the event in time, (in)definiteness “delimits/anchors” nominal reference in space.’

Alexiadou, Haegeman and Stavrou (2007: 84; modified):

- (7) a. [<sub>AdjP</sub> How important] is this decision?  
b. [<sub>DP</sub> [<sub>AdjP</sub> How important] a decision] is this?  
c. This is [<sub>DP</sub> a [<sub>AdjP</sub> very important] decision].  
d. \*This is [<sub>DP</sub> [<sub>AdjP</sub> very important] a decision].

In (7a), the wh-phrase *how important* moves to the left periphery of the clause. In (7b), the wh-phrase *how important* moves to the left periphery of the nominal expression, preceding the indefinite article *a*. The usual position of an AdjP is shown by (7c), where the AdjP follows the indefinite article *a* (Alexiadou, Haegeman and Stavrou 2007).

Given such a parallel structure proposal and Rizzi's (1997, 2004) Split CP Hypothesis, in which CP is divided into ForceP, TopP, FocP, TopP and FinP, several researchers (i.e. Aboh 2004; Giusti 1996; Haegeman 2004; Ihsane and Puskás 2001 among many others) propose that DP can be split into a number of functional projections. For instance, Aboh (2004) provides evidence from Gungbe, an African language, demonstrating that the nominal phrase in that language includes functional projections that host topicalised and focalised nominal constituents in their Spec positions. Hence, he claims that the left periphery of a nominal expression and that of a clause are strictly parallel (Alexiadou, Haegeman and Stavrou 2007).

Given the theoretical uniformity and the empirical evidence, it is assumed that there are functional projections at the left periphery of the nominal phrase, which encode discourse-related properties, such as illocutionary force, topic and focus, as their counterparts in the clausal domain do. Furthermore, I propose that DP can be

decomposed into a series of functional projections, namely  $D_{\text{force}}\text{P}$ ,  $D_{\text{top}}\text{P}$ ,  $D_{\text{foc}}\text{P}$ ,  $D_{\text{top}}\text{P}$  and  $D_{\text{def}}\text{P}$ , which are parallel to ForceP, TopP, FocP, TopP and FinP in the clausal domain, thereby maintaining the idea that the left periphery of the nominal phrase is essentially the same cross-linguistically.

In addition, I maintain that (i) the head of  $D_{\text{force}}\text{P}$  is the locus of the [Force] feature, (ii) the head of  $D_{\text{top}}\text{P}$  is the locus of the [Top] feature, and (iii) the head of  $D_{\text{foc}}\text{P}$  is the locus of the [Focus] feature (henceforth [Foc]). In terms of feature interpretability (Chomsky 1995), the aforementioned feature carried by each functional projection is interpretable. However, the head of each functional projection bears not only the interpretable feature but also several uninterpretable features related to the other functional projections. According to Chomsky's (2001) Agree-based theory, the interpretable feature of each functional head interacts with the uninterpretable features of other functional heads via the operation Agree. For example, the  $D_{\text{top}}$  head with an unvalued uninterpretable [Def] feature and an interpretable [Top] feature serves as the Probe, while the  $D_{\text{def}}$  head with the an interpretable [Def] feature and an unvalued uninterpretable [Top] feature serves as the Goal, which is in the c-command domain of the Probe. The unvalued uninterpretable [Top] feature on the functional head  $D_{\text{def}}$  obtains its value from the interpretable [Top] feature on the  $D_{\text{top}}$  head via the operation Agree. At the same time, the interpretable [Def] feature on the functional head  $D_{\text{def}}$  values the unvalued uninterpretable [Def] feature on the  $D_{\text{top}}$  head via the same operation Agree.

In contrast to the DP Hypothesis, the other two existing analyses for nominal phrases in Sinitic languages, namely Huang's (1982, 1998) and Lin's (1997) NP analysis and Cheng and Sybesma's (1999, 2005) CIP analysis, cannot accommodate the phenomena presented in the following sections. According to the NP analysis, NP

is the only maximal projection within the nominal domain of Sinitic languages. Given the general assumption that NP is a lexical projection rather than a functional projection, discourse-related properties would not be expected to be encoded in the structure of the nominal phrase. According to the CIP analysis, the numeral classifier in Sinitic languages performs certain functions (i.e. deictic and subordinative functions) performed by the determiner in articulated languages. Therefore, one would expect the discourse-related properties to be encoded by the CI head. Nevertheless, given Bisang's (1999) observation that numeral classifiers cross-linguistically only have the functions of classification, individualisation and identification, these discourse-related properties are not found to be related to numeral classifiers. As a result, an alternative account is needed.

In the remaining part of this chapter, I will maintain that the so-called DP in Sinitic languages can also be decomposed into a series of functional projections, namely  $D_{\text{forceP}}$ ,  $D_{\text{topP}}$ ,  $D_{\text{focP}}$ ,  $D_{\text{topP}}$  and  $D_{\text{defP}}$ . Except for the  $D_{\text{defP}}$ , each projection will be discussed in turn based on the data of the four Sinitic languages in the following subsections.

Since Minimalism is adopted as the approach of this dissertation, these functional projections are introduced in a bottom-up fashion, from  $D_{\text{topP}}$  to  $D_{\text{forceP}}$ , in order to provide the reader with a holistic view of the underlying syntactic structure of the left periphery of the nominal phrase.

### **3.2.1 Topic**

This section investigates the parallel functional projection of discourse topic in the nominal domain. Using the four Sinitic languages, I will provide evidence to show that in addition to the interpretable [Top] feature there is an interpretable [Person] feature accommodated in the head of  $D_{\text{topP}}$  which immediately c-commands the  $D_{\text{defP}}$ .

More specifically, a personal pronoun is shown to be inserted in the Spec of  $D_{top}P$  functioning as the ‘aboutness’ topic in the nominal domain.

In Chapter Two, following Lyons’ (1999) proposal that definiteness should be unified with person as the same category, I maintained that the head of  $D_{def}P$  not only accommodates the interpretable [Def] feature but also the interpretable [Person] feature. However, given the fact that the [Person] feature conveys the information about the participants in the conversation, a discourse-related property, I propose that the [Person] feature is accommodated in the head of  $D_{top}P$  that immediately c-commands the  $D_{def}P$ .

First of all, I will focus on the derivation of two sequences, namely (i) the sequence of personal pronoun followed by numeral, classifier and noun and (ii) the sequence of plural personal pronoun followed by just a noun.<sup>3</sup> Examples of the two sequences in Mandarin can be found in (8) and (9) below:

Huang, Li and Li (2009: 297; modified):

Personal pronoun followed by numeral, classifier and noun

(8) a. wǒmen jǐ ge rén/xuéshēng/lǎngǔ/liúlànghàn

we several Cl person/student/lazybones/vagrant

‘us several people/students/lazybones/vagrants’

b. nǐ yí ge rén/xuéshēng/lǎngǔ/liúlànghàn

---

<sup>3</sup> Without the occurrence of the numeral and classifier, the pronoun has to be plural as shown in (9). This is also true in English as exemplified in (i):

(i) a. \*he/him student

b. them students

See Noguchi (1997) for a possible explanation for this constraint (Huang, Li and Li 2009).



you one Cl person/student/lazybones/vagrant

‘you a person/student/lazybones/vagrant’

c. tāmen liǎng ge rén/xuéshēng/lǎnguǐ/liúlànghàn

they two Cl person/student/lazybones/vagrant

‘them two people/students/lazybones/vagrants’

Plural personal pronoun followed only by a noun:

(9) a. wǒmen lǎoshī

we teacher

‘us teachers’

b. nǐmen háizi

you (plural) child

‘you children’

c. tāmen xuéshēng

they student

‘them students’

In the recent generative literature, it is generally assumed that the personal pronouns in the above examples are base-generated in the head of DP in the same way as their English counterparts.<sup>4</sup> However, it was argued above, in Section 2.4, that the plural personal pronouns (such as *wǒmen* ‘we’, *nǐmen* ‘you (plural)’ and *tāmen* ‘they’ in Mandarin) form DPs with their own internal structure. Being a syntactically phrasal element, they are not allowed to occupy a head position. As a result, they would be

---

<sup>4</sup> Postal (1969) suggests that in English pronouns behave like the definite article *the*. Since the definite article is assumed to be base-generated in the head of DP, the pronoun is thus assumed to be base-generated in the head of DP.

expected to be merged at the Spec of a functional projection in the above examples. Interestingly, the use of personal pronouns in the above constructions is quite similar to the use of personal pronouns as the base-generated or ‘aboutness’ topic in the clausal domain as shown in (10).

- (10) tāmen nǐ kàn wǒ wǒ kàn nǐ  
 they you see me I see you  
 ‘As for them, they looked at each other.’

In light of these facts, I propose that there is a  $D_{top}P$ , whose head bears an interpretable [Top] feature and an interpretable [Person] feature, that host the personal pronoun in its Spec position to specify the participants in the conversation. The merger of the personal pronoun also satisfies the [+Top\*] feature on the  $D_{top}$  head. One may wonder if there is number agreement between the personal pronoun and its following sequence. However, this is not always the case given the following example in (11).<sup>5</sup>

- (11) a. wǒ liǎng  
 I two  
 ‘we two’  
 b. nǐ sān ge rén  
 you three Cl person  
 ‘you three people’

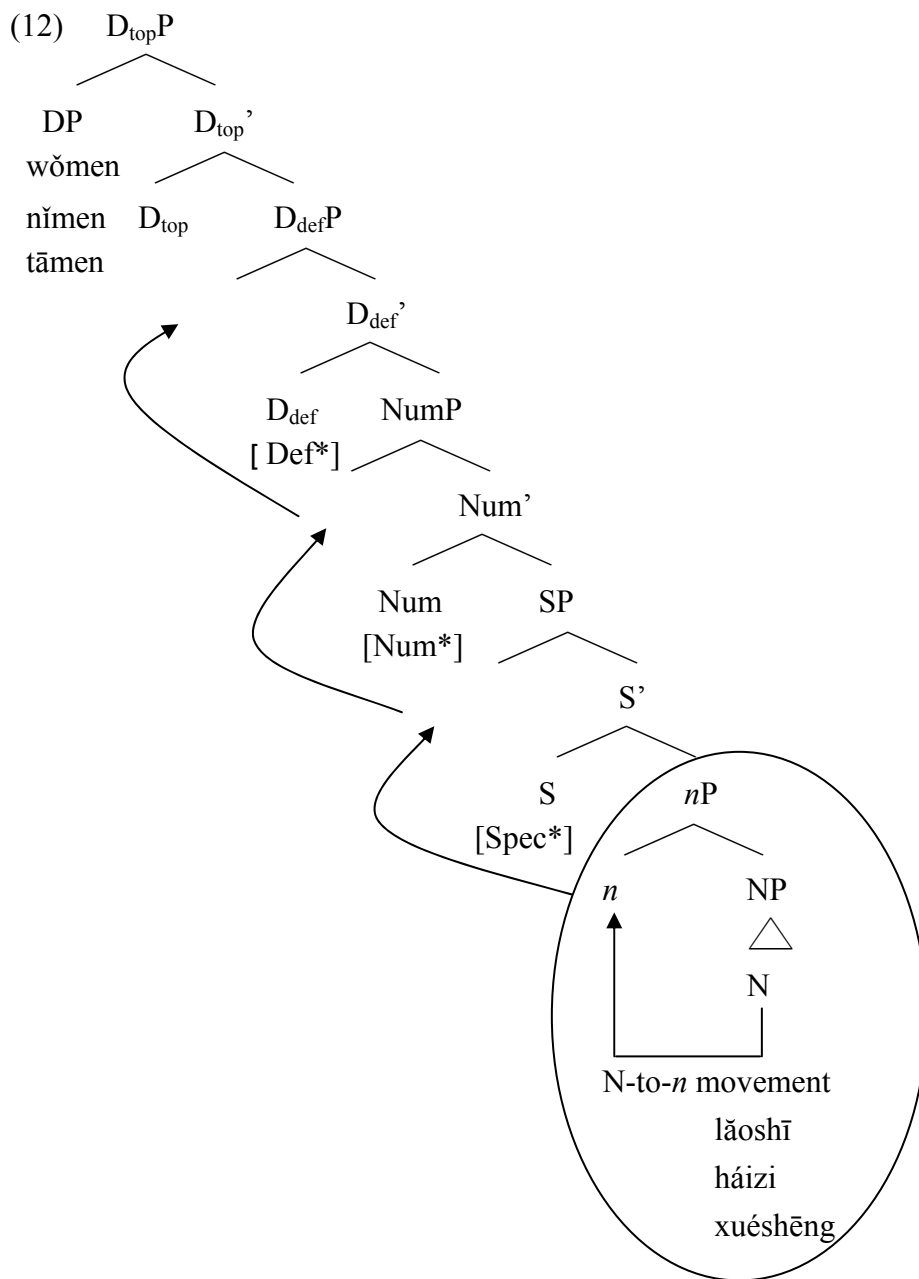
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<sup>5</sup> The grammaticality judgements on (11) diverge. For some native speakers, (11b) and (11c) are not acceptable.

c. tā      liǎng      ge  
s/he      two      Cl  
'they two'

As can be seen, the personal pronoun merged at the Spec of  $D_{top}P$  is not always required to reflect the number (i.e. singular or plural) of the entire nominal phrase, for the personal pronouns in (11) are not suffixed with the morpheme *-men*. In other words, this personal pronoun at the Spec of  $D_{top}P$  only provides person information but not number information of the whole nominal expression.

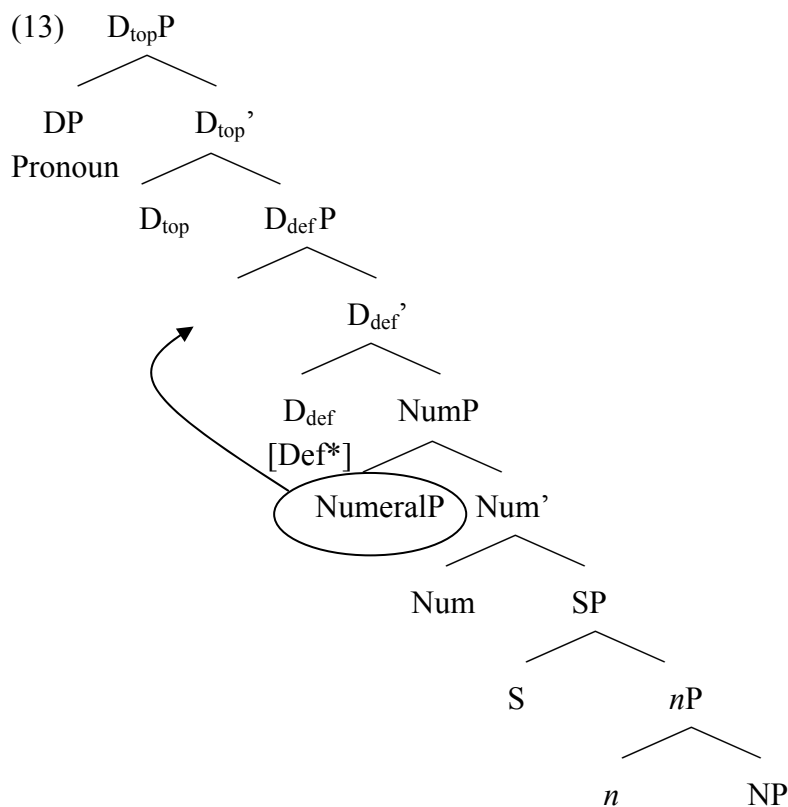
Given my proposal for the derivation of bare nouns in Section 2.3, I suggest that the nominal phrases in (9) have their derivation as illustrated in (12) below:



As we can see, the  $nP$  undergoes cyclic movement to the Spec of  $D_{def}P$  (via the Spec of  $SP$  and the Spec of  $NumP$ ) after the N-to- $n$  movement. This movement satisfies the [Def\*] feature on the  $D_{def}$  head. The merger of the  $D_{top}$  head, which bears the interpretable [Person] feature, then identifies the nominal expression as referring (i.e. [1<sup>st</sup> Person] or [2<sup>nd</sup> Person]) or not referring ([3<sup>rd</sup> Person]) to participants in the

conversation. The personal pronoun is then merged into the Spec of  $D_{top}P$  to provide specific information about the participants. The merger of the personal pronoun also satisfies the [+Top\*] feature on the  $D_{top}$  head. In line with Gillon's (2006) semantic analysis of DP, the motivation for such an analysis is that the merger of the personal pronoun into the Spec of  $D_{top}P$  provides domain restriction to the whole nominal phrase.

Consider now the derivation of the nominal phrases in (8), illustrated in (13) below. The major difference between (12) and (13) is that the [Def\*] feature on the  $D_{def}$  head in (13) is satisfied by the movement of NumeralP rather than the movement of  $nP$ .



In addition to the two aforementioned sequences, there exist sequences of personal pronoun followed by demonstrative, numeral, classifier and noun as exemplified in

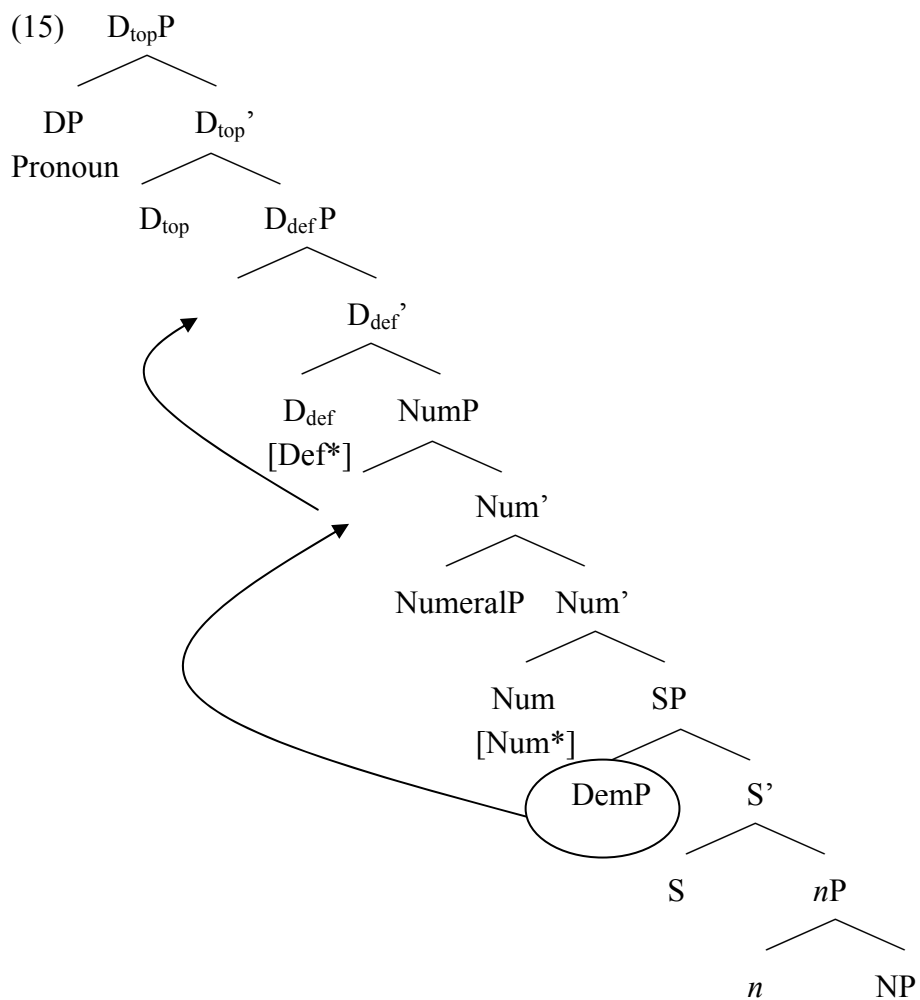
(14).

Huang, Li and Li (2009: 315; modified):

Personal pronoun followed by demonstrative, numeral, classifier and noun

(14) nǐmen            zhè            sān            ge            lǎngūtou  
          you (plural)    these        three        Cl        lazybone  
          ‘you these three lazybones’

Given my analysis for the derivation of the Dem-Numeral-Cl-N sequence in Section 2.11, I propose that this construction has its derivation structure in (15) below:



It is different from (12) and (13) in that the [Def\*] feature of the  $D_{\text{def}}$  head is satisfied by the movement of DemP. It should be pointed out again here that there is no minimality effect from the NumeralP since the  $D_{\text{def}}$  head bears an unvalued and uninterpretable [Deictic] feature probing for the interpretable [Deictic] feature on the DemP. Therefore, the DemP first moves to the outer Spec of NumP and then targets the Spec of  $D_{\text{def}}$  P to satisfy the [Def\*] feature on the  $D_{\text{def}}$  head.

However, the occurrence of nouns in the constructions such as (8) and (14) is not obligatory, and they can be omitted as shown in (16) and (17). I assume that they undergo the process of NP ellipsis. In other words, these nouns are deleted after Spell-Out by the PF component.

Huang, Li and Li (2009: 297; modified):

Personal pronoun followed by numeral and classifier

(16) a. tāmen      liǎng      ge  
           they        two        Cl  
           ‘they two’

b. nǐ      yí      ge  
       you    one Cl  
       ‘you one person’

Personal pronoun followed by demonstrative, numeral and classifier

(17) nǐmen            zhè      sān      ge  
       you (plural)    these    three    Cl  
       ‘you these three people’

The precondition for the process of NP ellipsis in these two constructions is that the *n* head is lexically realised by the insertion of classifiers.

The three aforementioned sequences, such as (8), (9) and (14), can be found in the other three Sinitic languages as well. Examples are provided in (18) to (20) below:

(18) Cantonese

a. nei<sup>5</sup>dei<sup>6</sup>    baan<sup>1</sup>    nei<sup>5</sup>jan<sup>4</sup>

you (plural) Cl    female

‘you women’

b. nei<sup>5</sup>    nei<sup>1</sup> go<sup>3</sup> sai<sup>3</sup>lou<sup>6</sup>

you    this Cl    child

‘you this child’

c. ngo<sup>5</sup>dei<sup>6</sup>    gei<sup>2</sup>    go<sup>3</sup>

we    several Cl

‘we several’

(19) Taiwan Southern Min

a. lín                    tsa-bóo-lâng

you (plural)            female

‘you women’

b. lí    tsit ê    gín-á

you    this Cl    child

‘you this child’

c. gún    kuí    ê



we several Cl  
'we several'

(20) Hakka

- a.  $\text{ngi}^{55} \text{den}^{24}$        $\text{fu}^{33} \text{ngin}^{55} \text{ga}^{53}$   
you (plural)      married woman  
'you married women'
- b.  $\text{ngi}^{55}$     $\text{lia}^{31}$     $\text{sa}^{55}$     $\text{ngin}^{55}$   
you   this Cl   person  
'you this person'
- c.  $\text{gi}^{55}$     $\text{liong}^{24}$     $\text{sa}^{55}$   
he/she   two   Cl  
'they two'

As their English translations suggest, the personal pronouns in English have a similar usage, appearing at the left periphery of nominal phrases to provide the person information.

In contrast to the general assumption in the literature (i.e. Huang, Li and Li 2009 among many others) that both pronouns and demonstratives occupy the head position of DP, my current proposal can easily explain the co-occurrence of pronouns and demonstratives within the same nominal phrases in Sinitic languages. Such an account is preferable given the phrasal status of demonstrative in Sinitic languages as indicated in Section 2.2.3.

In addition to the base-generated topic structures discussed in this section, I suggest that within the nominal domain there are topic structures derived by

movement, such as the N-Numeral-Cl sequence in (2). These are parallel to the topic structures derived by movement as shown in (4). I propose that there is another  $D_{top}P$  that immediately c-commands the  $D_{foc}P$ . This  $D_{top}P$  serves as the escape hatch for a topicalised NP to move out from the nominal domain to the clausal domain. More discussion on this  $D_{top}P$  will be provided in Section 3.3.

### 3.2.2 Focus

This section investigates the parallel functional projection of FocP in the nominal domain. In line with Aboh (2004), Haegeman (2004) and Ihsane and Puskás (2001), I maintain that in Sinitic languages a  $D_{foc}P$  is included in the left periphery of the nominal phrase. More specifically, I assume that the  $D_{foc}$  head carries an interpretable [Foc] and the Spec of  $D_{foc}P$  is the landing site of an emphasised element, such as numerals and Degree Phrases (DegPs).

Recall from Section 2.2.3 that numerals are merged in the Spec of NumP. However, as indicated by Ihsane and Puskás (2001), numerals can be focalised and bear the focal stress. This is also attested in the four Sinitic languages as shown in (21) below.

(21) a. Mandarin

|              |     |      |    |                      |     |      |
|--------------|-----|------|----|----------------------|-----|------|
| yì           | běn | shū  | vs | YÌ                   | běn | shū  |
| one          | Cl  | book |    | one                  | Cl  | book |
| ‘a/one book’ |     |      |    | ‘(exactly) one book’ |     |      |

b. Cantonese

|                  |                  |                  |    |                      |                  |                  |
|------------------|------------------|------------------|----|----------------------|------------------|------------------|
| jat <sup>1</sup> | bun <sup>2</sup> | syu <sup>1</sup> | vs | JAT <sup>1</sup>     | bun <sup>2</sup> | syu <sup>1</sup> |
| one              | Cl               | book             |    | one                  | Cl               | book             |
| ‘a/one book’     |                  |                  |    | ‘(exactly) one book’ |                  |                  |

c. Taiwan Southern Min

|              |     |      |    |                      |     |      |
|--------------|-----|------|----|----------------------|-----|------|
| tsit         | pún | tsu  | vs | TSIT                 | pún | tsu  |
| one          | Cl  | book |    | one                  | Cl  | book |
| 'a/one book' |     |      |    | '(exactly) one book' |     |      |

d. Hakka

|                   |                   |                   |    |                      |                   |                   |
|-------------------|-------------------|-------------------|----|----------------------|-------------------|-------------------|
| rhit <sup>5</sup> | bun <sup>24</sup> | shu <sup>53</sup> | vs | RHIT <sup>5</sup>    | bun <sup>24</sup> | shu <sup>53</sup> |
| one               | Cl                | book              |    | one                  | Cl                | book              |
| 'a/one book'      |                   |                   |    | '(exactly) one book' |                   |                   |

I propose that the emphasised numeral in the above examples moves to the Spec of  $D_{\text{foc}}\text{P}$  to satisfy the [+Foc\*] feature on the  $D_{\text{foc}}$  head. More precisely, I assume that the emphasised numeral bears an uninterpretable [Foc] feature in addition to an interpretable [Quantity] feature so that it can be probed by the uninterpretable [Quantity] feature and the interpretable [Foc] on the the  $D_{\text{foc}}$  head.

This proposal can further make a distinction between the quantity-denoting number expression and the individual-denoting number expression discussed in Section 2.7. I suggest that in the quantity-denoting number expression the numeral undergoes the process of focalisation and moves to the Spec of  $D_{\text{foc}}\text{P}$  (via the Spec of  $D_{\text{def}}\text{P}$ ) to satisfy the [+Foc\*] feature on the  $D_{\text{foc}}$  head. This proposal is supported by the following data, where contrastive focus is involved.

- (22) wǒ yào mǎi liǎng zhī bǐ, bú shì yì zhī  
 I want buy two Cl pen not copula one Cl  
 'I want to buy two pens, not one'

In other words, although in both quantity-denoting and individual-denoting number expressions numerals move to the Spec of  $D_{\text{def}}P$  to satisfy the [Def\*] feature on the  $D_{\text{def}}$  head as shown in Section 2.7, the numeral in the quantity-denoting number expression further moves to the Spec of  $D_{\text{foc}}P$ , whereas the numeral in the individual-denoting number expression stays in the Spec of  $D_{\text{def}}P$ . This proposal that the individual-denoting and quantity-denoting number expressions have different structural representations can capture their differences in reflexive co-reference and scope interaction as show in (23) and (24).

Huang, Li and Li (2009: 291; modified):

- (23) a. Zhāngsān<sub>i</sub> zhīdào [sān ge rén]<sub>j</sub> yíding bān  
 Zhangsan know three Cl person certainly move  
 bú dòng zìjǐ<sub>i/\*j</sub> de gāngqín  
 not move self DE piano  
 ‘Zhangsan knows that three people certainly cannot move self’s piano.’
- b. Zhāngsān<sub>i</sub> jiào [sān ge rén]<sub>j</sub> huíqù bǎ zìjǐ<sub>i/j</sub> de  
 Zhangsan ask three Cl person return BA self DE  
 gāngqín bān lái  
 piano move over  
 ‘Zhangsan asked three people to go and move self’s piano over.’

- (24) a. sān ge rén wǒ zhīdào chī-de-wán wǔ wǎn fàn  
 three Cl person I know eat-can-finish five Cl rice  
 ‘Three people, I know can finish five bowls of rice.’

- b. wǒ ràng sān ge rén chī wǔ wǎn fàn

I        let        three        Cl   person   eat   five Cl   rice  
 ‘I let three people eat five bowls of rice.’

As can be seen above, the quantity-denoting number expression *sān ge rén* ‘three people’ in (23a) cannot bind the reflexive *zìjǐ* ‘self’, whereas the individual-denoting number expression *sān ge rén* ‘three people’ in (23b) can serve as a binder of the reflexive *zìjǐ* ‘self’. Their difference in binding properties results from the feature specification of the interpretable [Ref] feature on the *n* head. The interpretable [Ref] feature is specified as [-Ref] in (23a), whereas it is specified as [+Ref] in (23b). Furthermore, a quantity-denoting number expression behaves differently from an individual-denoting number expression in that it cannot have scope interaction with another quantity-denoting expression. For instance, (24a) has only one interpretation: the total amount of rice consumed by three people is five bowls. On the contrary, (24b) can have the fifteen-bowl reading. That is, the individual-denoting number expression *sān ge rén* ‘three people’ has scope over the nominal expression *wǔ wǎn fàn* ‘five bowls of rice’. Both facts indicate that the individual-denoting and quantity-denoting number expressions have different structural representations. In contrast to Li’s (1999a) distinction between DP and NumP for the individual-denoting and quantity-denoting number expressions, the current analysis can maintain the general assumption that nominal expressions in argument positions are all DPs. In other words, the difference between the individual-denoting and quantity-denoting number expressions lies in the existence of the further movement of numerals but not the existence of the DP layer.

In addition to numerals, I assume that *n*P can also undergo the same process of focalisation and move to the Spec of  $D_{\text{foc}}$ P to satisfy the [+Foc\*] feature on the  $D_{\text{foc}}$

head. As mentioned in Section 2.4, X. Zhang (2008) notes the difference between a bare noun and a noun suffixed with the collective marker *-men* in Mandarin, which can be found in (25) and (26) below:

X. Zhang (2008: 412-413; modified):

(25) dài **jiāzhǎng-men** dào xiàozhǎng bàngōngshì qù, kěyǐ mā?

bring parent-MEN arrive principal office go, allowed SFP

1<sup>st</sup> person reading: ‘Could you bring us parents to the principal’s office?’

2<sup>nd</sup> person reading: ‘May I bring you parents to the principal’s office?’

3<sup>rd</sup> person reading: ‘Could you bring the parents to the principal’s office?’

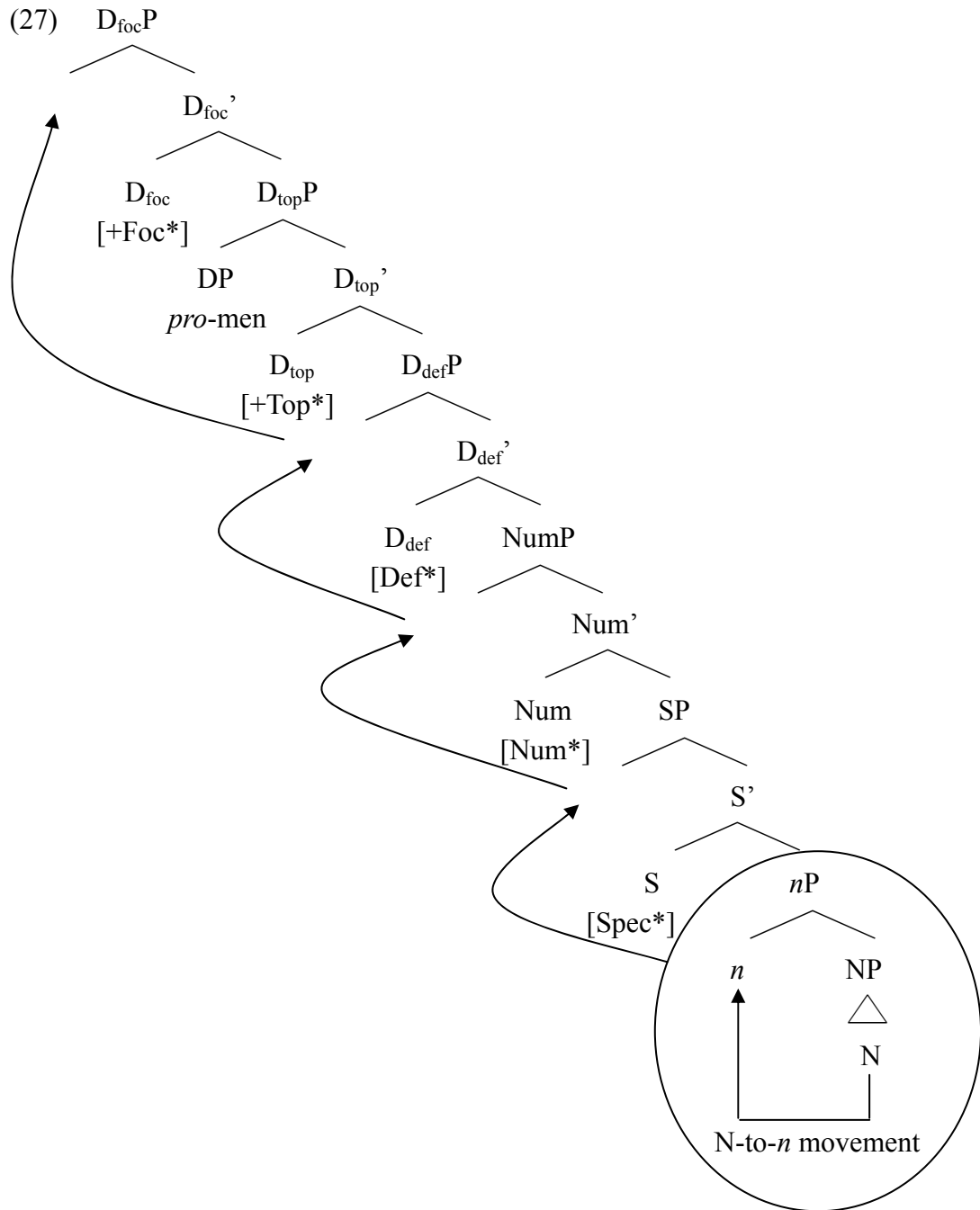
(26) dài **jiāzhǎng** dào xiàozhǎng bàngōngshì qù, kěyǐ mā?

bring parent arrive principal office go, allowed SFP

‘Could you bring the parent(s) to the principal’s office?’

As shown in the above examples, the suffixed form differs from the bare form in that the former can have varied person interpretations according to contexts whereas the latter only allows a third-person reading. In Section 2.4, I proposed that the collective marker (i.e. *-men* in Mandarin) is the spell-out of the interpretable [+Human] and [-Unit] features and the uninterpretable [PI], [Person] and [+Def] features on the *n* head. However, Section 2.4 only deals with how the collective markers in the four Sinitic languages are used to construct plural personal pronouns. Although one may intend to analyse common nouns suffixed with the collective marker in the same way as plural personal pronouns, the formation of common nouns suffixed with the collective markers is actually more complicated.

Since a common noun suffixed with the collective marker, such as *jiāzhǎng-men* ‘the parents’ in Mandarin, can have varied person interpretations in different contexts as shown in (25), I propose that this construction has its derivation as illustrated in (27) below:



Given my proposal for the derivation structure of plural personal pronoun

followed only by a noun in (12), where the plural personal pronoun, a DP with its own internal structure, is merged into the Spec of  $D_{top}P$  to provide further information about the participants in the conversation, I propose that the  $nP$  in which the N head bears an uninterpretable [Foc] feature undergoes the process of focalisation and moves to the Spec of  $D_{foc}P$  to satisfy the [+Foc\*] feature on  $D_{foc}$ . It is this  $nP$ , rather than the DP in the Spec of  $D_{top}P$ , that moves to the Spec of  $D_{foc}P$ , since the DP *pro-men* does not bear an uninterpretable [Foc] feature and is not active as a Goal. One special thing about the DP merged into the Spec of  $D_{top}P$  as in (27) is that in addition to an overt pronoun (i.e. *wǒ* ‘I’, *nǐ* ‘you’ and *tā* ‘s/he’) the personal pronoun can be a non-overt *pro*. As for the derivation of this personal pronoun, I propose that a bundle of features, including an interpretable [pronominal] feature, enters the derivation in the N position. Due to the [N\*] feature on the  $n$  head, an N-to- $n$  movement is then triggered. Furthermore, the  $nP$  undergoes cyclic phrasal movements, triggered by the [Def\*] feature on the  $D_{def}$  head, to the Spec of  $D_{def}P$  (via the Spec of SP and the Spec of NumP). The merger of the Num head provides the [Pl] feature, whereas the merger of the  $D_{def}$  head provides the [+Def] feature and the merger of the  $D_{top}$  head provides the [Person] feature. This DP is then spelt out (i.e. *pro-men*). In other words, the nominal phrase *jiāzhǎng-men* ‘the parents’ in Mandarin is actually *jiāzhǎng* followed by *pro-men*.<sup>6</sup> Such analysis can better explain why a noun suffixed with the collective marker *-men* in Mandarin can have varied person interpretations according to the context. According to Huang (1984, 1989), Mandarin Chinese is a radical *pro*-drop language so that *pro* can be freely licensed without rich agreement and it can have any contextually salient interpretation. Furthermore, the current analysis can be supported by the relevant data in the other three Sinitic languages as shown in (28) to (30)

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<sup>6</sup> X. Zhang (2008) has a similar proposal that NP-*men* is actually NP+*pro-men*.



below.

(28) Cantonese

hok<sup>6</sup>saang<sup>1</sup> keoi<sup>5</sup>-dei<sup>6</sup>

student s/he-DEI

‘they students’

(29) Taiwan Southern Min

hák-sing i-n

student s/he-N

‘they students’

(30) Hakka

hok<sup>2</sup>sang<sup>53</sup> gi<sup>55</sup>-den<sup>24</sup>

student s/he-DEN

‘they students’

The above examples support the view that an N-*men* sequence in Mandarin is actually an NP followed by a plural personal pronoun. On the other hand, the difference between Mandarin and the other three Sinitic languages is that the non-overt *pro* is not allowed in Cantonese, Taiwan Southern Min and Hakka as indicated in (31) to (33).

(31) Cantonese

\*hok<sup>6</sup>saang<sup>1</sup> *pro*-dei<sup>6</sup>

student      *pro*-DEI

Intended meaning: ‘we/you/they students’

(32) Taiwan Southern Min

\*hák-sing *pro*-n

student      *pro*-N

Intended meaning: ‘we/you/they students’

(33) Hakka

\*hok<sup>2</sup>sang<sup>53</sup>      *pro*-den<sup>24</sup>

student      *pro*-DEN

Intended meaning: ‘we/you/they students’

In other words, the DP merged into the Spec of D<sub>top</sub>P as in (27) requires an overt spell-out of the personal pronoun in these three languages. The current proposal can also be applied to the proper name suffixed with the collective marker (i.e. *Zhāngsān-men* ‘Zhangsan and his company’ in Mandarin) which denotes an associative meaning. Furthermore, as pointed out by Cheng and Sybesma (1999), the collective marker *-men* in Mandarin is not unique cross-linguistically, for Den Besten (1996) reports such markers in Ewe, Icelandic and Afrikanns, here, and subsequently. For instance, the third person plural pronoun *hulle* in Afrikanns functions as such a marker. As shown in (34) below, it can combine with a DP to express an associative meaning.

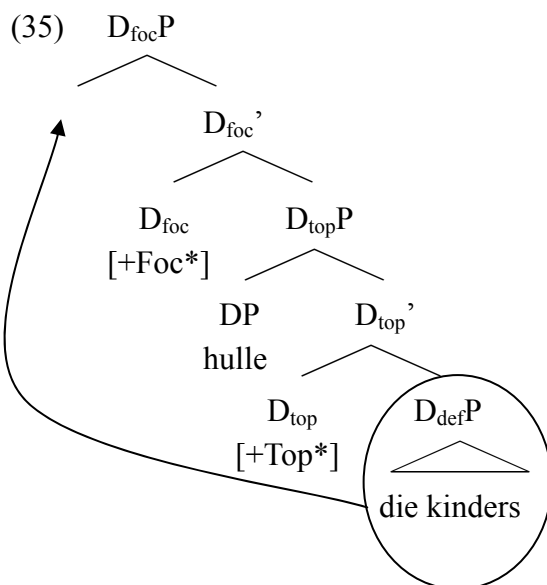
Cheng and Sybesma (1999: 537):

(34) die kinders-hulle

the children-them

‘the children and possibly one or two other persons associated with them’

According to my current account, the construction in (34) has its derivation as illustrated in (35) below:



Here I assume that the  $D_{\text{defP}}$  with an uninterpretable [Foc] feature moves to the Spec of  $D_{\text{focP}}$  to satisfy the [+Foc\*] feature on the  $D_{\text{foc}}$  head.

In addition to NumeralP and  $nP$ , it is found that a DegP, which adjoins to the left of  $nP$  when it enters derivation, can undergo the process of focalisation as well. The DegP is an extended functional projection of an adjective, and it takes an AdjP as its complement. For instance, the words *so*, *quite*, *too* and *that* in English are used to form a DegP, as shown in (36).

(36) a. So beautiful a garden!

- b. Quite annoying a job.
- c. Too good a deal.
- d. That big a turnout<sup>7</sup>

Similarly, the words *hǎo* ‘very’, *zhēn* ‘so’, *tèbié* ‘particular’, *chāo* ‘super’, *hěn* ‘very’ and *duō* ‘much/many’ in Mandarin are used to construct a DegP. Examples can be found in (37)<sup>8</sup>:

- (37) a. *hǎo jīngcǎi yì chǎng yǎnjiǎng*  
 very fantastic one Cl speech  
 ‘What a fantastic speech!’
- b. *zhēn háohuá yí dòng fangzǐ*  
 so extravagant one Cl house  
 ‘So extravagant a house!’
- c. *tèbié dà yì jiān kètīng*  
 particular big one Cl living room  
 ‘So big a living room!’
- d. *chāo piàoliàng nà ge nǚhái*  
 so pretty that Cl girl  
 ‘So pretty that girl!’
- e. *duō měilì yí zuò huāyuán*  
 much beautiful one Cl garden

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<sup>7</sup> Alexiadou, Haegeman and Stavrou (2007) provide a sentence from which I have isolated just the nominal phrase.

<sup>8</sup> Some speakers of Mandarin in China do not accept all these examples. Further work needs to be done to see why there is such a dialectal difference.

‘So beautiful a garden!’

The counterparts of these degree words in the other three Sinitic languages are used to form a DegP as well. Examples can be found in (38) to (40) below:

(38) Cantonese

hou<sup>2</sup>    leng<sup>3</sup>    fuk<sup>1</sup>    waa<sup>2</sup>  
very    pretty    Cl    painting  
‘So pretty a painting!’

(39) Taiwan Southern Min

tsin    suí    tsit    ê    tsa-bóo    gín-á  
so    pretty    one    Cl    female    child  
‘So pretty a girl!’

(40) Hakka

an<sup>13</sup>    ziang<sup>53</sup>    rhit<sup>5</sup>    sa<sup>55</sup>    se<sup>11</sup>moi<sup>11</sup>  
very    pretty    one    Cl    girl  
‘So pretty a girl!’

I assume that the DegP moves to the Spec of D<sub>foc</sub>P because of the [+Foc\*] feature on the D<sub>foc</sub> head. More details on the movement of DegP will be discussed in Section 3.2.3.

However, the [+Foc\*] feature on the D<sub>foc</sub> head can be satisfied not only by movement but also by the operation Merge. For instance, a proper name, a DP with its

own internal structure, can be merged into the Spec of  $D_{\text{foc}}P$  as shown in (41) to (44) below:

(41) Zhāngsān tā zhè yì ge rén  
Zhangsan he this one Cl person  
'Zhangsan, this man'

(42) Zhāngsān tāmen zhè sān ge (rén)  
Zhangsan they these three Cl person  
'they three people, including Zhangsan'

(43) Zhāngsān-men zhè sān ge (rén)  
Zhangsan-MEN these three Cl person  
'they three people, including Zhangsan'

Huang, Li and Li (2009: 299; modified):<sup>9</sup>

(44) Zhāngsān Lǐsì tāmen nà jǐ ge guāi háizi  
Zhangsan Lisi them that several Cl good child  
'those several good children, including Zhangsan and Lisi'

As can be seen from the examples above, the proper name in this construction is the focal part of the entire nominal phrase, since it points out a representative of the referents denoted by the following nominal phrase. In other words, the proper name serves as the anchor for the identification of the group. This can also explain why the

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<sup>9</sup> Huang, Li and Li provide a sentence from which I have isolated just the nominal phrase.

singular proper name can co-occur with the plural pronoun (as indicated by the suffix *-men*) as shown in (42).

Furthermore, it is important to point out that the DP structure in question is not two separate units, such as a DP with an appositive (i.e. *Robbie, a hot-tempered tennis player* in English) or a DP with an adverbial (i.e. *Mary herself* in English). In the apposition construction, there is an obligatory pause between the two elements. However, the proper name or pronoun in (41) to (44) is not followed by a pause. Therefore, the nominal expressions discussed are not appositives. They are not nominals plus adverbials either. A nominal expression with an emphatic adverbial can be separated by a modal as shown in (45):

- (45) Zhāngsān huì zìjǐ lái  
 Zhangsan will self come  
 ‘Zhangsan will come by himself.’

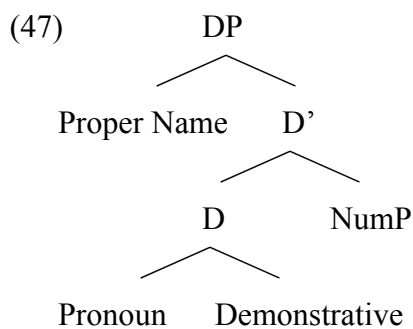
On the contrary, the DP structure discussed cannot be separated by a modal as shown in (46):

- (46) a. Zhāngsān tāmen nà sān ge rén huì lái  
 Zhangsan they that three Cl person will come  
 ‘Those three people, including Zhangsan, will come.’  
 b. \*Zhāngsān huì tāmen nà sān ge rén lái  
 Zhangsan will they that three Cl person come  
 Intended meaning: ‘Those three people, including Zhangsan, will come.’  
 c. \*Zhāngsān tāmen huì nà sān ge rén lái

Zhangsan they will that three Cl person come  
 Intended meaning: ‘Those three people, including Zhangsan, will come.’

Contrary to the general assumption in the literature that pronouns, demonstratives and proper names all occupy the head position of DP, my current proposal can easily explain the co-occurrence of these three lexical items within the same nominal phrases in Sinitic languages. In addition, given the phrasal status of demonstrative in Sinitic languages discussed in Section 2.2.3, the current account is preferable to Huang, Li and Li’s (2009) proposal illustrated in (47) below.

Huang, Li and Li (2009: 316; modified):



Their postulation of a doubly-filled head in (47) obviously violates the X-bar template they assume.

Moreover, the current proposal can explain why the noun suffixed with the collective marker (i.e. *-men* in Mandarin) can appear in a pre-numeral position as exemplified in (48) but not in a post-classifier position as shown in (49).

Iljic (1994: 93; modified):

(48) gē-men            sān            ge    (rén)  
       brother-MEN    three        Cl    person



‘the brothers, the three of them’

Huang, Li and Li (2009: 307; modified):

(49) \*sān        ge    xuéshēng-men

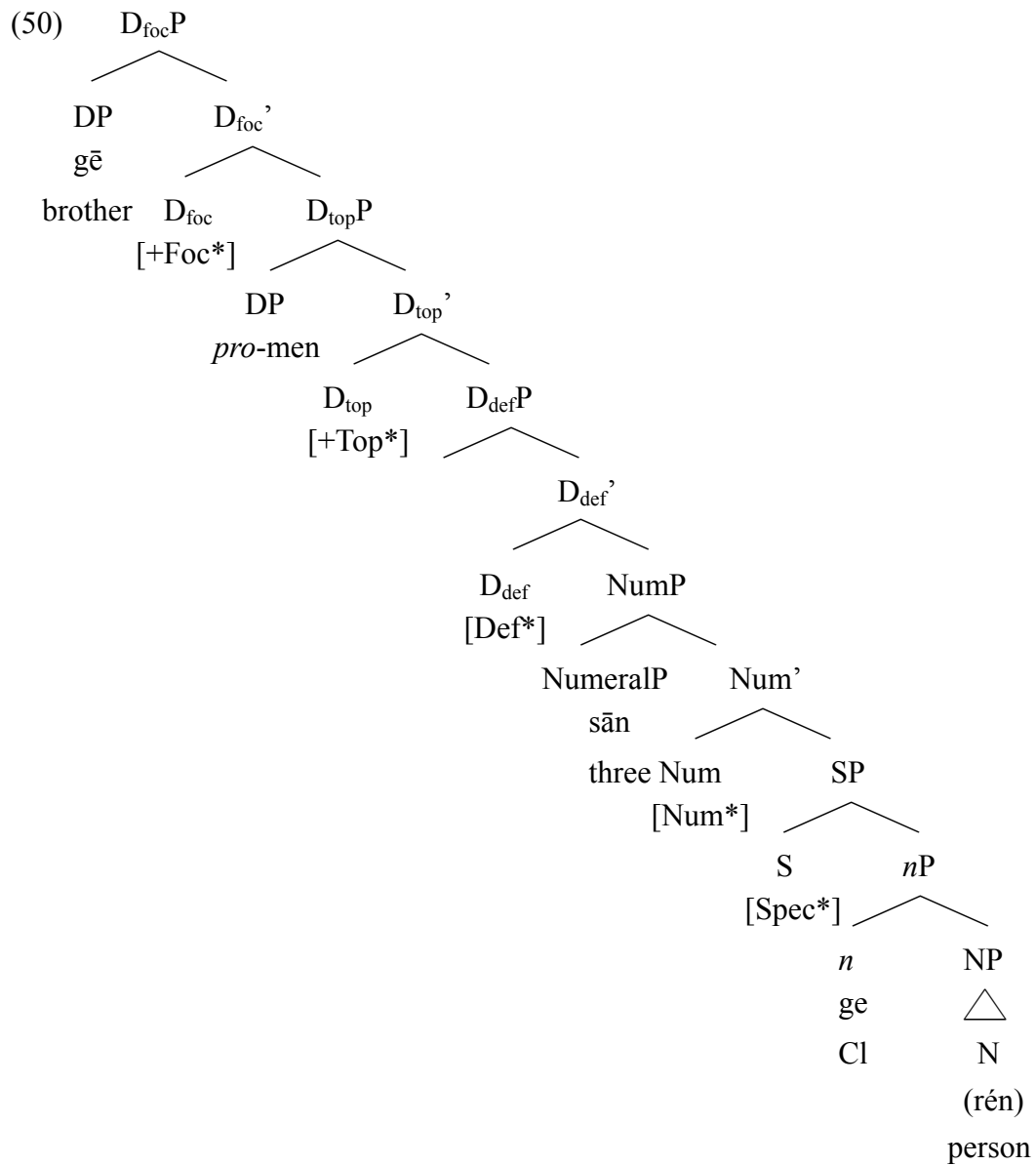
three        Cl   student-MEN

Intended meaning: ‘three students’

Example (48) is not ruled out because the sequence *gē-men* ‘the brothers’ is actually *gē* ‘brother’ followed by *pro-men*. The derivation of (48) is illustrated in (50) below:<sup>10</sup>

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<sup>10</sup> To save space, the  $D_{\text{force}}P$  and the higher  $D_{\text{top}}P$  are not present in (50).



As can be seen, the word *gē* ‘brother’, a DP with its own internal structure, is merged into the Spec of  $D_{\text{foc}}\text{P}$  and the Spec of  $D_{\text{top}}\text{P}$  accommodates *pro-men*. The NP *rén* ‘person’ can be elided by the PF component when given the right context.

The phrasal elements that can fill the Spec of  $D_{\text{foc}}\text{P}$  to satisfy the  $[+\text{Foc}^*]$  feature on the  $D_{\text{foc}}$  head is summarised in the following table:

Table 1 Satisfaction of the [+Foc\*] Feature on the D<sub>foc</sub> Head

|          |                            |
|----------|----------------------------|
|          | [+Foc*]                    |
| Merge    | Proper Name                |
| Movement | NumeralP, <i>n</i> P, DegP |

Since interrogative constructions are related to an inquiry for new information, one may wonder if there is *wh*-movement within the nominal phrase targeting the Spec of D<sub>foc</sub>P to satisfy the [+Foc\*] feature. Given the fact that Sinitic languages are the so-called *wh*-in-situ languages, this question becomes more interesting. This issue will be addressed in Section 3.2.3.

In addition to the aforementioned focus structures, I assume that the D<sub>foc</sub>P can also serve as the escape hatch for a focalised NP to move out from the nominal domain to the clausal domain. More discussion on this role of the D<sub>foc</sub>P will be provided in Section 3.3.

### 3.2.3 Force

This section investigates the functional projection which encodes illocutionary force, such as declarative, exclamative, interrogative or imperative, in the nominal domain. From the four Sinitic languages, I will provide evidence to show that there is a D<sub>force</sub> head bearing an interpretable [Force] feature, which can be optionally lexicalised by an overt phrase-final particle (i.e. *ne*, *mā* and *ba* in Mandarin).

In the literature, C.-F. Wu (2008) investigates the syntax and semantics of the construction *hǎo yí ge N* ‘what a N’ in Mandarin Chinese and proposes that it is an exclamative nominal expression. An example of the construction is provided in (51) below:

C.-F. Wu (2008: 1; modified):

- (51) *hǎo yí ge huídá*  
good one Cl answer  
'What an answer!'

In line with Porter and Zanuttini (2005), C.-F. Wu further argues that the construction expresses a factive meaning, in which the proposition of the phrase is presupposed to be true. However, given the fact that the *hǎo yí ge N* construction lacks a *wh*-word, she argues against Porter and Zanuttini's (2005) claim that a relative clause is obligatory in the formation of nominal exclamatives. Instead, C.-F. Wu asserts that the word *hǎo* is a D element with unvalued [Factive] (henceforth [Fact]) and [Degree] (henceforth [Deg]) features and the *hǎo yí ge N* construction is a DP. According to her proposal, the [Fact] feature of the word *hǎo* is valued by the NP, whereas the [Deg] feature of the word *hǎo* is valued by an AdjP situated in the Spec of NP.

Nevertheless, since the word *hǎo* can function as an adjective meaning 'good' or an adverb meaning 'very' as exemplified in (52), it is uneconomical to analyse *hǎo* as a determiner.

C.-F. Wu (2008: 1-2; modified):

- (52) a. *mǎli shì ge hǎo nǚhái*  
Mary is Cl good girl  
'Mary is a good girl.'
- b. *zhèi ge nǚhái hǎo piàoliàng*  
this Cl girl good pretty  
'This girl is very pretty.'

Furthermore, in an exclamative nominal expression, the word *hǎo* can be used to modify an adjective (i.e. *jīngcǎi* ‘fantastic’) as shown in (53).

- (53) *hǎo jīngcǎi yì chǎng yǎnjiǎng*  
 very fantastic one Cl speech  
 ‘What a fantastic speech!’

If *hǎo* is analysed as a determiner, we have to treat *hǎo* as two or more homonymous items in all of these cases. This is quite uneconomical. In contrast to C.-F. Wu’s analysis, I propose that the word *hǎo* in the *hǎo yí ge N* construction in fact occupies the head of a functional projection, DegP. The DegP is an extended projection of an adjective. It takes an AdjP as its complement. Moreover, I assume that the Deg head carries an interpretable [Deg] feature and the DegP adjoins to the left of *nP* in its base position. In the formation of exclamative nominals, the DegP moves to the Spec of  $D_{\text{foc}}P$  to satisfy the [+Foc\*] feature on the  $D_{\text{foc}}$  head. More specifically, the  $D_{\text{foc}}$  head with an unvalued uninterpretable [Deg] feature and an interpretable [+Foc] feature serves as the Probe, while the Deg head with the interpretable [Deg] feature and an unvalued uninterpretable [Foc] feature serves as the Goal. The unvalued uninterpretable [Deg] feature on the functional head  $D_{\text{foc}}$  copies its value from the interpretable [Deg] feature on the Deg head via the operation Agree. At the same time, the interpretable [+Foc] feature on the functional head  $D_{\text{foc}}$  values the unvalued uninterpretable [Foc] feature on the Deg head via the same operation. Such a construction is not idiosyncratic to Sinitic languages. For instance, as exemplified in (54), English *so*, *quite*, *too* and *that* exhibit a similar structure as the *hǎo yí ge N*

construction in Mandarin.

- (54) a. So beautiful a garden.  
b. Quite annoying a job.  
c. Too good a deal.  
d. That big a turnout<sup>11</sup>

Given the fact that there is no wh-word in the above constructions, I also argue against Porter and Zanuttini's (2005) claim that a relative clause is obligatory in the formation of English nominal exclamatives.

In fact, the word *hǎo* 'very' is not the only degree word in Mandarin that forms a DegP. There are other words, such as *zhēn* 'so', *tèbié* 'particular', *chāo* 'super', *hěn* 'very' and *duō* 'much/many', that can also be used to construct a DegP. Examples can be found in (55) below:

- (55) a. zhēn háohuá yí dòng fangzi  
so extravagant one Cl house  
'So extravagant a house!'
- b. tèbié dà yì jiān kètīng  
particular big one Cl living room  
'So big a living room!'
- c. chāo piàoliàng nà ge nǚhái  
so pretty that Cl girl

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<sup>11</sup> Alexiadou, Haegeman and Stavrou (2007) provide a sentence from which I have isolated just the nominal phrase.

‘So pretty that girl!’

d. duō měili yí zuò huāyuán

much beautiful one Cl garden

‘So beautiful a garden!’

Furthermore, I propose that within an exclamative nominal expression there is a  $D_{force}$  head bearing an interpretable [Force] feature specified as [Exclamative] and that the  $D_{force}$  head can be lexically realised by an overt or covert exclamative particle (EP) in Sinitic languages as shown in (56).

(56) hǎo jīngcǎi yì chǎng yǎnjiǎng (ne)

very fantastic one Cl speech (EP)

‘What a fantastic speech!’

In addition to the degree words, I note that in Mandarin the wh-words, such as *shéme* ‘what’, *shá* ‘what’ and *hé* ‘which’, can be used to construct the exclamative nominal expressions as well. Examples can be found in (57) below:

(57) a. shéme wányì (ma)

what thing (EP)

‘What the hell!’

b. shuō shá shǎ huà

say what silly word

‘What a silly word you are saying!’

c. zhè chéng hé tǐtǒng

this form which norm

‘This is usually not the norm that we follow!’

Similarly, the *wh*-words in the other three Sinitic languages can also be used to form exclamative nominal expressions. Examples can be found below:

(58) a. Cantonese

me<sup>1</sup>waa<sup>2</sup>

What!

‘What!’

b. Taiwan Southern Min

siánn-mih uánn-ko

what thing

‘What the hell!’

c. Hakka

mak<sup>5</sup>gai<sup>11</sup> dung<sup>53</sup>si<sup>53</sup>

what thing

‘What the hell!’

Interestingly, the *wh*-word *how* in English shows evidence of a comparable construction, as exemplified in (59).

(59) a. how funny an idea.

b. how good a deal.



I propose that these wh-words are also base-generated in the head of the DegP and the DegP moves to the Spec of D<sub>foc</sub>P to satisfy the [+Foc\*] feature on the D<sub>foc</sub> head. Such a proposal is based on the fact that these wh-words are in complementary distribution with the other degree words in both Mandarin and English as shown in (60) and (61).

(60) a. \*shéme      hǎo      yí      ge      huídá  
           what      good      one      Cl      answer  
           Intended meaning: ‘What an answer!’

b. \*hǎo      shéme      yí      ge      huídá  
           good      what      one      Cl      answer  
           Intended meaning: ‘What an answer!’

(61) a. \*how too good a deal  
       b. \*how so good a deal  
       c. \*how quite good a deal

Furthermore, a noun suffixed with the collective marker *-men* in Mandarin can be used as an exclamative nominal expression in allocution. Examples are provided in (62) below:

(62) a. quán      guó      tóngbāo-men  
           whole      country      fellow citizen-MEN  
           ‘(Dear) fellow citizens!’

Iljic (2005: 79; modified):

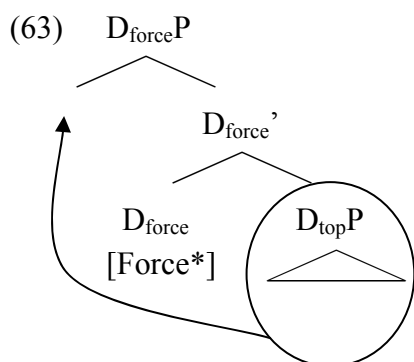
b. péngyǒu-men

friend-MEN

‘(Dear) friends!’

As their English translations suggest, the plural form of nouns in English shares the same function. Therefore, I propose that the interpretable [Force] feature on the  $D_{\text{force}}$  head is specified as [Exclamative] in the above examples and their counterparts in English.

Given the fact that the exclamative particle in Sinitic languages appears in a phrase-final position as shown in (56), there must be a DP-internal phrasal movement involved. I propose that the complement of  $D_{\text{force}}\text{P}$  moves to the Spec of  $D_{\text{force}}\text{P}$  to satisfy the [Force\*] feature on the  $D_{\text{force}}$  head. More specifically, the  $D_{\text{force}}$  head with an unvalued uninterpretable [Top] feature and an interpretable [Force: Exclamative] feature serves as the Probe, while the  $D_{\text{top}}$  head with an interpretable [Top] feature and an unvalued uninterpretable [Force] feature serves as the Goal. The unvalued uninterpretable [Top] feature on the functional head  $D_{\text{force}}$  copies its value from the interpretable [Top] feature on the  $D_{\text{top}}$  head in the process of Agree. Simultaneously, the interpretable [Force: Exclamative] feature on the functional head  $D_{\text{force}}$  values the unvalued uninterpretable [Force] feature on the  $D_{\text{top}}$  head through the same Agree operation. The  $D_{\text{top}}$  head pied-piping with its complement then moves to the Spec of  $D_{\text{force}}\text{P}$  to satisfy the [Force\*] feature on the  $D_{\text{force}}$  head. This is illustrated in (63) below:



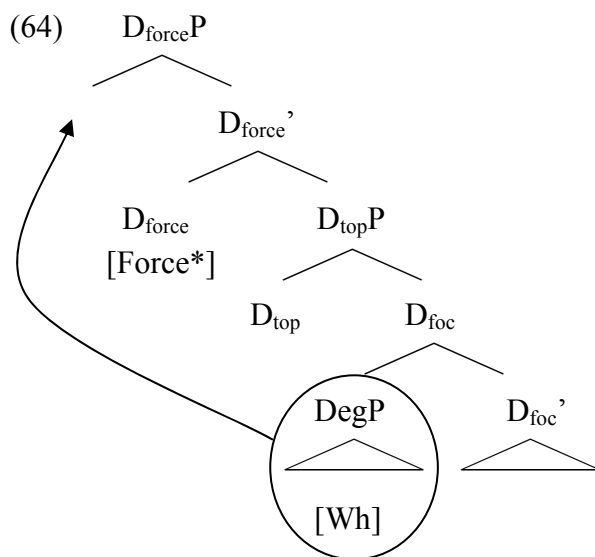
This roll-up movement is parallel to the obligatory XP-raising in the left periphery of the clause in Sinitic languages. For example, Hsieh and Sybesma (2008) propose that in Chinese the complement of the highest complementiser in a Split-C system moves to its Spec to derive the correct word order for Chinese sentence final particles (cf. L. Cheung 2008; Simpson and Wu 2002).

The difference between English and Sinitic *wh*-exclamative nominal expressions is how the [Force\*] feature on the  $D_{\text{force}}$  head is satisfied. Given the fact that there is no counterpart of Sinitic phrase-final particles in English, there should not be movement of the complement of  $D_{\text{force}}P$  to the Spec of  $D_{\text{force}}P$ . Instead, given the parallelism between CP and DP, I propose that in English there is *wh*-movement taking place in the constructions containing *wh*-elements such as (59). In other words, the DegP in (59) further moves to the Spec of  $D_{\text{force}}P$  to satisfy the [Force\*] feature on the  $D_{\text{force}}$  head after moving to the Spec of  $D_{\text{force}}P$ . More specifically, the  $D_{\text{force}}$  head with an unvalued uninterpretable [Wh] feature<sup>12</sup> and an interpretable [Force:

---

<sup>12</sup> Only when a *wh*-word is selected into the numeration, will the  $D_{\text{force}}$  head bear such a feature. This is parallel to the fact that in the clausal domain the Force head bears an uninterpretable [Wh] feature when a *wh*-expression is selected into the numeration. Following Adger (2003), I assume that the Force head bears an uninterpretable [Wh] feature and an interpretable [Force] feature specified as [Interrogative], while *wh*-expressions have an interpretable [Wh] feature and an uninterpretable [Force] feature.

Exclamative] feature serves as the Probe, while the Deg head with an interpretable [Wh] feature and an unvalued uninterpretable [Force] feature serves as the Goal. The unvalued uninterpretable [Wh] feature on the  $D_{force}$  head obtains its value from the interpretable [Wh] feature on the Deg head through the operation Agree. Simultaneously, the unvalued uninterpretable [Force] feature on the Deg head is valued by the interpretable [Force: Exclamative] feature on the  $D_{force}$  head via the same operation. The Deg head pied-piping with its complement then moves to the Spec of  $D_{force}P$  to satisfy the [Force\*] feature on the  $D_{force}$  head. This is illustrated in (64) below:



However, in English whether fronting or pied-piping is mandatory depends on the Deg head. Consider the following examples:

- (65) a. \*A how good deal. (base)  
 b. How good a deal. (fronting and pied-piping)  
 c. \*How a good deal. (fronting)

- (66) a. \*A what good deal. (base)  
 b. \*What good a deal. (fronting and pied-piping)  
 c. What a good deal. (fronting)

Matushansky (2002: 60):

- (67) a. a quite clever decision. (base)  
 b. quite annoying a job. (fronting and pied-piping)  
 c. quite a boring person. (fronting)

Example (65) shows that the feature bundle of *how* requires both fronting and pied-piping so that the DegP first moves to the Spec of  $D_{\text{foc}}\text{P}$  and then lands on the Spec of  $D_{\text{force}}\text{P}$ . In contrast, example (66) indicates that the feature bundle of *what* only requires fronting but not pied-piping so that the Deg head first raises to the head of  $D_{\text{foc}}\text{P}$  and then lands on the head of  $D_{\text{force}}\text{P}$ . Example (67) further shows that the feature bundles of *quite* can be flexible. Either fronting or pied-piping or even none of them is required. Yet since the word *quite* is not a wh-word and bears no [Wh] feature, I assume it only targets the  $D_{\text{foc}}\text{P}$  but not the  $D_{\text{force}}\text{P}$ . More precisely, the Deg head lexically realised by the degree words (i.e. *quite*) bears only an interpretable [Deg] feature, while the Deg head lexically realised by the wh-words (i.e. *how* and *what*) have an extra interpretable [Wh] feature in addition to the interpretable [Deg] feature.

Next, in addition to the exclamative nominal expressions, I propose that there are interrogative nominal phrases. They can be constructed by wh-words, such as *jǐ* ‘how many’, *nǎ* ‘which’ and *shéi* ‘whose’ in Mandarin. Examples from the four Sinitic languages can be found in (68) to (71) below:

(68) a. Mandarin

jǐ      ge      rén      (ne)  
how many Cl person (QP)  
'How many people?'

b. Cantonese

gei<sup>2</sup>do<sup>1</sup>      (go<sup>3</sup>) jan<sup>4</sup>      (aa<sup>1</sup>)  
how many Cl person (QP)  
'How many people?'

c. Taiwan Southern Min

kuí      ê      lāng      (leh)  
how many Cl person (QP)  
'How many people?'

d. Hakka

gi<sup>24</sup>      gai<sup>11</sup>      ngin<sup>55</sup>      (ne<sup>53</sup>)  
how many Cl person (QP)  
'How many people?'

(69) a. Mandarin

nǎ      ge      rén      (ne)  
which Cl person (QP)  
'Which person?'

b. Cantonese

bin<sup>1</sup>      go<sup>3</sup>      jan<sup>4</sup>      (aa<sup>1</sup>)  
which Cl person (QP)  
'Which person?'

c. Taiwan Southern Min

toh tsit ê lāng (leh)

which one Cl person (QP)

‘Which person?’

d. Hakka

nai<sup>33</sup> zhak<sup>5</sup> ngin<sup>55</sup> (ne<sup>53</sup>)

which Cl person (QP)

‘Which person?’

(70) a. Mandarin

shéi fùqīn (ne)

whose father (QP)

‘Whose father?’

b. Cantonese<sup>13</sup>

bin<sup>1</sup>go<sup>3</sup> ge<sup>3</sup> baa<sup>4</sup>baa<sup>1</sup> (ne<sup>1</sup>)

whose GE father (QP)

‘Whose father?’

c. Taiwan Southern Min<sup>14</sup>

siánn-lāng ê lāu-pē (leh)

who-people E father (QP)

‘Whose father?’

d. Hakka<sup>15</sup>

ma<sup>24</sup> ngin<sup>55</sup> gai<sup>11</sup> a<sup>53</sup>ba<sup>53</sup> (ne<sup>53</sup>)

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<sup>13</sup> More discussion of the particle *ge*<sup>3</sup> will be provided in Chapter Four.

<sup>14</sup> More discussion of the particle *ê* will be provided in Chapter Four.

<sup>15</sup> More discussion of the particle *gai*<sup>11</sup> will be provided in Chapter Four.

who people      GAI      father      (QP)

‘Whose father?’

(71) a. Mandarin

shéi      nǎ      jǐ      fù      huà      (ne)

whose    which    how many    Cl    painting    (QP)

‘Whose paintings? Which one and how many of them?’

b. Cantonese

bin<sup>1</sup>go<sup>3</sup>      go<sup>2</sup>      gei<sup>2</sup>      fuk<sup>1</sup>      waa<sup>6</sup>      (ne<sup>1</sup>)

whose      which      how many      Cl      painting      (QP)

‘Whose paintings? Which one and how many of them?’

c. Taiwan Southern Min

siánn-lâng      toh      kuí      pak      tôo      (leh)

whose      which      how many      Cl      picture      (QP)

‘Whose paintings? Which one and how many of them?’

d. Hakka

ma<sup>24</sup> sa<sup>55</sup>      nai<sup>33</sup>      gi<sup>24</sup>      zhong<sup>53</sup>      fa<sup>33</sup>      (ne<sup>53</sup>)

whose      which      how many      Cl      picture      (QP)

‘Whose paintings? Which one and how many of them?’

I propose that, in these interrogative nominal expressions, the interpretable [Force] feature carried by the  $D_{\text{force}}$  head is specified as [Interrogative]. In Sinitic languages, this [Force: Interrogative] feature can be lexically realised by an overt or covert question particle (QP) as shown in (68) to (71). Moreover, as indicated in Section 3.2.2, one may wonder if there is any wh-movement within the nominal



domain of Sinitic languages. Since the interrogative is related to an inquiry for new information, it is reasonable to speculate that the [Foc\*] feature on the  $D_{\text{foc}}$  head would trigger the wh-movement.

According to the syntactic structure proposed in Section 2.1, the wh-words in (68) to (70) are assumed to be base-generated in different positions. More specifically, the wh-word *shéi* ‘whose’ is base-generated in the Spec of \**nP*, whereas the wh-word *nǎ* ‘which’ and the wh-word *jǐ* ‘how many’ are merged in the Spec of SP and the Spec of NumP respectively. As indicated in Section 2.2.2, possessors in nominal phrases are base-generated in the Spec of \**nP*, for its structural parallelism to clausal subjects; therefore, the wh-word *shéi* ‘whose’ is assumed to be base-generated in the Spec of \**nP* as well. As for the wh-word *nǎ* ‘which’, I assume it is merged in the Spec of SP, for the interrogative nominal phrase constructed by *nǎ* has to be answered by the nominal expression with specific meaning. This can be illustrated in (72) below.

- (72) A: nǐ      mǎi-le      **nǎ**      **běn shū?**  
           you    buy-Asp    which    Cl    book  
           ‘Which book did you buy?’
- B: wǒ      mǎi-le      **zhè běn shū/ nà běn shū/ Mǎlì de shū**  
           I      buy-Asp    this Cl book/ that Cl book/ Mary DE book  
           ‘I bought this book/ that book/ Mary’s book.’

As shown in Section 2.2.4, the wh-word *jǐ* ‘how many’ is merged in the Spec of NumP, for it can replace numerals as shown in (73).

- (73) a. jǐ                      ge    rén

how many Cl person

‘How many people?’

b. yī ge rén

one Cl person

‘One person’

c. \*jǐ yī ge rén

how many one Cl person

It is difficult to judge if any movement has occurred in examples (68) to (70) based on the surface order, since there is no reference point for comparison for single wh-questions. On the other hand, the order of the multiple wh-words in (71) indicates that there must be movements taking place. Then, one may speculate if these movements are triggered by the [+Foc\*] feature on the  $D_{\text{foc}}$  head.

Since multiple Specs are allowed in the current Minimalist framework, one may consider that the three wh-words, such as *shéi* ‘whose’, *nǎ* ‘which’ and *jǐ* ‘how many’ in (71a), all target the Specs of  $D_{\text{foc}}P$ . However, this is definitely not the case, since there is a fixed order for these multiple wh-words as shown in (74) below.

- (74) a. shéi      nǎ      jǐ      fú huà  
         whose      which      how many      Cl      paiting
- b. \*nǎ      shéi      jǐ      fú huà  
         which      whose      how many      Cl      paiting
- c. \*jǐ      shéi      nǎ      fú huà  
         how many      whose      which      Cl      paiting
- d. \*shéi      jǐ      nǎ      fú huà

|        |          |          |       |     |         |
|--------|----------|----------|-------|-----|---------|
|        | whose    | how many | which | Cl  | paiting |
| e. *nǎ |          | jǐ       | shéi  | fú  | huà     |
|        | which    | how many | whose | Cl  | paiting |
| f. *jǐ | nǎ       | shéi     | fú    | huà |         |
|        | how many | which    | whose | Cl  | paiting |

The above examples show a Superiority Effect in the nominal phrase. If they all targeted the Specs of  $D_{\text{foc}}P$ , such a fixed order would not be expected, for Rudin (1988a, 1988b) indicates that focus movement does not lead to Superiority Effects in multiple wh-questions, thereby explaining differences between Bulgarian and Serbo-Croatian multiple wh-questions. In other words, one should find a free word order as the multiple wh-questions in Russian observed by Stepanov (1998) if the movement were driven by focalisation.

Since the [+Foc\*] feature on the  $D_{\text{foc}}$  head does not trigger the movements in (71a), what leads to the fixed *shéi* 'whose' > *nǎ* 'which' > *jǐ* 'how many' order? As indicated in Section 2.12, in Sinitic languages both the movements of the possessor DP and the DemP are triggered by the [Def\*] feature on the  $D_{\text{def}}$  head. More precisely, the possessor DP is probed by the uninterpretable [Possessive] feature on the  $D_{\text{def}}$  head, whereas the DemP is probed by the uninterpretable [Deictic] feature on the  $D_{\text{def}}$  head. Given that Sinitic languages are generally considered as wh-in-situ languages in the clausal domain, I suggest that the possessor DP *shéi* 'whose' and the DemP *nǎ* 'which' do not undergo further movements from the Spec of  $D_{\text{def}}P$  in order to maintain the parallelism between Sinitic CP and DP. In other words, it is assumed that there is no wh-movement in the nominal domain of Sinitic languages. Overt movement of the wh-element does not occur because an interrogative operator (which can be overtly

realised by a question particle) is generated in the  $D_{force}$  head and it licenses and (unselectively) binds the wh-element. The current analysis is compatible to Hong's (2005) proposal that wh-words in wh-in-situ languages are pure indefinite pronouns devoid of an inherent interrogative feature and an uninterpretable form feature (or wh-feature). Following Hong's (2005) research, I assume that all the wh-elements in (71) are bound by the same binder by Multiple Binding in (75):

Hong (2005: 352; modified):

(75) Multiple Binding with a binder is a single simultaneous relation; Multiple Binding applies to all the variables (wh-expressions) simultaneously at LF.

In addition to the interrogative nominal phrases formed by wh-words, there are other types of interrogative nominal expressions, namely the *yes-no* interrogative nominal phrase and the disjunctive interrogative nominal phrase. Examples are provided in (76) and (77) respectively.

(76) a. Mandarin

yī      ge      rén      (mā)?

one    Cl    person    (QP)

‘One person?’

b. Cantonese

jat<sup>1</sup>    go<sup>3</sup>    jan<sup>2</sup>    (maa<sup>1</sup>)?

one    Cl    person    (QP)

‘One person?’

c. Taiwan Southern Min

tsit ê lâng (nih)?

one Cl person (QP)

‘One person?’

d. Hakka

rhít<sup>5</sup> sa<sup>55</sup> ngín<sup>55</sup> (me<sup>11</sup>)?

one Cl person (QP)

‘One person?’

(77) a. Mandarin

chá háishi kāfēi (ne)?

tea or coffee (QP)

‘tea or coffee?’

b. Cantonese

caa<sup>4</sup> ding<sup>6</sup> gaa<sup>3</sup>fe<sup>1</sup> (maa<sup>1</sup>)?

tea or coffee (QP)

‘tea or coffee?’

c. Taiwan Southern Min

tê ā-sī ka-pi (nih)?

tea or coffee (QP)

‘tea or coffee?’

d. Hakka

ca<sup>55</sup> rha<sup>33</sup>he<sup>11</sup> ga<sup>24</sup> bi<sup>24</sup> (mo<sup>55</sup>)?

tea or coffee (QP)

‘tea or coffee?’

Since (76) asks for a confirmation of the quantity, these examples are considered to be quantity-denoting nominal expressions as discussed in Section 3.2.2. Therefore, I assume that the numeral in these examples moves to the Spec of  $D_{\text{foc}}P$  to satisfy the [+Foc\*] feature on the  $D_{\text{foc}}$  head.

However, since the question particle appears at the phrase final position as the exclamative particle does as shown in (68), (69), (70), (71), (76) and (77), I assume that in interrogative nominal expressions the complement of  $D_{\text{force}}P$  moves to the Spec of  $D_{\text{force}}P$  to satisfy the [Force\*] feature on the  $D_{\text{force}}$  head as well.

The current analysis of interrogative nominal phrases seems to suggest that the meanings of the wh-words in Sinitic languages are determined in the nominal domain. However, since the wh-words in Sinitic languages (i.e. *jǐ*, *shéi* and *shéme* in Mandarin) can also acquire the meanings of a universal or an existential quantifier, I assume that the [Force] feature of the nominal phrases of this type is unspecified unless it is lexically realised by a particle. For example, the nominal phrase *jǐ ge rén* can mean either ‘some people’ or ‘how many people?’, whereas the nominal phrase *jǐ ge rén ne* can only mean ‘how many people?’.

Other than the exclamative and interrogative nominal phrases, I propose that there are imperative nominal phrases. In the imperative nominal phrases, the interpretable [Force] feature carried by the  $D_{\text{force}}$  head is specified as [Imperative] and the [Force\*] feature on the  $D_{\text{force}}$  head triggers the movement of its complement to its Spec position. As shown in (78) to (81), imperative nominal phrases are used to issue an order or request as their counterparts in the clausal domain.

(78) Mandarin

(During surgery)

Surgeon: shǒushùdāo

scalpel

‘Give me the scalpel.’

(79) Cantonese

(In the seafood department)

Customer: saam<sup>1</sup>man<sup>4</sup>jyu<sup>4</sup> bun<sup>3</sup> gan<sup>1</sup>, ngan<sup>4</sup>syut<sup>3</sup>jyu<sup>4</sup> jat<sup>1</sup> gan<sup>1</sup>

Salmon half 600g, Cod one 600g

‘Give me 300g of Salmon and 600g of Cod.’

(80) Taiwan Southern Min

(In a restaurant)

Customer: tsit uánn p̄ng

one Cl rice

‘Give me a bowl of rice.’

(81) Hakka

(In a box office)

Customer: liong<sup>24</sup> zhong<sup>53</sup> piau<sup>11</sup>

two Cl ticket

‘Two tickets’

The above examples could perhaps be considered as CPs rather than DPs. Take (80) for example. One may argue that it derives from the sentence *hōo guá tsit uánn p̄ng* ‘Give me a bowl of rice’ by a deletion process in the PF component. In other words,

one can argue that the DP moves to the Spec of ForceP of the entire clause and then the whole clause undergoes a deletion process similar to sluicing, leaving the DP in the Spec of ForceP only. However, this is not correct given the following examples:

(82) Customer: koh      tsít   uánn      p̄ng  
                   more    one    Cl        rice  
                   ‘One more bowl of rice.’

(83) Customer: koh      h̄o    guá   tsít      uánn      p̄ng  
                   more    give   me   one      Cl        rice  
                   ‘Give me another bowl of rice.’

(84) Customer: \*h̄o      guá   koh      tsít      uánn      p̄ng  
                   give    me    more   one      Cl        rice  
                   Intended meaning: ‘Give me another bowl of rice.’

Preposing the DP in (83) to the Spec of ForceP and then deleting the remaining parts of the sentence does not lead to (82). The ungrammaticality of (84) also suggests that the deletion hypothesis to derive (82) is wrong. As a result, these nominal phrases should not be considered as being embedded in elliptical structures; rather, the phrases we see are all there are.

Furthermore, from a theoretical perspective, the formation involving a derivation in the Narrow Syntax and a deletion in the PF component is less economic than that just involving the derivation in the Narrow Syntax. Therefore, according to the spirit of Minimalist Programme, examples (78) to (81) are better to be considered as DPs



rather than CPs.

If the particles are indeed in the nominal domain rather than in the clausal domain, it is predicted that they can appear within a nominal phrase that functions as a subject in a sentence. Such a prediction is borne out as shown in (85) below:

- (85) a. **tāmén sān ge (rén) a** kěnding huì lái  
they three Cl people EP certainly will come  
'They three people will certainly come!'
- b. **nà ge nǚshēng a** shì wǒ tóngxué  
that Cl girl EP Copula my classmate  
'That girl! She is my classmate.'
- c. **Zhāngsān mā** bú zài yē  
Zhangsan QP not at SFP  
'Zhangsan? He is not here.'
- d. wǒ xiǎng **jùfǎ hé yīnyùn ba** dōu hěn kùnnán  
I think syntax and phonology EP DOU very difficult  
'I think that both syntax and phonology are very difficult.'

In addition, it is found that the nominal phrase with a particle can appear after the disposal marker (i.e. *bǎ* in Mandarin) in the disposal construction as shown in (86) below:

- (86) **tā bǎ nà ge huàidàn a** shā le  
s/he BA that Cl scoundrel EP kill SFP  
'S/He killed that scoundrel!'

This also confirms my proposal that there are nominal-final particles in Sinitic languages.

To maintain a principled account of all nominal phrases, I propose that in all the nominal structures discussed from Section 2.3 to Section 2.12 the interpretable [Force] feature on the  $D_{\text{force}}$  head realised by a null particle is specified as [Declarative] and its complement moves to its Spec position because of the [Force\*] feature.

### 3.3 Topicalisation and Focalisation of NP

#### 3.3.1 Introduction

It is well-known that Sinitic languages have a canonical SVO order and that in Sinitic languages the numeral-classifier sequence generally precedes the noun as shown in sentence (87). However, it has also been noted that a noun (i.e. *bǐ* ‘pen’) can appear in a pre-numeral position as in sentence (88), a preverbal position as in sentence (89), and a sentence-initial position as in sentence (90). Concerning these four types of sentences, an important issue is how they are derived. More specifically, are they base-generated as distinct sentences or are they derivationally related to each other?

(87) tā mǎi-le shí zhī bǐ  
s/he buy-Asp ten Cl pen  
‘S/He bought ten pens.’

(88) tā mǎi-le bǐ shí zhī  
s/he buy-Asp pen ten Cl

‘(lit.) S/He bought pens ten.’

(89) tā bǐ mǎi-le shí zhī

s/he pen buy-Asp ten Cl

‘(lit.) S/He, pens, bought ten.’

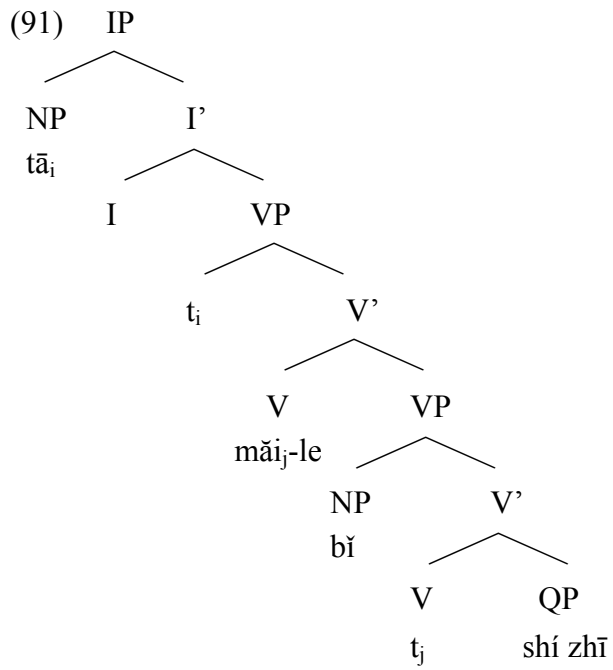
(90) bǐ tā mǎi-le shí zhī

pen s/he buy-Asp ten Cl

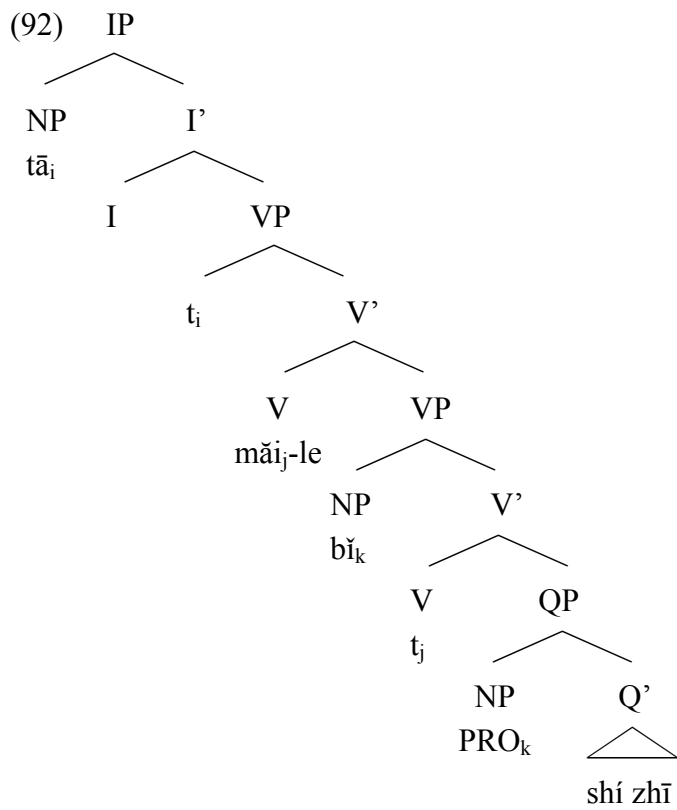
‘As for the pens, he bought ten.’

According to C.-C. Tang’s (1996) non-movement analysis, there are three different constructions in sentences (87), (88) and (90). In other words, these three examples are base-generated as distinct sentences. What C.-C. Tang suggests is that in sentence (88) the numeral-classifier sequence *shí zhī* is syntactically base-generated as an adjunct argument of the verb *mǎi* ‘buy’ and is semantically predicated of the object *bǐ* ‘pen’. This is illustrated in (91) or (92) below, where *t* denotes the positions out of which the subject NP and V move.

C.-C. Tang (1996: 474; modified):



C.-C. Tang (1996: 478; modified):



Note that (91) differs from (92) in that the predicative function of QP is represented by a PRO subject controlled by the object NP.

For sentence (90), C.-C. Tang maintains that the noun *bǐ* ‘pen’ is merged directly into the Spec of CP and is associated with a noun with a null spell-out within the postverbal nominal phrase, as shown in (93) where the letter *e* symbolises an empty category.

- (93) *bǐ<sub>i</sub> tā mǎi-le shí zhī e<sub>i</sub>*  
pen s/he buy-Asp ten Cl  
‘As for pens, s/he bought ten.’

However, within the framework of current Minimalist syntax, C.-C. Tang’s non-movement analysis has to assume that a noun with a null spell-out also appears within the postverbal nominal phrase in sentences (88) and (89) or that a mechanism of NP ellipsis for the object nominal phrases is involved in the derivation of sentences (88) and (89). Otherwise, the formation of the object nominal phrases will encounter a problem, for there are only extended functional projections (i.e. DP, NumP and ClP) but no lexical projection (i.e. NP). Even for C.-C. Tang, who assumes that classifiers subcategorise for NPs, it is not clear how the selection requirement can be satisfied if there is no NP within the nominal phrase. In order to resolve this difficulty, in this section, I will turn to the other end and argue for a movement account. That is, sentences (88) to (90) should be analysed as being transformationally derived from sentence (87). More specifically, I will argue that an NP (i.e. *bǐ* ‘pen’) can move to the left periphery of the sentence only after it moves to the left periphery of the nominal phrase. In other words, topicalisation or focalisation in the CP domain has to be

licensed by DP-internal topicalisation or focalisation respectively. This is not a new idea. For instance, Gavrusseva (2000) relates the accessibility of possessor extraction in the CP domain to the accessibility of the DP-internal movement of the possessor to the Spec of DP, and Aboh (2004) maintains that the Foc head in the CP domain attracts a nominal phrase that has been assigned focus in the DP domain.

### 3.3.2 Movement Account

C.-C. Tang's (1996) non-movement analysis can be further rejected given J. Wu's (1998) observation that topicalisation of NP in Mandarin Chinese shows island effects, as exemplified in (94) and (95) below, where *t* denotes the intended position out of which the NP moves.

- (94) \**bǐ<sub>i</sub>* Lǐsì juéde bù gāoxìng yīnwèi Zhāngsān mǎi-le shí zhī *t<sub>i</sub>*  
 pen Lisi feel not happy because Zhangsan buy-Asp ten Cl  
 Intended meaning: 'Lisi felt unhappy because Zhangsan bought ten pens'

- (95) \**bǐ<sub>i</sub>* Lǐsì bù xiāngxìn Zhāngsān mǎi-le shí zhī *t<sub>i</sub>* de shuōfǎ  
 pen Lisi not believe Zhangsan buy-Asp ten Cl DE claim  
 Intended meaning: 'Lisi doesn't believe the claim that Zhangsan bought ten pens'

Example (94) indicates that the topicalised noun (i.e. *bǐ* 'pen') cannot be associated with a numeral-classifier sequence (i.e. *shí zhī* 'ten Cl') inside an adjunct island, while example (95) shows that the topicalised noun cannot be associated with the numeral-classifier sequence in a complex NP island. The analysis proposed by C.-C. Tang (1996), shown in (93), fails to explain such island effects.

Moreover, unlike the sentence where the topic constituent is the whole nominal phrase, and, therefore, where the gap can be filled by a resumptive pronoun, as shown in (96), a resumptive pronoun cannot be inserted into the gap in sentences such as (90), as shown in (97).

(96) shí zhī bǐ Zhāngsān mǎi-le (tāmen)  
 ten Cl pen Zhāngsān buy-Asp them  
 ‘The ten pens, Zhāngsān bought them.’

(97) bǐ Zhāngsān mǎi-le shí zhī (\*tāmen)  
 pen Zhāngsān buy-Asp ten Cl (\*tāmen)  
 ‘As for pens, Zhāngsān bought ten.’

Therefore, I maintain that the NP undergoes a movement operation in the process of topicalisation. Given the fact that *tāmen* ‘they’ is a DP, one may suggest that the ungrammaticality of (97) is due to having a classifier selecting a DP as its complement. Nevertheless, as indicated in (98), a classifier selecting a DP is not in itself ungrammatical.

(98) Zhāngsān mǎi-le shí zhī [DP zhè zhǒng bǐ]  
 Zhāngsān buy-Asp ten Cl this kind pen  
 ‘Zhangsan bought ten of this sort of pens.’

Therefore, as shown by (97), the topic in (90) is not a left-dislocated NP. Instead, topicalisation discussed here involves movement preposing the NP.

Before discussing the derivation process with regards to the positions of nouns in sentences (87) to (90), I shall state clearly that I make the following two assumptions: (i) DP is a phase (Svenonius 2004; Radford 2004) and (ii) a particular layer of the CP, namely TopP, is available for a topicalised element found in the left periphery of the clause.

Sinitic languages have been argued to be topic-prominent languages by, for instance, Li and Thompson (1981) for Mandarin. Since SVO is the canonical word order for Sinitic languages, we need to assume that topicalisation is involved in OSV structures. As indicated in (ii), I assume that the landing site for the topicalised element is the Spec of TopP.

Given the assumption that DP is a phase and that topicalisation is involved in OSV structures, the direct extraction of a noun (i.e. *bǐ* ‘pen’) out of DP (i.e. *shí zhī bǐ* ‘ten pens’) to the left periphery of the sentence will violate the Phase Impenetrability Condition, no matter whether it is the strong version (Chomsky 2000: 108) in (99) or the weak version (Chomsky 2001: 14) in (100).

Chomsky (2000: 108):

(99) *Phase-Impenetrability Condition*

In a phase  $\alpha$  with head H, the domain of H is not accessible to operations outside  $\alpha$ , only H and its edge are accessible to such operations.

Chomsky (2001: 14; modified):

(100) The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations.

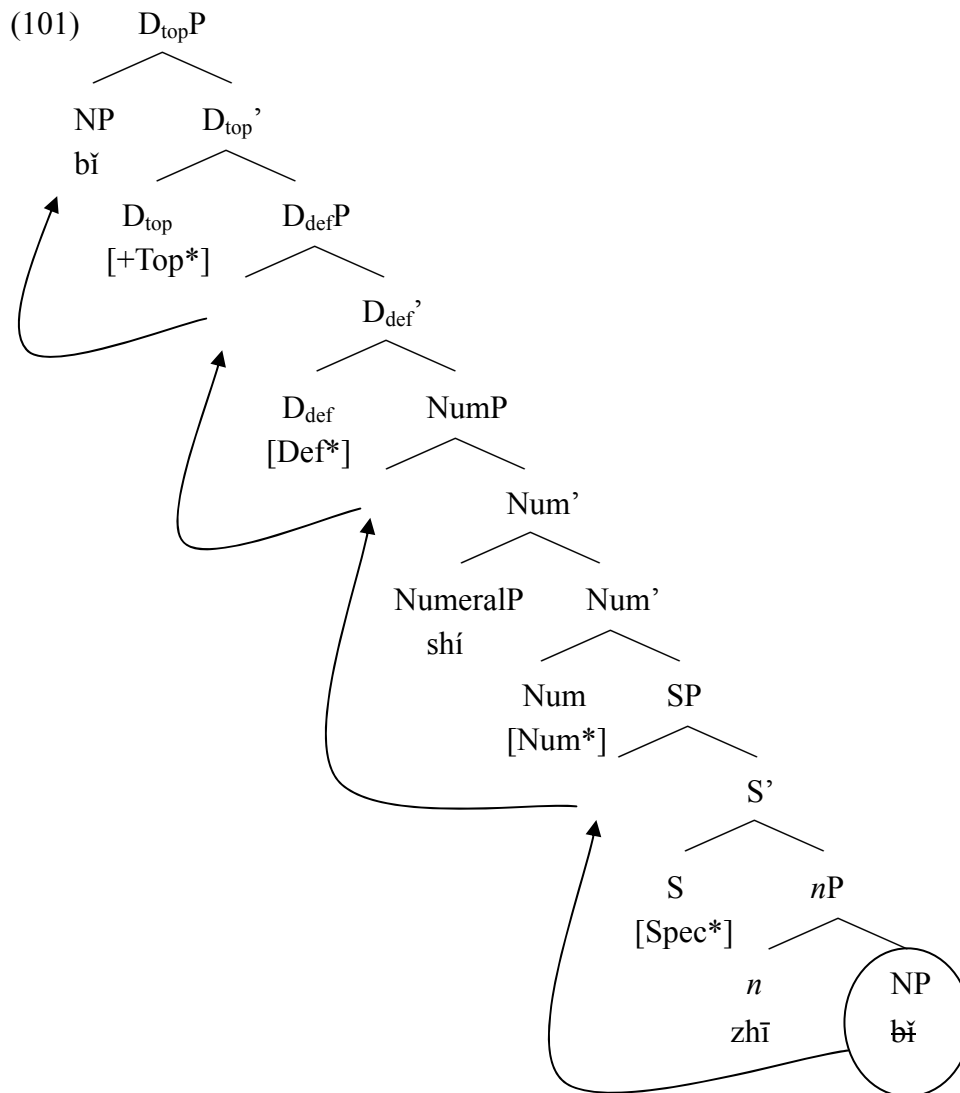
$$[_{ZP} Z^0 [_{XP} X^0 [_{HP} [H^0 [_{YP} Y^0 [_{WP} [W^0]]]]]]]]$$



To put it simply, the c-command domain of a phase head (i.e. D) is not visible or available to an external Probe (i.e. Top). In order to prevent this violation, I advocate that clausal topicalisation must be licensed by nominal topicalisation. In line with Gavrusseva (2000) and Aboh (2004), I suggest that in Sinitic languages the Spec of  $D_{top}$  is the escape hatch of the fronted NP. The order of the sentences (88) to (90) further demonstrates the successive-cyclic nature of topicalisation of the object NP in Sinitic languages. What I propose is that the interpretable [+Top\*] feature on the  $D_{top}$  head triggers the movement of the NP to its Spec position. Only after the object NP is moved to the left periphery of DP, deriving the NP-Numeral-Cl sequence as *bǐ shí zhī* in (88), is the topicalised NP then accessible to an external Probe (i.e. Top) in the clausal domain. As shown in sentences (89) and (90), the NP undergoing topicalisation further moves to the Spec of  $vP$  and finally reaches the Spec of TopP. These movements are further triggered by each interpretable [+Top\*] feature on the  $v$  head and the Top head.

Given the assumption that (87) is the sentence with canonical word order, now let us turn to the derivation of the topicalisation of NP, such as *bǐ* ‘pen’ in sentences (88) to (90). First of all, the NP *bǐ* ‘pen’ merges with a classifier *zhī* to become its complement. The functional head S then takes  $nP$  as its complement. The NP moves to the Spec of SP to satisfy the [Spec\*] feature on the S head. Next, the functional head Num merges with SP and the numeral *shí* ‘ten’ is merged into the Spec of NumP. The NP *bǐ* ‘pen’ then moves to the outer Spec of NumP because of the [Num\*] feature on the Num head. Further, a determiner with a null spell-out merges with the NumP. The [Def\*] feature on the  $D_{def}$  head then triggers the movement of NP to its Spec position. After the formation of  $D_{def}P$  and the merging of  $D_{top}$ , the [+Top\*] feature

carried by the  $D_{top}$  head triggers the movement of NP (*bǐ* ‘pen’) to its Spec position. The derivation is illustrated in (101), where the lower copy of the moved item is marked by strikethrough.<sup>16</sup>



<sup>16</sup> To save space, only the relevant functional projections in the nominal phrase are provided here. (101) has the fuller structure shown in (i) below:

(i)  $D_{force}P > D_{top}P > D_{foc}P > D_{top}P > D_{def}P > NumP > SP > nP > NP$

The landing site of the topicalised NP is the Spec of the higher  $D_{top}P$ . Furthermore, as proposed in Section 3.2.3, the higher  $D_{top}P$  moves to the Spec of  $D_{force}P$  to satisfy the [ $Force^*$ ] feature on the  $D_{force}$  head.

As it is at the edge of the derived DP, the NP is then accessible to an external Probe in the clausal domain. The grammaticality of (88) supports such an analysis. One may question the constituency of the NP-Numeral-Cl sequence (i.e. *bǐ shí zhī*) in (88). Nevertheless, as shown in (102), two NP-Numeral-Cl sequences can be co-ordinated together functioning as the object of the verb *mǎi* ‘buy’, suggesting that a NP-Numeral-Cl sequence does indeed form a constituent.

- (102)    *tā mǎi-le [DP bǐ shí zhī] [DP zhǐ wǔ zhāng]*  
           s/he buy-Asp    pen    ten Cl    paper five Cl  
           ‘S/He bought ten pens and five sheets of paper.’

Moreover, the topic status of the fronted NP can be further confirmed by the construction in (103), where the topic marker *-ne* is suffixed to the fronted NP.

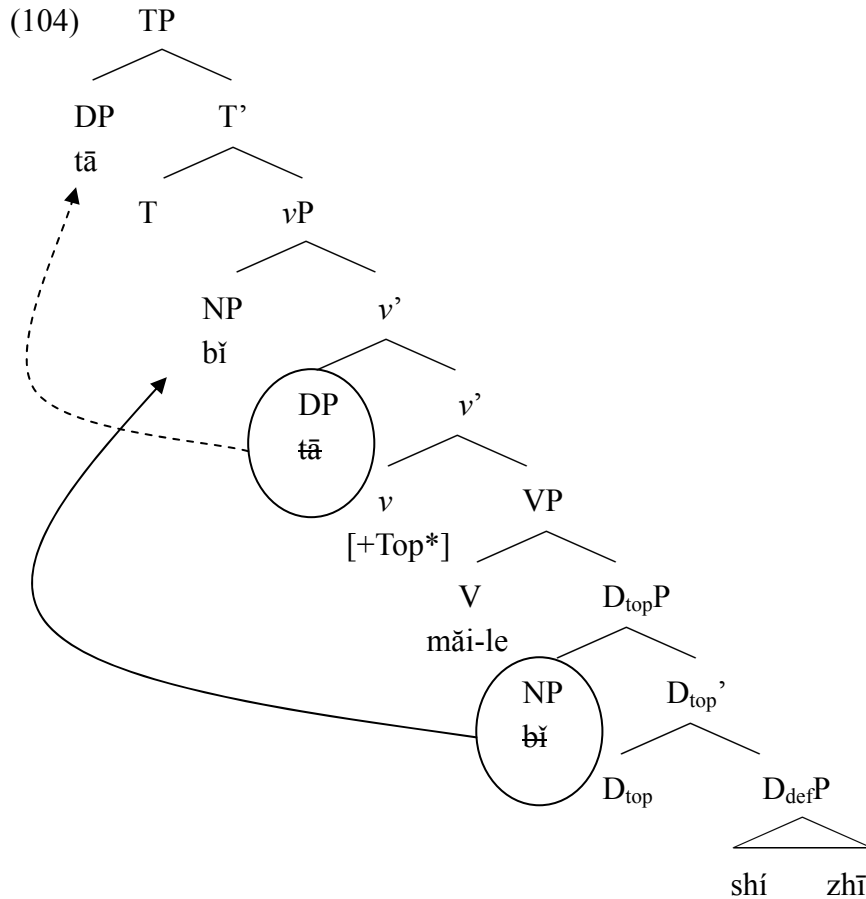
- (103)    *tā mǎi-le      bǐ-ne      shí zhī*  
           s/he buy-Asp    pen-Top ten Cl  
           ‘S/He bought ten pens.’

Next, since the transitive *vP* also forms a phase, the NP must move to the Spec of *vP* in order to be reachable to the external Probe, Topic. The NP moves because of the interpretable [+Top\*] feature carried by the transitive *v*.<sup>17</sup> The well-formed

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<sup>17</sup> Paul (2002, 2005) argues that in Chinese there is an internal TopicP, which is below TP but above *vP*, for the preposed object. Here for simplification I treat it as an interpretable [+Top\*] feature carried by the transitive *v*.

sentence (89), which has the stage of derivation shown in (104)<sup>18</sup>, conforms to the current analysis.



Finally, at the stage of derivation shown in (105)<sup>19</sup>, the interpretable [+Top\*]

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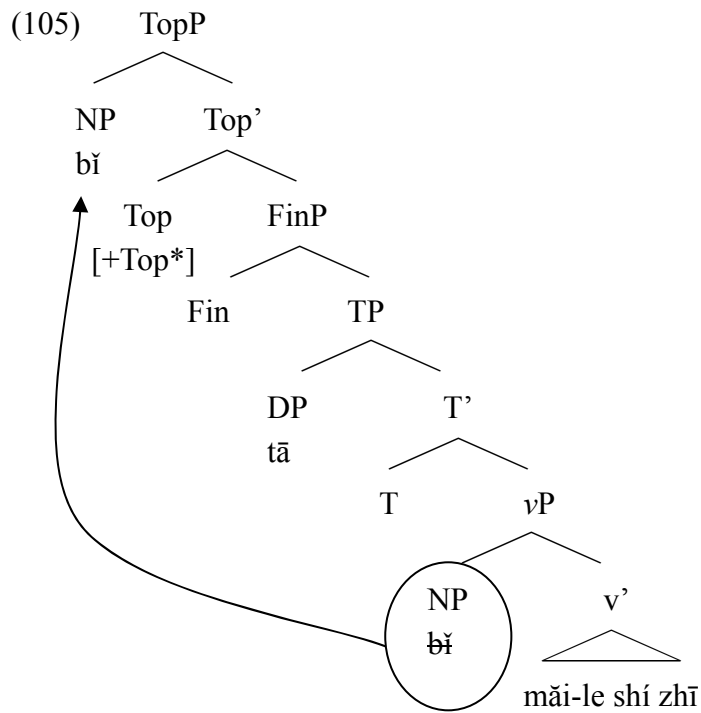
<sup>18</sup> To save space, only the relevant functional projections at the left periphery of the nominal phrase, namely the higher  $D_{top}P$  and  $D_{def}P$ , are provided here. The left periphery of the nominal phrase in (104) has the fuller structure shown in (i) below:

(i)  $D_{force}P > D_{top}P > D_{foc}P > D_{top}P > D_{def}P$

The landing site of the topicalised NP is the Spec of the higher  $D_{top}P$ . Moreover, as proposed in Section 3.2.3, the higher  $D_{top}P$  moves to the Spec of  $D_{force}P$  to satisfy the [Force\*] feature on the  $D_{force}$  head.

<sup>19</sup> To save space, only the relevant functional projections at the left periphery of the clause, namely the higher TopP and FinP, are provided here. The left periphery of the clause in (105) has the fuller structure shown in (i) below:

feature on the functional head Topic then attracts the NP to its Spec position to derive (90).



As demonstrated above, topicalisation in the CP domain of Sinitic languages indeed involves DP-internal topicalisation.

Furthermore, the extracted NP and its associated numeral-classifier sequence can be separated from each other by one or more clauses, as shown in (106) and (107) below.

|       |     |      |      |          |         |     |     |
|-------|-----|------|------|----------|---------|-----|-----|
| (106) | bǐ  | Lǐsì | shuō | Zhāngsān | mǎi-le  | shí | zhī |
|       | pen | Lǐsì | say  | Zhāngsān | buy-Asp | ten | Cl  |

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(i) ForceP>TopP>FocP>TopP>FinP

The final landing site of the topicalised NP is the Spec of the higher TopP.

‘Lǐsì said that Zhāngsān bought ten pens.’

- (107) bǐ wǒ jìdé Lǐsì shuō Zhāngsān mǎi-le shí zhī  
pen I remember Lǐsì say Zhāngsān buy-Asp ten Cl  
‘I remember that Lǐsì said that Zhāngsān bought ten pens.’

According to the current account, this is predictable, since topicalisation, being an instance of A-bar movement, voids any locality conditions by means of successive-cyclic movement.

The proposed analysis is not limited to the extraction of the object NP. The NP within the subject nominal phrase can also undergo the process of topicalisation, as shown in (108) and (109).

- (108) a. shí zhī bǐ jiù gòu le  
ten Cl pen then enough SFP  
‘Ten pens will be fine.’

- b. bǐ shí zhī jiù gòu le  
pen ten Cl then enough SFP  
‘(lit.) Pens, ten will be fine.’

- (109) a. yí piàn piàn xuěhuā piāosàn zài kōng zhōng  
one Cl Cl snowflake float in sky middle  
‘Snowflakes float in the sky.’

- b. xuěhuā yí piàn piàn piāosàn zài kōng zhōng  
snowflake one Cl Cl float in sky middle

‘Snowflakes float in the sky.’

Similarly, the direct extraction of the noun out of the subject DP to the left periphery of the sentence will violate the Phase Impenetrability Condition. As a result, only after the NP within the subject has moved to the edge of DP, deriving the NP-Numeral-Cl sequence (i.e. *bǐ shí zhī*), is the topicalised NP then accessible to an external Probe (i.e. Topic) in the clausal domain.

Alternatively, (89) can be considered as a sentence involving the process of focalisation given its SOV order.<sup>20</sup> Likewise, given the assumption that DP is a phase, the direct extraction of NP (i.e. *bǐ* ‘pen’) out of DP (i.e. *shí zhī bǐ* ‘ten pens’) to the Spec of FocP will violate the Phase Impenetrability Condition in either (99) or (100). As a result, only after the extracted NP has moved to the left periphery of DP, namely the Spec of  $D_{\text{foc}}\text{P}$ , deriving the NP-Numeral-Cl sequence (i.e. *bǐ shí zhī*), is the focalised NP then accessible to an external Probe, namely the Foc head, in the clausal domain. Similarly, I assume that the interpretable [+Foc\*] feature on the  $D_{\text{foc}}$  head triggers the movement of the NP to its Spec position. The NP then moves further to the Spec of FocP via the Spec of  $\nu\text{P}$ , which is triggered by each interpretable [+Foc\*] feature on the  $\nu$  head and the Foc head.

The aforementioned process of topicalisation or focalisation in the nominal domain of Mandarin can be found in the other three Sinitic languages as well. Examples are provided below:

#### (110) Cantonese

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<sup>20</sup> The SOV construction has been regarded as a focus structure by Shyu (1995, 2001) and Ernst and Wang (1995) among many others. In contrast, Ting (1995) and Paul (2002, 2005) argue that the preposed object is topicalised rather than focalised.

a. **zaap<sup>6</sup>zi<sup>3</sup> hou<sup>2</sup> do<sup>1</sup> dou<sup>1</sup> hou<sup>2</sup> maai<sup>6</sup>-dak<sup>1</sup>**  
magazine so many also well sell-Asp

‘(lit.) magazines many also sell well.’

b. **ngo<sup>5</sup> maai<sup>5</sup>-zo<sup>2</sup> bat<sup>1</sup> sap<sup>6</sup> zi<sup>1</sup>**  
I buy-Asp pen ten Cl

‘(lit.) I bought pens ten.’

Yip and Matthews (2000b: 51; modified):

c. **tau<sup>4</sup>zoeng<sup>2</sup> sung<sup>3</sup> gei<sup>1</sup>piu<sup>3</sup> leong<sup>5</sup> zoeng<sup>1</sup>**  
first prize give air ticket two Cl

‘The first prize is two free air tickets.’

(111) Taiwan Southern Min

a. **pñg sann uánn tō ū-kàu ah**  
rice three bowl then enough SFP

‘(lit.) Rice, three bowls will be fine.’

b. **guá tsóng-kiōng tsiáh pñg sann uánn bê nñg uánn**  
I in total eat rice three bowl porridge two bowl

‘I ate three bowls of rice and two bowls of rice porridge in total.’

(112) Hakka

a. **pon<sup>33</sup> sam<sup>53</sup> von<sup>24</sup> dong<sup>53</sup> ziuk<sup>5</sup> le<sup>53</sup>**  
rice three bowl quite enough SFP

‘(lit.) Rice, three bowls is quite enough.’

b. **ñai<sup>55</sup> zung<sup>24</sup> kiung<sup>33</sup> shit<sup>2</sup>-tet<sup>5</sup> pon<sup>33</sup> sam<sup>53</sup> von<sup>24</sup> moi<sup>55</sup> liong<sup>24</sup> von<sup>24</sup>**  
I in total eat-Asp rice three bowl porridge two bowl



‘I ate three bowls of rice and two bowls of rice porridge in total.’

### 3.3.3 Interim Conclusion

This section has discussed the derivation of four types of sentence, exemplified by sentences (87) to (90). In contrast to C.-C. Tang’s (1996) non-movement analysis, I propose a unified transformational account in terms of DP-internal topicalisation or focalisation. Such a proposal can better account for the island effects observed by J. Wu (1998). The main idea is that, in Sinitic languages, an NP can be extracted to the left periphery of the sentence only after it moves to the left periphery of the nominal phrase. It is shown that the edge of the nominal phrase fulfils the same grammatical role as that of the clause – both encode topicality and focality. The parallelism between CP and DP is shown to hold as well at the level of information structure. On the other hand, one might ask if there is any constraint on DP-internal movements, such as the Left Branch Condition. I will turn to this issue in the next section.

## 3.4 Possessor Raising

### 3.4.1 Introduction

Ross (1986) proposes the Left Branch Condition, which blocks movement of the leftmost constituent of a nominal phrase. This condition has been used in the literature to block extraction of possessors. This is shown for English in (113). It also appears to hold in Sinitic languages as shown in (114).<sup>21</sup>

(113) \*Grissom<sub>i</sub>, I like [t<sub>i</sub> father].

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<sup>21</sup> In (111) and (112), *t* indicates the potential position out of which the possessor DP moves.

(114) a. Mandarin

\***Gěruisēn<sub>i</sub>** wǒ xǐhuān [<sub>t<sub>i</sub></sub> bàba]

Grissom I like father

Intended meaning: ‘Grissom, I like his father.’

b. Cantonese

\***Grissom<sub>i</sub>** ngo<sup>5</sup> zung<sup>1</sup>ji<sup>3</sup> [<sub>t<sub>i</sub></sub> baa<sup>4</sup>baa<sup>1</sup>]

Grissom I like father

Intended meaning: ‘Grissom, I like his father.’

c. Taiwan Southern Min

\***Liú-ko<sub>i</sub>** guá kah-ì [<sub>t<sub>i</sub></sub> sió-muē]

Liu-ko I like younger sister

Intended meaning: ‘Liu-ko, I like his younger sister.’

d. Hakka

\***A<sup>53</sup>min<sup>55</sup><sub>i</sub>** nga<sup>55</sup> zhung<sup>11</sup>rhi<sup>11</sup> [<sub>t<sub>i</sub></sub> a<sup>53</sup>zi<sup>24</sup>]

Amin I like elder sister

Intended meaning: ‘Amin, I like his elder sister.’

However, the extraction of the possessor is not always impossible in Sinitic languages. There are three contexts where possessor raising can be found on the surface forms, namely the unaccusative verb construction, the multiple nominative construction<sup>22</sup>, and the disposal construction. Examples are provided in (115) to (117) respectively (with *t* indicating the position out of which the possessor DP moves).

Unaccusative verb construction:

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<sup>22</sup> It is also known as the double subject sentence in the literature.

(115) a. Mandarin

**Wángmiǎn<sub>i</sub>** sǐ-le [t<sub>i</sub> fùqīn]

Wangmian die-Asp father

‘Wangmian lost his father.’

b. Cantonese

**Grissom<sub>i</sub>** sei<sup>2</sup>-zo<sup>2</sup> [t<sub>i</sub> baa<sup>1</sup>baa<sup>1</sup>]

Grissom die-Asp father

‘Grissom lost his father.’

c. Taiwan Southern Min

**Liú-ko<sub>i</sub>** sí [t<sub>i</sub> lāu-pē]

Liu-ko die father

‘Liu-ko lost his father.’

d. Hakka

**A<sup>53</sup>min<sup>55</sup><sub>i</sub>** si<sup>24</sup>-tet<sup>5</sup> [t<sub>i</sub> a<sup>53</sup>ba<sup>53</sup>]

Amin die-Asp father

‘Amin lost his father.’

Multiple nominative construction:

(116) a. Mandarin

**Gěruìsēn<sub>i</sub>** zuìjìn/yòu [t<sub>i</sub> tóu] tòng

Grissom recently/again head ache

‘Grissom’s head was aching recently/again.’

b. Cantonese

**Grissom<sub>i</sub>** zeoi<sup>3</sup>gan<sup>6</sup>/jau<sup>6</sup> [t<sub>i</sub> tau<sup>4</sup>] tung<sup>3</sup>

Grissom recently/again head ache

‘Grissom’s head was aching recently/again.’

c. Taiwan Southern Min

**Liú-ko<sub>i</sub>** tsuè-kūn/koh [t<sub>i</sub> thâu-khak] thiànn

Liu-ko recently/again head ache

‘Liu-ko’s head was aching recently/again.’

d. Hakka

**A<sup>53</sup>min<sup>55</sup><sub>i</sub>** zui<sup>11</sup>kiun<sup>33</sup>/rhiu<sup>33</sup> [t<sub>i</sub> teu<sup>55</sup>na<sup>55</sup>] tung<sup>11</sup>

Amin recently/again head ache

‘Amin’s head was aching recently/again.’

Disposal construction:<sup>23</sup>

(117) a. Mandarin

Gěruisēn bǎ **Níkè<sub>i</sub>** (hěnhěndì) dǎ-shāng-le [t<sub>i</sub> shǒu]

Grissom BA Nick severely hit-hurt-Asp hand

‘Grissom (severely) hurt Nick’s hand.’

b. Cantonese

ngo<sup>5</sup> zoeng<sup>1</sup> [**go<sup>3</sup> caang<sup>2</sup>**]<sub>i</sub> mit<sup>1</sup>-zo<sup>2</sup> [t<sub>i</sub> pei<sup>4</sup>]

I ZOENG Cl orange peel-Asp skin

‘I peeled the orange.’

c. Taiwan Southern Min

Liú-ko kǎ **Ông-ko<sub>i</sub>** (tuā-lát) siàn [t<sub>i</sub> tshuì-phué]

Liu-ko KA Ông-ko forcefully slap cheek

‘Liu-ko (forcefully) slapped Ông-ko’s cheek.’

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<sup>23</sup> In the literature of Chinese linguistics, the disposal construction of Mandarin is usually referred as the *bǎ* construction.

d. Hakka

nga<sup>55</sup> lau<sup>53</sup> **gam<sup>53</sup>er<sup>55</sup>**<sub>i</sub> bok<sup>5</sup>-tet<sup>5</sup> [t<sub>i</sub> pi<sup>55</sup>]

I LAU orange peel-Asp skin

‘I peeled the orange.’

Furthermore, (114) becomes acceptable once a pronoun that is co-referent with the moved element is inserted, as exemplified in (118). This is of course also true in English as shown in (119).

(118) a. Mandarin

**Gěruisēn<sub>i</sub>** wǒ xǐhuān [tā<sub>i</sub> bàba].

Grissom I like his father

‘Grissom, I like his father.’

b. Cantonese

**Grissom<sub>i</sub>** ngo<sup>5</sup> zung<sup>1</sup>ji<sup>3</sup> [**keoi<sup>5</sup>**<sub>i</sub> baa<sup>4</sup>baa<sup>1</sup>]

Grissom I like his father

‘Grissom, I like his father.’

c. Taiwan Southern Min

**Liú-ko<sub>i</sub>** guá kah-ì [**in<sub>i</sub>** sió-muē]

Liu-ko I like his younger sister

‘Liu-ko, I like his younger sister.’

d. Hakka

**A<sup>53</sup>min<sup>55</sup>**<sub>i</sub> nga<sup>55</sup> zhung<sup>11</sup> rhi<sup>11</sup> [**gi<sup>55</sup>**<sub>i</sub> a<sup>53</sup>zi<sup>24</sup>]

Amin I like his elder sister

‘Amin, I like his elder sister.’

(119) **Grissom**<sub>i</sub>, I like [**his**<sub>i</sub> father].

Given the above examples, I intend in this section to provide a new argument for the existence of possessor raising in Sinitic languages (cf. Cheng and Ritter 1988 on the disposal construction of Mandarin; Huang 1982 on the multiple nominative construction of Mandarin; Huang 2008 on the disposal construction of Mandarin; Hsu and Ting 2006 on the multiple nominative construction of Mandarin; Yoon 1990 on the disposal construction of Mandarin; Xu 1993, 2004/2005 on the multiple nominative construction and the disposal construction of Mandarin). Furthermore, it will be shown that the pronouns *ta*, *keoi*<sup>5</sup>, *in*, and *gi*<sup>55</sup> in (118) are resumptive pronouns that are inserted as a last resort to avoid a visibility condition on an extracted possessor at the PF component.

### 3.4.2 The Existence of Possessor Raising

As mentioned in Section 3.4.1, in Sinitic languages there are three contexts where possessor raising can easily be found on the surface forms, namely the unaccusative verb construction as in (120), the multiple nominative construction as in (121), and the disposal construction as in (122).

(120) [<sub>DP</sub> **Gěruisēn**] (xiǎnrán) sǐ-le [<sub>DP</sub> bàba]<sup>24</sup>

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<sup>24</sup> Note that it is also possible to move the entire nominal phrase *Gěruisēn bàba* ‘Grissom’s father’ to the subject position as in (i):

(i) [<sub>DP</sub> Gěruisēn bàba] (xiǎnrán) sǐ-le  
 Grissom’s father (apparently) die-Asp  
 ‘Grissom’s father (apparently) died.’

Grissom (apparently) die-Asp father  
 ‘Grissom (apparently) lost his father.’

(121) [DP **Gěruisēn**] (xiǎnrán) [DP bàba] (xiǎnrán) xǐhuān Shālā  
 Grissom apparently father apparently like Sara  
 ‘Grissom’s father (apparently) likes Sara.’

(122) Gěruisēn bǎ [DP **Níkè**] (hěnhěndì) dǎ-shāng-le [DP shǒu]<sup>25</sup>  
 Grissom BA Nick severely hit-hurt-Asp hand  
 ‘Grissom (severely) hurt Nick’s hand.’

In addition, the marker *de* in (123) and (124) indicates that the possessor is within the nominal domain. When the possessor is forced to be within the nominal domain, a sentential adverb such as *xiǎnrán* ‘apparently’ cannot intervene between the possessor marked with the particle *de* and the possessee.

(123) [DP **Gěruisēn** (\*xiǎnrán) de bàba] (xiǎnrán) sǐ-le  
 Grissom apparently DE father apparently die-Asp

As observed by Teng (1974), there is a meaning difference between (120) and (i). In (i), when the event of death occurred, Grissom may have been dead or alive; however, Grissom was alive when the event occurred in (120).

<sup>25</sup> Note that it is also possible to move the entire nominal phrase *Níkè shǒu* ‘Nick’s hand’ to the position following *bǎ* as in (i):

(i) Gěruisēn bǎ [DP **Níkè shǒu**] (hěnhěndì) dǎ-shāng-le  
 Grissom BA Nick’s hand severely hit-hurt-Asp  
 ‘Grissom (severely) hurt Nick’s hand.’

‘Grissom’s father (apparently) died.’

- (124) [DP **Gěruìsēn** (\*xiǎnrán) de bàba] (xiǎnrán) xǐhuān Shālā  
Grissom apparently DE father apparently like Sara  
‘Grissom’s father (apparently) likes Sara.’

On the contrary, as indicated in (121), the insertion of the sentential adverb *xiǎnrán* ‘apparently’ between the possessor and the possessee is allowed when there is no *de* marker. Hence, (121) shows a context of possessor raising. Moreover, as shown in (122), the possessor and the possessee do not form a constituent in the disposal construction. This further confirms the existence of possessor extraction in Mandarin. Therefore, it casts doubt on the validity of the Left Branch Condition in Sinitic languages.

### 3.4.3 The Constraint on Possessor Raising

Since in Sinitic languages possessor raising does exist, as exemplified in sentences (120) to (122), one may ask why it is blocked in (114), repeated as (125) below (with *t* indicating the potential position out of which the possessor DP moves):

- (125) \***Gěruìsēn**<sub>i</sub> wǒ xǐhuān [t<sub>i</sub> bàba].  
Grissom I like father  
Intended meaning: ‘Grissom, I like his father.’

As pointed out by Ting (2008), this is due to the fact that the possessor cannot first



target an A-bar position in the left periphery of the DP.<sup>26</sup> Therefore, the possessor cannot further undergo the process of topicalisation to the sentence-initial position. According to Hsu and Ting (2006), possessor raising is an instance of A-movement. It is allowed in the formation of the multiple nominative constructions exemplified in (116) and (121). According to Sakai (1994), the multiple nominative position is an A-position, which is sensitive to minimality. As a result, possessor raising cannot lead to a multiple nominative construction in (125), for the possessor DP *Gěruìsēn* ‘Grissom’ which raises out of the object DP to the Spec of recursive TP will cross over the intervening subject DP *wǒ* ‘I’ situated in the Spec of lower TP, leading to a violation of Rizzi’s (1990) Relativised Minimality (cf. Huang 1982). On the contrary, when the possessor DPs in (116) and (121) raise out of the subject DP to the Spec of higher recursive TP, there is no such violation. Although neither Hsu and Ting (2006) nor Ting (2008) mentions possessor raising in the unaccusative verb construction or the disposal construction, Hsu and Ting’s analysis of possessor raising in the multiple nominative construction can be applied to these two constructions. For instance, the extraction of possessor from the complement of the unaccusative verb (i.e. *sǐ* ‘die’) to the Spec of TP in (115) does not violate the Relativised Minimality. Similarly, in the disposal construction, the movement of possessor from the object DP to the post-*bǎ* position does not cross any intervening DP. Therefore, there is no Relativised Minimality violation.

However, Hsu and Ting’s (2006) A-movement analysis of possessor raising cannot explain why (114) becomes acceptable once a resumptive pronoun co-referent with the extracted possessor is inserted as shown in (118). It is illustrated again in

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<sup>26</sup> Following M.-L. Hsieh (2008), Ting (2008) assumes that the possessor has to target the Spec of KP in the left periphery of the DP first.

(126) below:

(126) **Gěruisēn**<sub>i</sub> wǒ xǐhuān [tā<sub>i</sub> bàba].

Grissom I like his father

‘Grissom, I like his father.’

Example (126) indicates that possessor raising may also involve A-bar movement, namely topicalisation. In the following section, the emergence of resumptive pronouns and the constraint on the use of them will be discussed. In addition, it will be shown that possessor raising involves not only A-movement but also A-bar movement to the left periphery of the clause.

#### 3.4.4 Possessor Raising and Resumptive Pronoun

In line with Hornstein’s (2001) proposal that the use of resumptive pronoun within the grammar is the ‘last resort’<sup>27</sup>, Kuo and Lin (2008) propose that the emergence of the resumptive pronoun in (126) is due to a violation of a spell-out condition in the PF component on the possessor-raising chain. I further extend their analysis of Mandarin to the other three Sinitic languages and revise the spell-out condition to the one stated in (127).

(127) Possessor-Raising Chain Visibility Condition in Sinitic languages:

At PF, a possessor-raising chain in a non-embedded clause has to be made ‘visible’ in each spell-out domain.

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<sup>27</sup> Hornstein (2001) argues that resumptive pronouns are not items of the lexical array. In other words, resumptive pronouns are not independently merged in the numeration. It is simply a grammatical formative inserted in the structure at the PF component.

In line with Chomsky's (2000) strict version of the Phase Impenetrability Condition in (128), the spell-out domain in (127) is defined as the complement of a phase head or the root clause.

Chomsky (2000: 108):

(128) *Phase-Impenetrability Condition*

In a phase  $\alpha$  with head H, the domain of H is not accessible to operations outside  $\alpha$ , only H and its edge are accessible to such operations.

To put it simply, the Phase Impenetrability Condition in (128) requires material in the complement of the phase head become inaccessible as soon as the phase is completed.

According to the Possessor-Raising Chain Visibility Condition, in a non-embedded clause a resumptive pronoun is required when a lower copy of the possessor-raising chain is in a different spell-out domain than the other copies. The possessor-raising chain is identified to the Spell-Out by the interpretable [Possessive] feature on each copy of the possessor DP. In other words, the Possessor-Raising Chain Visibility Condition requires the interpretable [Possessive] features to be spelt out by the PF component in each spell-out domain in a non-embedded clause. That is to say, the emergence of resumptive pronouns is constrained by phases. For instance, (114) becomes acceptable when a resumptive pronoun is inserted as shown in (118). As illustrated in (129), where material in *outline* signifies a different spell-out domain, the lowest copy of the possessor raising chain is in a different spell-out domain than the higher copies; hence, a resumptive pronoun has to be inserted to rescue the violation of the Possessor-Raising Chain Visibility Condition.

(129) [<sub>CP</sub> **Gěruìsēn**<sub>i</sub> [<sub>TP</sub> wǒ [<sub>vP</sub> t<sub>i</sub> [<sub>vP</sub> xǐhuān [<sub>DP</sub> tā<sub>i</sub> bàba]]]]]

Grissom I like his father

‘Grissom, I like his father.’

In contrast, the insertion of resumptive pronoun in the case of the possessor raising in the disposal construction is not necessary, for the two copies of the possessor raising chain are in the same spell-out domain as shown in (130), where material in *outline* signifies a different spell-out domain.<sup>28</sup>

(130) \*[[<sub>TP</sub> Gěruìsēn [<sub>vP</sub> bǎ [<sub>vP</sub> [<sub>DP</sub> Níkè<sub>i</sub>] dǎ-shāng-le [<sub>DP</sub> tā<sub>i</sub> shǒu]]]]]

Grissom BA Nick hit-hurt-Asp his hand

Intended meaning: ‘Grissom hurt Nick’s hand.’

Since the insertion of a resumptive pronoun is costly, it is prohibited when it is not necessary. For the same reason, when the possessor in (115) raises out from the complement of the unaccusative verb (i.e. *sǐ* ‘die’) to the Spec of TP to become the subject of the sentence, the use of resumptive pronoun, as illustrated in (131), is also not allowed.

(131) \*[[<sub>TP</sub> **Gěruìsēn**<sub>i</sub> [<sub>vP</sub> sǐ-le [<sub>DP</sub> tā<sub>i</sub> bàba]]]]

Grissom die-Asp his father

Intended meaning: ‘Grissom lost his father.’

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<sup>28</sup> Sybesma (1999) proposes that *bǎ* is in the higher *v* position of a recursive *vP*. Here it is assumed that only the higher *v* is a phase head. In other words, the lower *vP* and *VP* are in the same spell-out domain.

The  $\nu$ P in the unaccusative verb construction is not a phase, so both copies of the possessor-raising chain are within the same spell-out domain. Therefore, the insertion of a resumptive pronoun is prohibited.

Moreover, the current analysis predicts that once the possessor moves across a higher phase head, the insertion of the resumptive pronoun will be allowed again. The prediction is borne out as shown in (132) to (134), where material in different fonts signifies different spell-out domains.<sup>29</sup>

(132) [<sub>TopP</sub> **Gěruisēn**<sub>j</sub> [<sub>FinP</sub> [<sub>TP</sub> [<sub>DP</sub> t<sub>j</sub> bāba]<sub>i</sub> [<sub>νP</sub> t<sub>i</sub> [<sub>VP</sub> xīnuān Shāfā]]]]]

Grissom his father like Sara

‘As for Grissom, his father likes Sara.’

(133) [<sub>TopP</sub> **Gěruisēn**<sub>i</sub> [<sub>FinP</sub> [<sub>TP</sub> t<sub>i</sub> [<sub>νP</sub> sǐ-le [<sub>DP</sub> t<sub>i</sub> bāba]]]]]

Grissom he die-Asp father

‘As for Grissom, he lost his father.’

(134) [<sub>TopP</sub> **Níkè**<sub>i</sub> [<sub>FinP</sub> [<sub>TP</sub> Gěruisēn [<sub>νP</sub> ba [<sub>νP</sub> t<sub>i</sub> [<sub>VP</sub> dǎ-shāng-le [<sub>DP</sub> t<sub>i</sub> shǒu]]]]]]]

Nick Grissom BA he hit-hurt-Asp hand

‘As for Nick, Grissom hurt his hand.’

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<sup>29</sup> To save space, only the relevant functional projections at the left periphery of the clause, namely the higher TopP and FinP, are provided here. The left periphery of the clause in (132) to (134) has the fuller structure shown in (i) below:

(i) ForceP>TopP>FocP>TopP>FinP

The final landing site of the possessor DP is the Spec of the higher TopP.

Since the possessor moves across another phase head, namely Fin, to the Spec of TopP, and hence the possessor is in another spell-out domain, a resumptive pronoun has to be inserted because of the Possessor-Raising Chain Visibility Condition.

However, as defined in (127), the Possessor-Raising Chain Visibility Condition only applies to the non-embedded clause. For instance, as shown in (135), when the possessor moves to the next spell-out domain from an embedded clause, multiple resumptive pronouns in long-distance movement are prohibited.

- (135) **Shālā<sub>i</sub>** Níkè (\*tā<sub>i</sub>) shuō (\*tā<sub>i</sub>) Gěruisēn xǐhuān tā<sub>i</sub> fùqīn  
 Sara Nick (she) say (she) Grissom like she father  
 ‘Sara, Nick said that Grissom likes her father.’

Moreover, as indicated in (136), when the possessor moves from its base position via the left periphery of the nominal phrase to a root clause, multiple resumptive pronouns within the nominal domain in long-distance movement are prohibited.

- (136) **Shālā<sub>i</sub>** Gěruisēn mǎi-le [<sub>TopP</sub> tā<sub>i</sub> [<sub>DefP</sub> nà [<sub>NomP</sub> sān [<sub>NP</sub> (\*tā<sub>i</sub>) zhī [<sub>NP</sub> tǎ<sub>i</sub>]]]]]<sup>30</sup>

<sup>30</sup> To save space, only the copies of possessor-raising chain in the base position and the target position in the nominal domain are provided here. (136) has the fuller structure shown in (i) below, with the path of the extracted possessor within the nominal domain illustrated.

- (i) **Shālā<sub>i</sub>** Gěruisēn mǎi-le [<sub>TopP</sub> tā<sub>i</sub> [<sub>DefP</sub> nà [<sub>NomP</sub> (\*tā<sub>i</sub>) sān [<sub>SP</sub> (\*tā<sub>i</sub>) [<sub>NP</sub> (\*tā<sub>i</sub>) zhī [<sub>NP</sub> tǎ<sub>i</sub>]]]]]]]  
 Sara Grissom buy-Asp she that she three she she Cl pen  
 ‘As for Sara, Grissom bought those three pens from her.’

As indicated in Section 2.11, the movement of the possessor DP from the Spec of nP to the Spec of DP is triggered by the [Def\*] feature on the D<sub>def</sub> head. It may not be part of the possessor-raising chain.

Sara Grissom buy-Asp she that three she Cl pen  
 ‘As for Sara, Grissom bought those three pens from her.’

In the nominal domain, only the highest copy of the possessor DP will be spelt out.<sup>31</sup>

### 3.4.5 Possessor Raising vs. Base-Generation

The current proposal sheds new light on the longstanding debate between a possessor-raising approach and a base-generation approach for the possessors in such structures as (115) and (118).

For instance, Huang (2008) argues that there is no possessor raising from within object positions, based on the so-called pseudo-double object construction as in (137) and (138).

(137) tā qiǎng-le wǒ wǔ bǎi kuài qián  
 s/he rob-Asp me five hundred dollar money  
 ‘S/he robbed me five hundred dollars.’

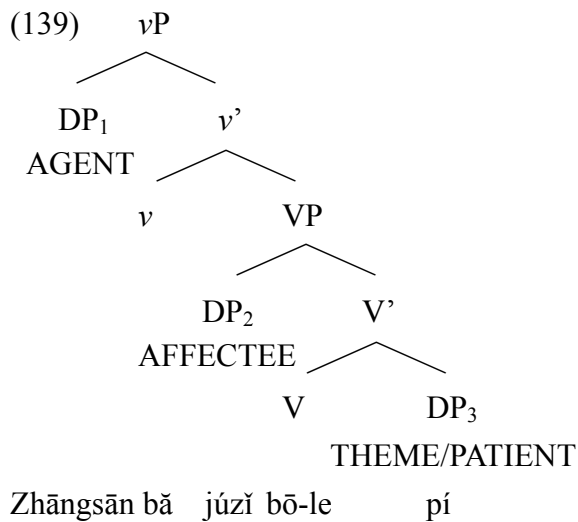
(138) Zhāngsān bǎ júzǐ bō-le pí  
 Zhangsan BA orange peel-Asp skin  
 ‘Zhangsan peeled the orange.’

According to Huang’s analysis, (138) has its derivation as the structure in (139). The DP *júzǐ* ‘orange’ has an affectee reading, and the possessor reading on it is caused by pragmatics.

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<sup>31</sup> Further work needs to be done to see why only the highest copy of the possessor DP in the nominal domain is spelt out.

Huang (2008: 15):



Huang's objection to the possessor-raising analysis relies on the basic assumption within the framework of Government and Binding that movement cannot target thematic positions. If the possessor reading on the DP<sub>2</sub> in (139) does not result from pragmatics but from syntax, such an assumption is violated. Therefore, DP<sub>2</sub> is assumed to be base-generated in the Spec of VP accordingly.

However, the assumption that movement cannot go through theta positions does not need to be maintained within the current Minimalist framework. For instance, Bošković (1994) and Horstein (2001) argue that movement can target thematic positions. Possessor raising in Sinitic languages is just another case of this type of movement. The moved element, the possessor DP, actually bears two theta roles, one marked by the lexical verb in the clausal domain and the other marked by the lexical noun in the nominal domain. For instance, the possessor DP in the disposal construction is first theta-marked by the lexical noun in the nominal domain, and it is then theta-marked by the lexical verb as an AFFECTEE. Similarly, the possessor DP in the unaccusative verb construction first receives a theta role from the lexical noun



and then receives another theta role AFFECTEE from the lexical verb.

### 3.4.6 Interim Conclusion

In this section, it has been shown that the Left Branch Condition is not operative in Sinitic languages given the fact that possessor raising does exist in the CP, TP and  $\nu$ P domains. Furthermore, the proposed analysis provides a new support for a cyclic spell-out model, since it has been shown that the insertion of a resumptive pronoun is constrained by phases. The current proposal also sheds new light on the long lasting debate between a possessor raising approach and a base-generation approach. Moreover, in contrast to Ting (2008), it has been shown that the possessor can further undergo the process of topicalisation to the sentence-initial position, given that the possessor can first target an A-bar position in the left periphery of the nominal phrase, namely the Spec of  $D_{top}P$ , which was shown to be an escape hatch in Section 3.3.

### 3.5 Cross-linguistic Consideration

Cross-linguistically, the existence of the functional projections in the left periphery of nominal phrases and the mechanism of DP-internal topicalisation and focalisation predicts the existence of a language with relatively free word order of constituents within nominal phrases. As observed by Nishiyama (1998), an Austronesian language spoken in Indonesia, namely Buginese, is such a language.<sup>32</sup> Nishiyama shows that Buginese allows remarkably free word order for constituents

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<sup>32</sup>More specifically, Buginese belongs to the Western Malayo-Polynesian of the Austronesian language family. This language is closely related to the languages from the western part of the Malay Archipelago, such as Javanese, Madurese and Sundanese. In terms of case typology, it is an ergative-absolutive language. According to Nishiyama (1998), most of the native speakers (around 3.6 million) are concentrated in South Sulawesi, Indonesia.

within nominal phrases, as exemplified in (140):

Nishiyama (1998: 121):

- (140) a. iaro lima buku-e  
          those five book-the
- b. lima iaro buku-e  
          five those book-the
- c. lima buku-e iaro  
          five book-the those
- d. iaro buku lima-e  
          those book five-the
- e. buku iaro lima-e  
          book those five-the
- f. buku lima-e iaro  
          book five-the those

Considering the three lexical items, namely demonstratives, numerals and nouns, the six logically possible orders are all attested.

Nishiyama (1998) proposes an iterated DP analysis, where demonstratives project a DP and c-select another DP headed by the definite marker *-e*. According to his analysis, (140a) is the underlying structure generated by the operation Merge only, whereas (140b-f) are derived by DP-internal phrasal movements. However, the postulation that demonstratives project an upper DP is not fully justified. Compared with Brugè's (2002) analysis of demonstratives in Romance languages, Nishiyama's proposal seems to be quite idiosyncratic. In addition, as admitted by Nishiyama

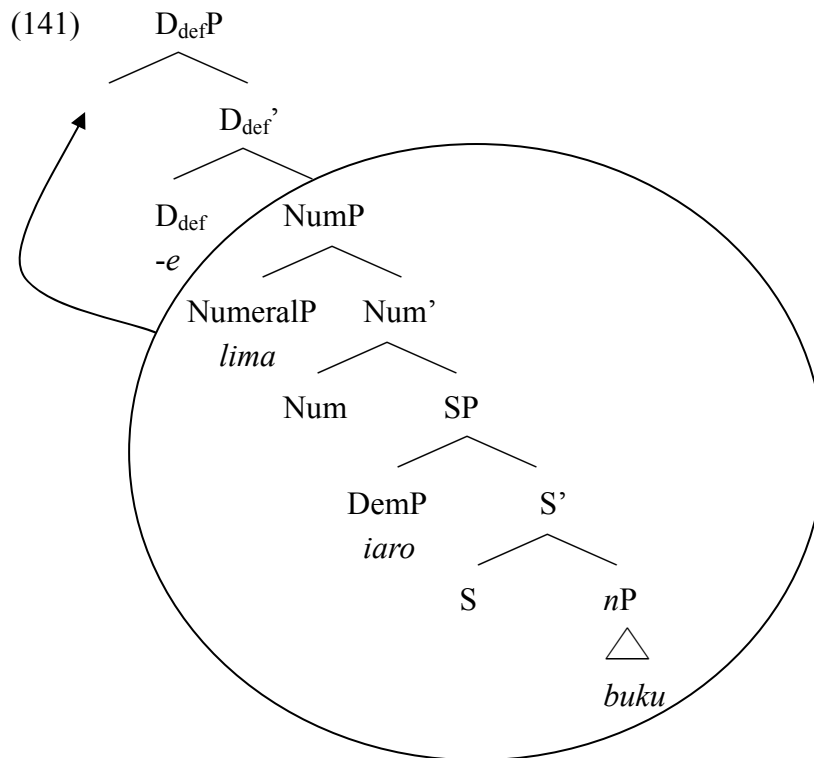
himself, discussion of what sort of feature triggers the proposed DP-internal phrasal movement is absent in his analysis. My current approach can rectify these two weak points quite well. First of all, given the Split-DP Hypothesis, the postulation of a multi-layered DP can be better justified. Second, some of the DP-internal phrasal movements in the derivation of (140) can be treated as DP-internal topicalisation or focalisation.

Since Nishiyama (1998: 121, n. 2) points out (140a-c) have a partitive reading and (140d-f) have a cardinal meaning, I propose that there is more than one underlying structure for the nominal phrases in (140) in contrast to Nishiyama's proposal of single underlying structure. More specifically, I maintain that the sequence *lima iaro buku-e* 'five those book-the' in (140b) is the base form of the sequence *iaro lima buku-e* 'those five book-the' in (140a) and the sequence *lima buku-e iaro* 'five book-the those' in (140c). The derivation of the sequence *lima iaro buku-e* 'five those book-the' in (140b) is illustrated in (141):<sup>33</sup>

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<sup>33</sup> To save space, only the  $D_{\text{def}}P$  at the left periphery of the nominal phrase is provided here. The left periphery of the nominal phrase in (141) has the fuller structure shown in (i) below:

(i)  $D_{\text{force}}P > D_{\text{top}}P > D_{\text{foc}}P > D_{\text{top}}P > D_{\text{def}}P$

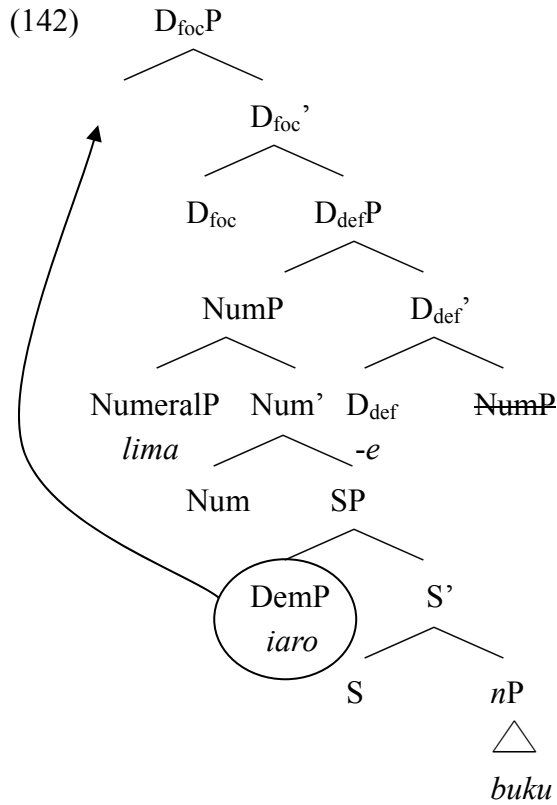


Given the universal structure of nominal phrases proposed in Section 2.1, I propose that the movement of NumP to the Spec of  $D_{\text{def}}P$  in (141) is triggered by the [Def\*] feature on the  $D_{\text{def}}$  head. If the [+Foc\*] feature on the  $D_{\text{foc}}$  head further triggers the movement of DemP *iaro* ‘those’ in (140b) *lima iaro buku-e* ‘five those book-the’ to the Spec of  $D_{\text{foc}}P$ , the sequence *iaro lima buku-e* ‘those five book-the’ in (140a) will be derived. The derivation of (140a) is illustrated in (142), where the moved item is marked by strikethrough.<sup>34</sup>

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<sup>34</sup> To save space, only the relevant functional projections at the left periphery of the nominal phrase, namely the  $D_{\text{foc}}P$  and  $D_{\text{def}}P$ , are provided here. The left periphery of the nominal phrase in (142) has the fuller structure shown in (i) below:

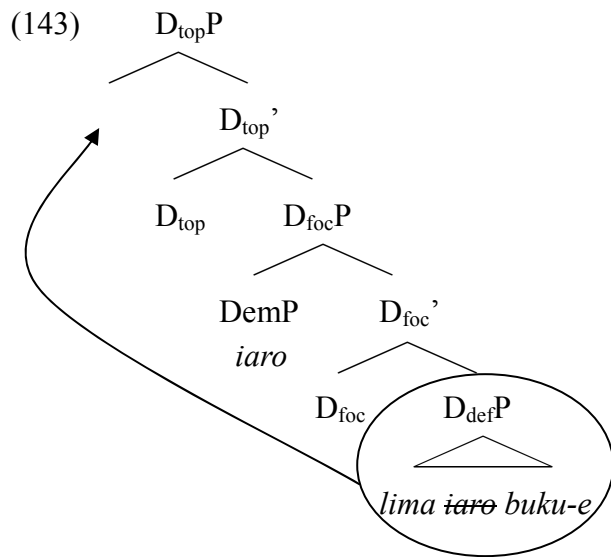
(i)  $D_{\text{force}}P > D_{\text{top}}P > D_{\text{foc}}P > D_{\text{top}}P > D_{\text{def}}P$



Furthermore, if the  $D_{\text{def}}P$  *limo buku-e* ‘five book-the’ in (140a) *iaro limo buku-e* ‘those five book-the’ undergoes the process of topicalisation to the Spec of the higher  $D_{\text{top}}P$ , the sequence *limo buku-e iaro* ‘five book-the those’ in (140c) will be derived. The derivation of (140c) is illustrated in (143), where the moved item is marked by strikethrough.<sup>35</sup>

<sup>35</sup> As above only the relevant functional projections of the nominal phrase are provided here. The left periphery of the nominal phrase in (143) has the fuller structure shown in (i) below:

(i)  $D_{\text{force}}P > D_{\text{top}}P > D_{\text{foc}}P > D_{\text{top}}P > D_{\text{def}}P$

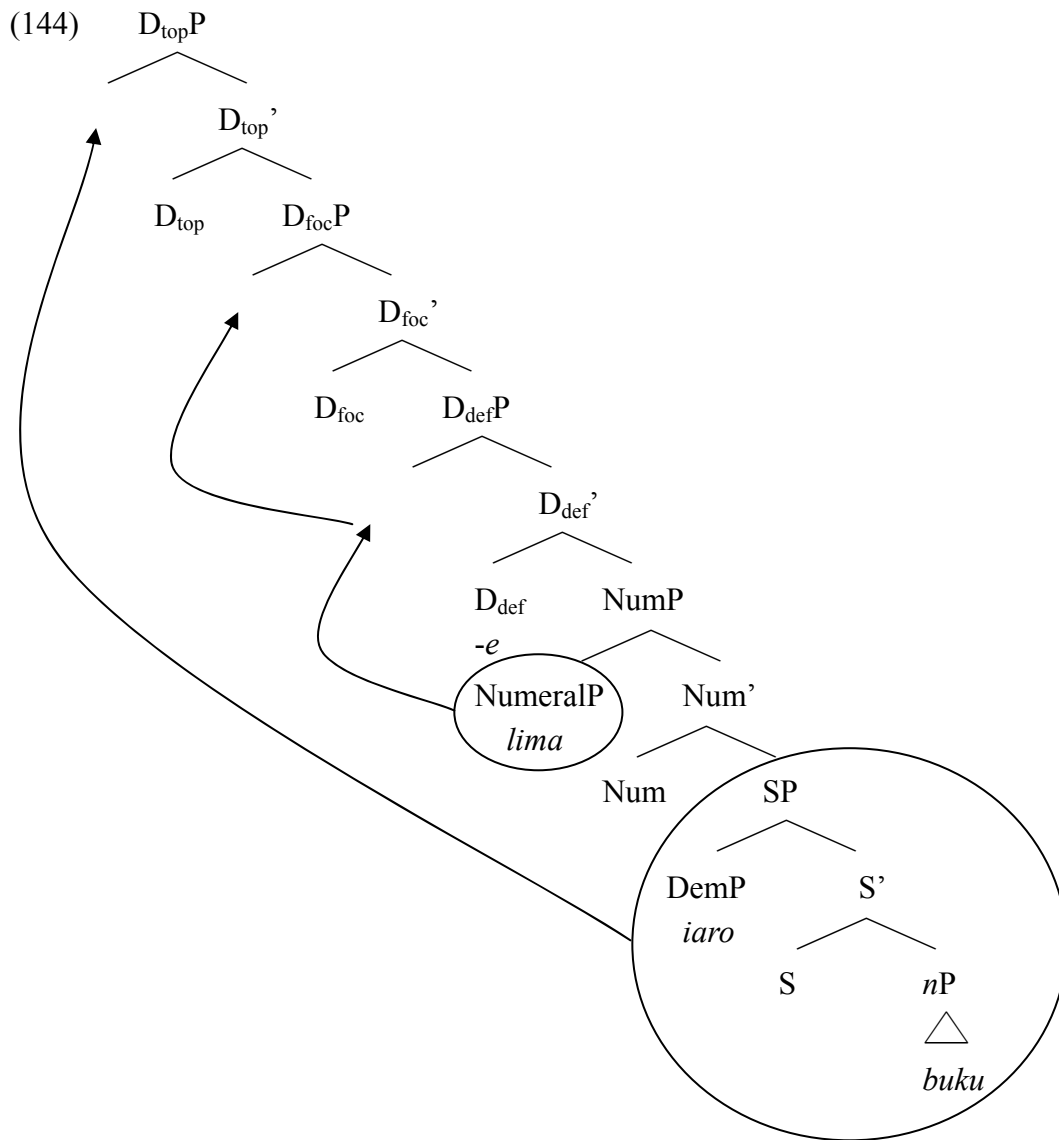


Moreover, given the same universal structure of nominal phrases proposed in Section 2.1, I propose that the derivation of the sequence *iaro buku lima-e* ‘those book five-the’ in (140d) involves (i) the movement of NumeralP *lima* ‘five’ to the Spec of  $D_{foc}P$  (via the Spec of  $D_{def}P$ ) triggered by the [+Foc\*] feature on the  $D_{foc}$  head on the basis of the cardinal meaning and (ii) the movement of SP to the Spec of  $D_{top}P$  triggered by the [+Top\*] feature on the  $D_{top}$  head. The derivation of (140d) is illustrated in (144) below.<sup>36</sup>

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<sup>36</sup> As above only the relevant functional projections at the left periphery of the nominal phrase, namely the higher  $D_{top}P$ , the  $D_{foc}P$  and the  $D_{def}P$ , are provided here. The left periphery of the nominal phrase in (144) has the fuller structure shown in (i) below:

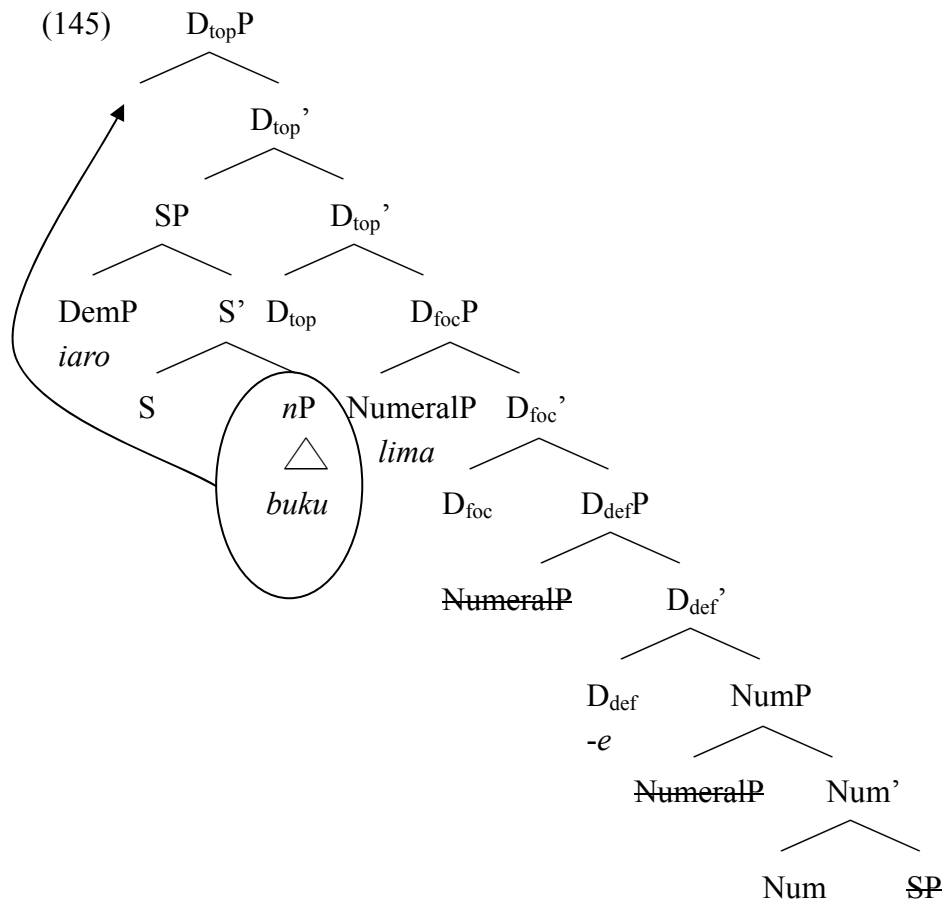
(i)  $D_{force}P > D_{top}P > D_{foc}P > D_{top}P > D_{def}P$



If the *nP* *buku* ‘book’ in (140d) *iaro buku lima-e* ‘those book five-the’ further undergoes topicalisation to the outer Spec of the higher  $D_{top}P$ , the sequence *buku iaro lima-e* ‘book those five-the’ in (140e) will be derived. The derivation of (140e) is illustrated in (145) below, where the moved items are marked by strikethrough.<sup>37</sup>

<sup>37</sup> To save space, only the relevant functional projections at the left periphery of the nominal phrase, namely the higher  $D_{top}P$ , the  $D_{foc}P$  and the  $D_{def}P$ , are provided here. The left periphery of the nominal phrase in (145) has the fuller structure shown in (i) below:

(i)  $D_{force}P > D_{top}P > D_{foc}P > D_{top}P > D_{def}P$

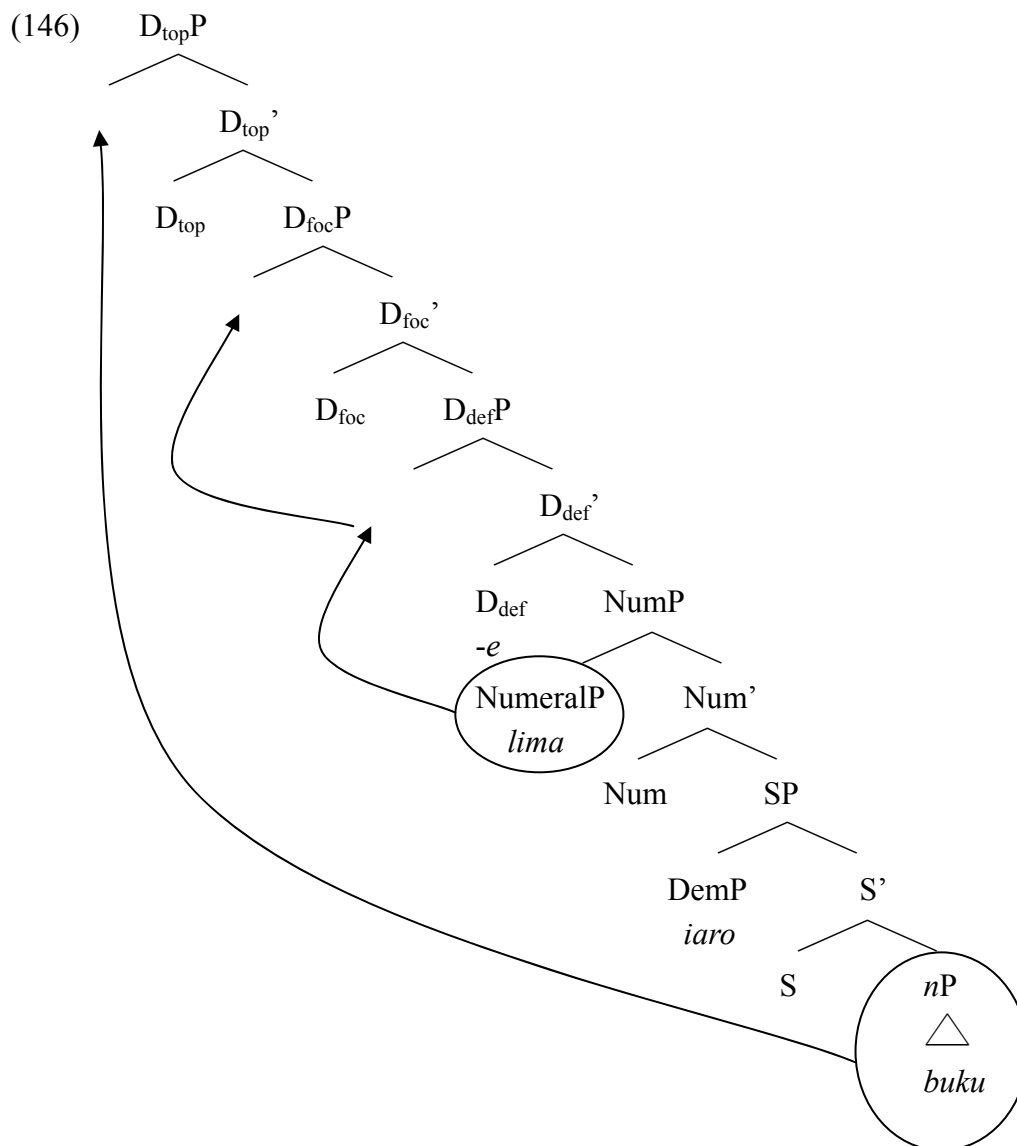


As for the derivation of the sequence *buku lima-e iaro* ‘book five-the those’ in (140f), I propose that it involves (i) the movement of  $NumeralP$  *lima* ‘five’ to the Spec of  $D_{foc}P$  via the Spec of  $D_{def}P$  triggered by the [+Foc\*] feature of the  $D_{foc}$  head on the basis of the cardinal meaning and (ii) the movement of  $nP$  *buku* ‘book’ to the Spec of the higher  $D_{top}P$  triggered by the [+Top\*] feature on the  $D_{top}$  head. The derivation of (140f) is illustrated in (146) below.<sup>38</sup>

<sup>38</sup> To save space, only the relevant functional projections at the left periphery of the nominal phrase, namely the higher  $D_{top}P$ , the  $D_{foc}P$  and the  $D_{def}P$ , are provided here. The left periphery of the nominal phrase in (146) has the fuller structure shown in (i) below:

(i)  $D_{force}P > D_{top}P > D_{foc}P > D_{top}P > D_{def}P$





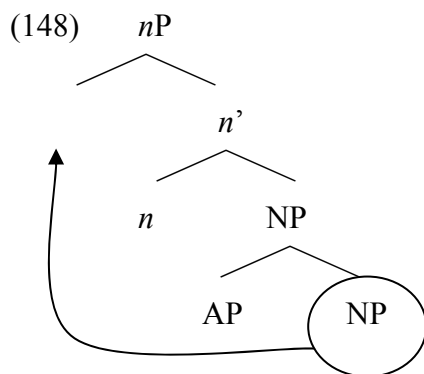
However, things are more complicated if the position of adjectives is taken into consideration. According to Nishiyama (1998: 126), in Buginese ‘the position of the adjective is strictly right-adjacent to the modified noun’ as shown in (147).

Nishiyama (1998: 126; modified):

- (147) a. iaro    lima    buku    malotong-e  
           those five    book    black-the  
       b. lima    iaro    buku    malotong-e

- |    |       |          |            |           |
|----|-------|----------|------------|-----------|
|    | five  | those    | book       | black-the |
| c. | lima  | buku     | malotong-e | iaro      |
|    | five  | book     | black-the  | those     |
| d. | iaro  | buku     | malotong   | lima-e    |
|    | those | book     | black      | five-the  |
| e. | buku  | malotong | iaro       | lima-e    |
|    | book  | black    | those      | five-the  |
| f. | buku  | malotong | lima-e     | iaro      |
|    | book  | black    | five-the   | those     |

Given the strict N-Complement-Adj order and the ungrammaticality of the N-Adj-Complement sequence, Nishiyama (1998) argues that the noun-adjective order in Buginese is not due to head movement of the noun. Instead, he proposes a base-generated right-adjunction analysis of AdjP, in which an adjective adjoins to the right of a noun, resulting in the noun-adjective order. However, in contrast to Nishiyama's proposal, I propose that the AdjP adjoins to the left of NP and that the noun-adjective order is derived from the movement of NP to the Spec of *n*P as illustrated in (148).



This proposal will not affect my analysis for the derivation of (140). In other words,

nothing has to change in my analysis of (140) in order to derive (147). Nevertheless, the above account for (140) and (147) is only based on a theory-internal perspective. It should be further confirmed by empirical evidence (i.e. whether the semantic interpretation clearly involves focalisation or topicalisation).

To discuss the relative order of elements in nominal phrases cross-linguistically, Greenberg (1963) states Universal 20 in (149) below:

Greenberg (1963: 87):

(149) Universal 20

When any or all of the items (demonstrative, numeral and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite.

The fact that the word order possibilities, such as (147a) and (147c-f), are attested in a single language challenges the very notion of a language parameter. Furthermore, the existence of the Numeral-Dem-N-Adj order as in (147b) is so unique. Both Greenberg (1963) and Hawkins (1983) explicitly claim that such an order is not attested. Cinque (2005) also argues that this order cannot be derived given his assumption of the underlying Dem-Numeral-Adj-N order and parameters of movement. On the contrary, given my universal structure proposed in Section 2.1, my Split-DP Hypothesis proposed in Section 3.2, and the mechanism of DP-internal phrasal movement proposed in Section 3.3, the attested word orders in Universal 20 can be derived and the unattested one, the Numeral-Dem-N-Adj order, will not be ruled out.

### **3.6 Summary**

This chapter has investigated the left periphery of Sinitic nominal phrases in

terms of the Split-DP Hypothesis (cf. Aboh 2004; Giusti 1996; Haegeman 2004; Ihsane and Puskás 2001), which proposes that the DP is not a unitary projection but an articulated array of functional projections, including  $D_{\text{force}}\text{P}$ ,  $D_{\text{top}}\text{P}$ ,  $D_{\text{foc}}\text{P}$ ,  $D_{\text{top}}\text{P}$  and  $D_{\text{def}}\text{P}$ . Like their counterparts in the clausal domain, these functional projections encode discourse-related properties, such as illocutionary force, topic and focus. In line with Pereltsvaig's (2007) Universal-DP Hypothesis, it was assumed that the existence of these functional projections is not subject to parametric variation cross-linguistically. Empirically, on the basis of Sinitic language data, it was shown that these functional projections exist in article-less languages and classifier languages as well.

In Section 3.2.1, it was proposed that an interpretable [Person] feature is accommodated in the head of  $D_{\text{top}}\text{P}$  that immediately c-commands the  $D_{\text{def}}\text{P}$ . Since this feature specifies information about the participants in the speech event, this  $D_{\text{top}}\text{P}$  is assumed to be the discourse topic in the nominal domain. A personal pronoun is inserted in its Spec position to provide an 'aboutness' relation. In Section 3.2.2, it was proposed that an interpretable [Foc] feature is accommodated in the head of  $D_{\text{foc}}\text{P}$  and triggers the movement of an emphasised element, such as numerals and DegPs to its Spec position. The existence of  $D_{\text{foc}}\text{P}$  also helps to explain why the collective marker *–men* in Mandarin can appear in a pre-numeral position but not in a post-numeral position. In contrast to the general assumption in the literature that proper names, pronouns and demonstratives all occupy the D position, the co-occurrence of these three lexical items within the same nominal phrase in Sinitic languages can be easily accounted for given the existence of  $D_{\text{top}}\text{P}$  and  $D_{\text{foc}}\text{P}$  in the left periphery of Sinitic nominal phrases. In Section 3.2.3, it was proposed that there is a  $D_{\text{force}}$  head bearing an interpretable [Force] feature, which can be optionally

lexicalised by an overt particle in Sinitic languages. Given the fact that the particles appear in the phrase-final position, it was proposed that there is obligatory XP-raising to the top-most left periphery of nominals in Sinitic languages, which is parallel to the obligatory XP-raising to the top-most left periphery of the clause. In Section 3.3, it was shown that topicalisation and focalisation of NP out of a DP in the clausal domain of Sinitic languages have to be licensed by DP-internal topicalisation and focalisation. In other words, the  $D_{top}P$  and  $D_{foc}P$  in the left periphery of nominal phrases are treated as the escape hatch. In Section 3.4, it was further demonstrated that the Left Branch Condition is not operative in Sinitic nominals since the possessor DP can be extracted from the nominal domain to the CP, TP and  $vP$  domains. This fact once again confirms that the higher  $D_{top}P$  in the left periphery of nominal phrases is the escape hatch so that the possessor DP can further undergo the process of topicalisation to the clausal domain (i.e. the sentence-initial position). In contrast to the DP Hypothesis, the other two existing analyses for nominal phrases in Sinitic languages, namely Huang's (1982) and Lin's (1997) NP analysis and Cheng and Sybesma's (1999, 2005) CIP analysis, cannot account for the aforementioned phenomena. In Section 3.5, it was demonstrated that the Split-DP Hypothesis and the mechanism of DP-internal topicalisation and focalisation predict the existence of a language with relatively free word order of constituents in the nominal domain, such as Buginese. The fact that the word order possibilities stated in Greenberg's (1963) Universal 20 are attested in a single language challenges the very notion of a language parameter.



## Chapter 4

### Modification Structures in Sinitic Languages<sup>1</sup>

#### 4.1 Introduction

This chapter investigates the ways in which modifiers of nominal phrases in Sinitic languages are incorporated into the syntactic structure set out in the previous two chapters. It will also examine the effect that modifiers bring to the interpretation of nominal expressions. In Sinitic languages modifiers of nominal phrases come in two types. Consequently, the discussion will begin with a discussion of the distinction between the two types of modifiers, namely the bare modifier and the marked modifier (or the direct and indirect modifications in Sproat and Shih's (1988, 1991) sense). Examples of the two types of modifiers in the four Sinitic languages are provided in (1) to (4). It will be shown that the bare modifier, as in (1a), (2a), (3a) and (4a), is base-generated in the Spec of a functional or lexical projection, whereas the marked modifier, as in (1b), (2b), (3b) and (4b), is incorporated into the structure by the operation Adjunction.

(1) Mandarin

a. **piàoliàng**    nǚhái  
   beautiful    girl

   'beautiful girl(s)'

b. **piàoliàng**    **de**    nǚhái

---

<sup>1</sup> This chapter contains material presented in Lin (2007).

beautiful DE girl

‘a/the girl(s) that is/are beautiful’

c. \***piàoliàng** ge nǚhái

beautiful Cl girl

Intended meaning: ‘the girl that is beautiful’

(2) Cantonese

a. **hung<sup>4</sup>sik<sup>1</sup>** saam<sup>1</sup>

red color shirt

‘red shirt(s)’

b. **hung<sup>4</sup>sik<sup>1</sup>** ge<sup>3</sup> saam<sup>1</sup>

red color GE shirt

‘a/the shirt(s) that is/are red’

c. **hung<sup>4</sup>sik<sup>1</sup>** gin<sup>6</sup> saam<sup>1</sup>

red color Cl shirt

‘the shirt that is red’

(3) Taiwan Southern Min

a. **âng** sann

red shirt

‘red shirt(s)’

b. **âng** ê sann

red E shirt

‘a/the shirt(s) that is/are red’

c. \***âng** niá sann



red Cl shirt

Intended meaning: 'the shirt that is red'

(4) Hakka

a. **fung**<sup>55</sup> sam<sup>53</sup>

red shirt

'red shirt(s)'

b. **fung**<sup>55</sup> **gai**<sup>11</sup> sam<sup>53</sup>

red GAI shirt

'a/the shirt(s) that is/are red'

c. \***fung**<sup>55</sup> **liang**<sup>53</sup> sam<sup>53</sup>

red Cl shirt

Intended meaning: 'the shirt that is red'

Over the years the construction with marked modifiers in Mandarin Chinese, the *de* construction, has been one of the most studied topics within the linguistic literature. So far, due to its complicated properties and distributions, a satisfactory account has not yet been achieved that covers all the phenomena observed. In particular, the categorial status of *de* remains rather vague. Perhaps it is because so much effort has been devoted to such a challenging task that few linguists pay attention to its near counterparts in Cantonese, Taiwan Southern Min and Hakka, which manifest even more complex phenomena. For instance, in Cantonese, modifiers can immediately precede the classifier, as shown (2c). With regard to this, it is worth asking if (2c) involves an instance of direct or indirect modification. As far as Taiwan Southern Min is concerned, given the fact that *ê* can function as a classifier, as shown in Chapter

Two, it is worth asking if the word *ê* in (3b) is a classifier as the word *gin*<sup>6</sup> is in (2c) or a modification marker as the particle *de* is in (1b). Similarly, as shown in Chapter Two, the word *gai*<sup>11</sup> in Hakka can function as a classifier, but it can also mark modification as in (4b). Therefore, we can ask the same question: is the word *gai*<sup>11</sup> in (4b) a classifier or a modification marker? As will be disclosed later in this chapter, the treatment of the particles *ge*<sup>3</sup>, *ê* and *gai*<sup>11</sup> in Cantonese, Taiwan Southern Min and Hakka respectively as the counterpart of Mandarin *de* can be maintained.

This chapter is organised in the following manner. In Section 4.2, I will review the literature on various proposals for the marked modification structure of nominal phrases in Mandarin Chinese. In Section 4.3, I will argue for a left adjunction of full relative clause analysis to account for the construction with *de*-marked modifiers in Mandarin. In Section 4.4, I will extend my left adjunction of full relative clause analysis to the marked modification structures in the other three Sinitic languages. In Section 4.5, I will turn to bare modifiers and argue that they are accommodated in the Spec of functional or lexical projections. I will then conclude this chapter in Section 4.6.

## 4.2 Marked Modifier in Mandarin

The Mandarin particle *de* that marks modification in pre-nominal strings has been the topic of discussion in the literature on Chinese linguistics for many years. For instance, Li and Thompson (1981) suggest that *de* has several functions: a possessive marker, an adjectival marker and a nominalisation marker. Examples of *de* being used in its various contexts are provided in (5) to (10) below, with the labelled bracketing indicating the surface structure of the preceding constituents.

(5) [<sub>DP</sub> Zhào Yuánrèn] de shū

Zhào Yuánrèn DE book

‘Zhào Yuánrèn’s book(s)’

(6) [<sub>AdjP</sub> tèbié piàoliàng] de fangzǐ

particularly gorgeous DE house

‘a/the house(s) that is/are gorgeous’

(7) [<sub>PP</sub> zài zhuō shàng] de chábēi

at table up DE cup

‘a/the cup(s) that is/are on the table’

(8) [<sub>NP</sub> mùtóu] de zhuōzi

wood DE table

‘a/the table(s) that is/are made of wood’

(9) [<sub>TP/AspP</sub> tuō-zhe xínglǐ] de lǚkè

carry-Asp luggage DE passenger

‘a/the passenger(s) who is/are carrying the luggage’

(10) [<sub>TP/AspP</sub> wǒ zuótiān mǎi] de shū

I yesterday bought DE book

‘a/the book(s) that I bought yesterday’

As can be seen from the examples above, modifying elements with different categorial status can be followed by the marker *de* in Mandarin nominal expressions.

More specifically, the particle *de* can appear in a possessive construction as in (5), or it can appear after an AdjP as in (6), a prepositional phrase (PP) as in (7), a noun as in (8), or a relative clause as in (9) and (10). This section will review various existing proposals in the literature with regard to the use of *de* in these examples.

#### 4.2.1 The Function of *DE*

It is generally assumed that the particle *de* serves the function of subordinating modifiers to nominal expressions in Mandarin Chinese (Huang 1982); as a result, it has traditionally been considered as a modification marker. Given the fact that Mandarin allows both *de*-marked and *de*-less modifications as shown in (1), Paul (2005a) maintains that *de* has the function of dividing the nominal expression into two different syntactico-semantic domains. If a modifier appears in the domain to the right of the particle *de*, it is interpreted as a defining characteristic of the nominal expression. This is the case of the bare modification to be discussed in Section 4.5. On the contrary, if a modifier emerges in the domain to the left of the particle *de*, it is better understood as an accessory property. This is the case of the *de*-marked modification. That is to say, the domain to the right of the marker *de* is restrictive in meaning, whereas the domain to its left is not. In terms of Paul's theory, modification without *de* leads to the interpretation of the nominal expression as 'a newly created type' which should be a natural and possible classification. Therefore, modification without *de* is more constrained than *de*-marked modification. Examples can be found in (11) below:

- (11) a. \*guì            dàngāo  
          expensive cake  
      b. guì            de    dàngāo

expensive DE cake

‘a/the cake(s) that is/are expensive’

Example (11a) is ruled out due to the fact that expensiveness is not a defining characteristic of a cake. Instead, it is an accessory property so that the particle *de* should be used as in (11b).

Similarly, Lu (1999) argues that modifiers without descriptive meaning cannot co-occur with the particle *de* and that only modifiers with certain descriptive force can have the particle *de* attached to them. In Lu’s theory, restrictive (non-descriptive) modifiers are used to identify referents, whereas descriptive modifiers simply provide some parenthetical information to identified referents. In terms of referentiality, a restrictive modifier limits the referentiality of the modified nominal expression. Conversely, a purely descriptive modifier leaves its modified nominal expression nonreferential. However, these two functions of modification are not mutually exclusive. The two functions may coexist at the same time. That is to say, a modifier can be both descriptive and restrictive as demonstrated in (12).

(12) his lousy work

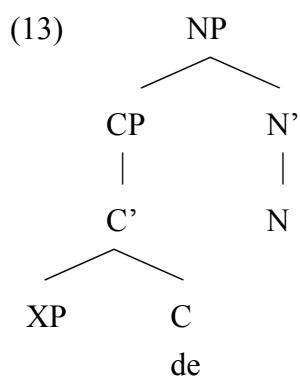
The adjective *lousy* in (12) functions as a restrictive condition in the sense of ‘his work that is lousy’, given the person has a lot of work and only some of it is lousy. However, the adjective *lousy* here still has some descriptive force. In such cases of restrictive use, the description is used to act as a restrictive criterion to distinguish among entities. As pointed out by Lu (1999), if a modifier can appear with and without *de* in a nominal expression, the modification without *de* is always more

restrictive than its counterpart with *de* as shown in (1).

Although discussing the functions of *de* in their papers, neither Paul (2005a) nor Lu (1999) determines the categorial status of *de*. Therefore, based on both Paul's and Lu's descriptions of the function of *de*, the following subsections will review various proposals for the categorial or syntactic status of the particle *de* in the literature.

#### 4.2.2 *DE* as the Head of CP

Within the Government and Binding framework, Cheng (1986: 321) proposes that '*de* is a head-final complementizer that does not select any particular category of complement'. In other words, being a complementiser, *de* places no restriction on the syntactic category of its complement. As can be seen from (5) to (10), the particle *de* can intervene between different sorts of modifiers and the modified nominal phrase. More precisely, the modification marker *de* can select a possessor DP as in (5), an AdjP as in (6), a PP as in (7), an NP as in (8), or a TP as in (9) and (10). Although not stated explicitly, Cheng seems to treat all the pre-nominal modifiers in (5) to (10) as full or reduced forms of relative clauses. The structure she assumed is illustrated in (13), where XP represents the various sorts of modifying elements.



Cheng's proposal that the particle *de* is a head-final complementiser seems to rely solely on her observation of the surface word order. However, it is not in line

with her belief in Huang's (1982) X-bar schema for Mandarin highlighted in (14), where only the NP is assumed to be head-final.

Huang (1982: 41; modified):

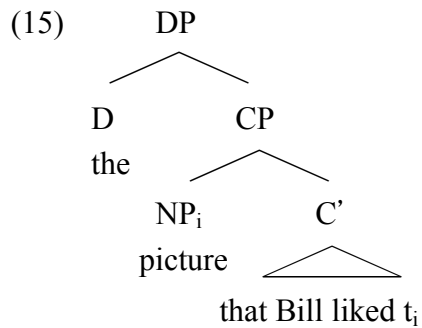
(14) X-bar schema for Mandarin:

- a.  $[X^n X^{n-1} YP^*]$  if and only if  $n=1$  and  $X \neq N$
- b.  $[X^n YP^* X^{n-1}]$  otherwise

Even if she abandons Huang's X-bar schema for Mandarin, her assumption of the existence of a head-final C head needs to face the challenge from the existence of subordinators, such as *rúguǒ* 'if' in Mandarin, which are generally analysed as involving a head-initial C. To accommodate this, Cheng would need two types of C in Mandarin, each with different directionality. However, from the theoretical point of view of first language acquisition, it seems dubious that there is variation of directionality within the C category.

Adopting Cheng's idea, D. Xu (1997) also argues that *de* is a C element from an early Minimalist perspective (Chomsky 1995). However, in accordance with Kayne's (1994) restrictive and universal theory of phrase structure, the Linear Correspondence Axiom (LCA), in which all phrases are underlyingly head-initial and no (base-generated or derived) right-adjunction structures are allowed, D. Xu maintains that *de* is a head-initial complementiser that takes an inflection phrase (IP) (the previous version of TP) as its complement. As for the surface modifier-*de*-N order, following Kayne's D-CP analysis of relative clauses in English, which assumes that a D head selects a CP complement, D. Xu assumes that some movements are involved in the derivation of *de*-marked modification in Mandarin. First of all, D. Xu proposes

that an NP moves to the Spec of CP. This proposal is in line with Kayne's (1994) analysis of the English non-wh-relative clause as in (15), where *t* indicates the position out of which the NP moves:<sup>2</sup>



According to Kayne's D-CP analysis, English nominal expressions such as *the picture that Bill liked* are derived by a syntactic operation of movement of the NP object *picture* to the Spec of CP. The determiner *the* heads the projection of D, and the clause *that Bill liked picture* projects as the complement of the determiner *the*.

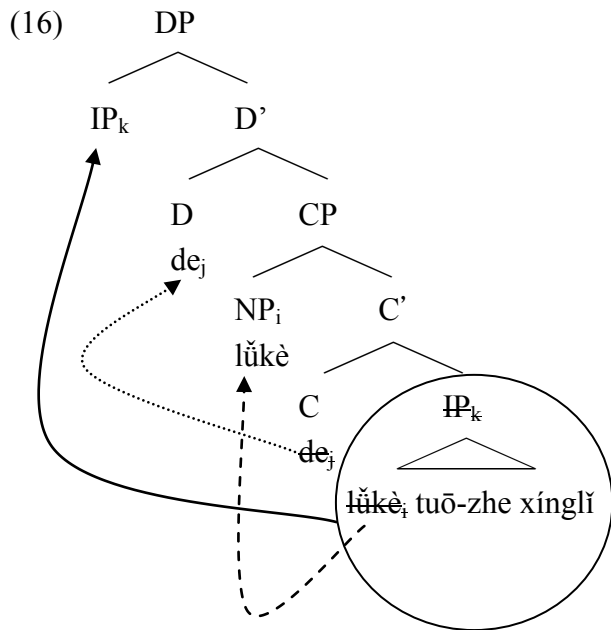
Secondly, D. Xu maintains that the particle *de* moves from the head of CP to the head of DP. Lastly, he argues that the complement of C, the remnant IP, moves to the Spec of DP. The entire derivation is illustrated in (16), where the lower copy of a moved item is marked by strikethrough.

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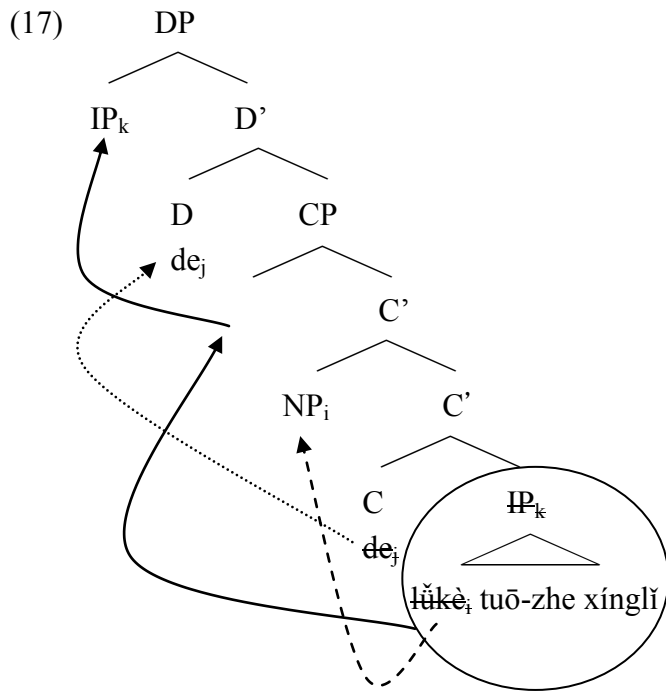
<sup>2</sup> As for the English wh-relative clause as in (i), Kayne proposes that it involves a D with a CP complement and movement of a DP or PP to the Spec of CP.

- (i)a. the picture which Bill liked
- b. the picture at which Bill gazed





Although this can derive the correct word order for the relative clauses in Mandarin, D. Xu's analysis encounters a major problem within the recent Phase-based Minimalist Programme (Chomsky 2000, 2001, 2004). That is, the movement of remnant IP to the Spec of DP is not fully motivated (or is even redundant). According to his analysis, the head movement of *de* from C to D paves the way for the feature checking of IP. Nevertheless, within the Phase-based Minimalist framework, the movement of IP to the Spec of DP needs to pass through the Spec of CP as shown in (17) (with strikethrough marking the lower copy of moved items).



If the IP does not pass through the Spec of CP as shown above, a violation of the Phase Impenetrability Condition in (18) will be incurred.

Chomsky (2000: 108):

(18) *Phase-Impenetrability Condition*

In a phase  $\alpha$  with head H, the domain of H is not accessible to operations outside  $\alpha$ , only H and its edge are accessible to such operations.

According to (18), the external Probe in (16), namely the D head, cannot attract the c-command domain (the remnant IP) of a phase head, namely the C head in this case. Since the remnant IP has to move via the Spec of CP, the features of IP, which have to be checked by the C head instead of the D head as claimed by D. Xu, will be matched and deleted in the Spec of CP. As a result, the further movement of IP to the Spec of DP will become redundant. In other words, D. Xu has to discard the idea that the head movement of *de* from C to D paves the way for the feature checking of IP and that the

feature checking of IP are all related to the C head. Alternatively, D. Xu has to resort to an articulated CP to solve this problem.

Furthermore, the obligatory movement of the particle *de* to the D head contradicts Li's (2001) finding that the occurrence of a relative clause in Mandarin can merely have an NP projection. In other words, a relative clause in Mandarin does not require the occurrence of a D head. An example is provided in (19) below.<sup>3</sup>

Li (2001: 179; modified):

- (19) yī ge fùzé yīngwén de mìshū jiān jiāo xiǎohái de jiājiao  
one Cl charge English DE secretary and teach kid DE tutor  
'a secretary that takes care of English (matter) and tutor that teaches kids'

As can be seen above, the conjunction word *jiān* 'and' in (19) coordinates two activities performed by one individual. In terms of categories, according to Li (2001), the conjunction *jiān* only connects NPs or VPs but not DPs as shown in (20) to (22) below:<sup>4</sup>

Li (2001: 175; modified):

- (20) yī ge [NP mìshū] jiān [NP dǎzìyuán]  
one Cl secretary and typist  
'a secretary and typist'

Li (2001: 177; modified):

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<sup>3</sup> Li (2001) provides a sentence from which I have isolated just the nominal phrase.

<sup>4</sup> Li (2001) provides the sentences from which I have isolated just the nominal phrases.

(21) [VP niàn shū] jiān [VP zuòshì]  
 read book and work  
 ‘study and work’

Li (2001: 176; modified):

(22) \*[DP yī ge mìshū] jiān [DP yī ge dǎzìyuán]  
 one Cl secretary and one Cl typist  
 Intended meaning: ‘a secretary and typist’

D. Xu’s analysis that Mandarin relative clauses require the occurrence of D is not compatible with Li’s observation, for the coordination of two DPs is not allowed for the conjunction word *jiān* ‘and’ as shown in (22). Therefore, (19) must involve the coordination of two NPs as illustrated in (23) below:

(23) [DP yī ge [NP [NP [CP fùzé yīngwén de] [NP mìshū]]] jiān [NP [CP jiāo  
 one Cl charge English DE secretary and teach  
 xiǎohái de] [NP jiājiào]]]  
 kid DE tutor  
 ‘a secretary that takes care of English (matter) and tutor that teaches kids’

As a result, D. Xu’s proposal that the particle *de* moves obligatorily from the head of CP to the head of DP is not on the right track.

Rejecting the analysis that postulates an underlying predicate for different categorial modifiers, Paul (2007: 18) proposes that the particle ‘*de* is a complementiser limited to non-root contexts’. She argues that some complementisers

in Mandarin are able to select complements of heterogeneous nature in addition to clauses. The particle *de* is just one of these sorts of complementisers. She further proposes that the particle *de*, with its various categorial complements, forms a *de* Phrase (henceforth DeP). In line with Aoun and Li's (2003) adjunction analysis for relative clauses in Mandarin, she maintains that DeP is adjoined to the modified noun, as illustrated in (24) below, where XP represents the various sorts of modifying element.

Paul (2007: 21):

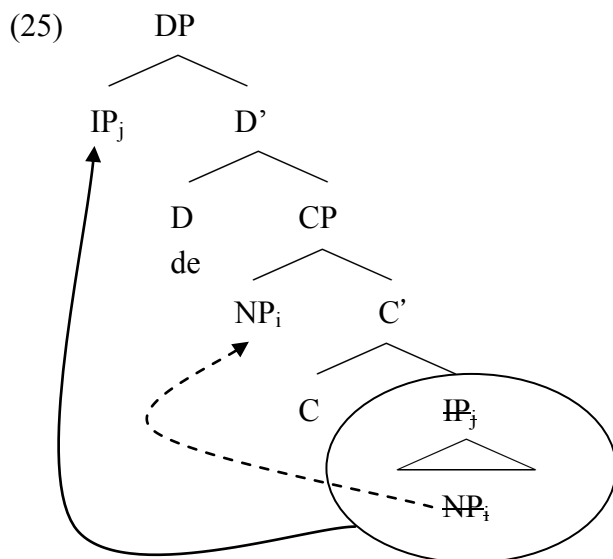
(24) [NP [DeP XP *de*] N]

According to Paul, the requirement for the DeP to occur within a nominal expression is due to the feature composition of the particle *de*, in which a nominal feature is included. This also accounts for why the modifier-*de* sequence is always interpreted as a headless nominal.

Although Paul's analysis is compatible with Li's (2001) observation that the D is optional in the formation of a relative clause in Mandarin, Paul does not justify the head-final status of the particle *de* but only takes Cheng's (1986) proposal as her starting point. As a result, her proposal inherits the same flaw as in Cheng's analysis of the particle *de*. That is the head directionality of C in Mandarin. In addition, her rejection of the predicational approach, which derives modifier phrases from underlying predicates in the form of a small clause or a relative clause, cannot explain why the *de*-marked modification structures in (5) to (10) can be negated, as we shall see in Section 4.3 below.

### 4.2.3 *DE* as the Head of DP

Following Kayne's (1994) LCA and head-internal analysis of relative clauses, Simpson (2001, 2002) suggests that the modifier expression with *de* is formed in the same way as relative clauses in which the AdjPs, the modifying PPs, or the possessive constructions are predicates of their NP subjects. According to Simpson's hypothesis, the particle *de* is analysed as a D head which selects a CP as its complement to its right. In addition, Simpson argues that *de* is an enclitic D that attracts some elements to its Spec for phonological support. The derivation of the surface word order involves the movement of the noun to the Spec of CP, followed by the movement of remnant IP to the Spec of DP. The entire derivation is illustrated in (25), where the lower copy of moved items is marked by strikethrough.



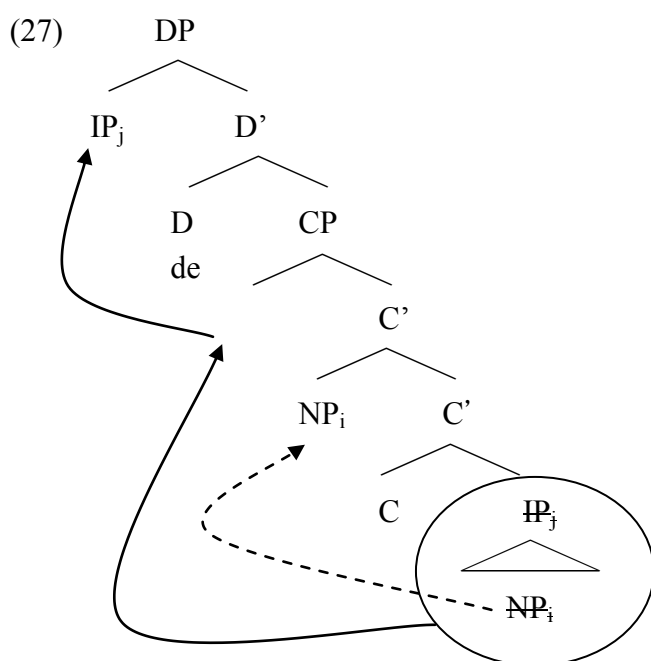
Simpson's analysis sketched above encounters one of the same problems as D. Xu's (1997) complementiser analysis of the particle *de*. That is, a violation of the Phase Impenetrability Condition in (18), repeated as (26) below, is incurred.

Chomsky (2000: 108):

(26) *Phase-Impenetrability Condition*

In a phase  $\alpha$  with head H, the domain of H is not accessible to operations outside  $\alpha$ , only H and its edge are accessible to such operations.

The particle *de*, which is base-generated in the head of DP, cannot directly attract any material from the c-command domain of a phase head, in this case the C head. However, Simpson's problem can be easily fixed by the amendment of the movement of the remnant IP as a successive cyclic operation as illustrated in (27).



As can be seen above, the movement of the remnant IP has to target the Spec of CP first before landing at the Spec of DP. In other words, the feature checking of IP has to rely on both the C head and the D head.

Nevertheless, since the particle *de* functions as a D element, there is a need for an explanation of the ungrammaticality of the *de*-NP sequence in Mandarin, such as *de shū* 'DE book' with the intended meaning 'a/the book', given the theoretical

assumption that D is the head of an extended projection of a nominal phrase. In order to answer this question, Simpson (2002) argues that the particle *de* requires movement of some elements to its Spec for phonological support; hence, it only occurs to introduce a modification of the noun where the modifying elements can move to the Spec of DP for the phonological support of the particle *de*. An alternative explanation provided by Simpson (2002: 278, n. 12) is that the particle *de* specifically selects a CP, not an NP, as its complement. But how about the ungrammaticality of the NP-*de* sequence, such as *shū de* ‘book DE’ with the intended meaning ‘a/the book’, where an NP is moved to the Spec of DP for phonological support of the particle *de*? Simpson (2002: 275, n. 9) maintains that a bare noun in a DP itself moves to fill the head of DP so that the particle *de* is not merged. The alternative solution to this question provided by Simpson (2001, 2002) is that the particle *de* carries a strong [V] or [Tense] feature. This feature must be satisfied by the attraction of a clause headed by an element with the [V] or [Tense] feature to the Spec of DP with pied-piping of the entire *vP* or TP. The movement of a head with [V] or [Tense] feature to this position is not allowed because of the Head Movement Constraint.

Nevertheless, Simpson’s *de*-as-determiner hypothesis is also incompatible with Li’s (2001) observation that a relative clause in Mandarin does not require the occurrence of a D as mentioned in Section 4.2.2. In other words, D is optional in the formation of relative clauses in Mandarin. Therefore, the treatment of the particle *de* as a bleached determiner in (5) to (10) is empirically challenged.

Saito, Lin and Murasugi (2008) adopt Simpson’s (2001, 2002) *de*-as-determiner analysis and provide two pieces of supporting evidence. Their first piece of evidence comes from the fact that a nominal adjunct can never precede the particle *de* as shown in (28).



Saito, Lin and Murasugi (2008: 306; modified):

(28) \*yǔ de tiān

rain DE day

Intended meaning: ‘rainy day’

Given the assumption that the particle *de* occupies the head of DP, the phrases followed by *de* should be in the Spec of DP. Since adjuncts, in contrast to arguments, cannot move to the Spec of DP, (28) is thus ruled out because of the illicit movement. However, Saito, Lin and Murasugi do not explain why adjuncts are not able to be directly merged into the Spec of DP.

The second piece of evidence provided by Saito, Lin and Murasugi comes from the ungrammaticality of multiple occurrences of *de*-marked arguments within a single nominal phrase as shown in (29).

Saito, Lin and Murasugi (2008: 307; modified):

(29) \*mǎnzú de Luómǎ de huǐmiè

barbarian DE Rome DE destruction

Intended meaning: ‘the barbarians’ destruction of Rome’

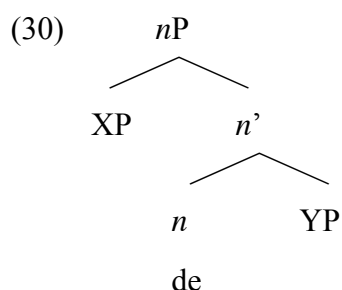
Given their assumption that *de* occupies the D position, (29) is ruled out since the movement of one of the arguments to the Spec of higher DP necessarily takes place across the Spec of lower DP occupied by the other argument. This, therefore, leads to a violation of minimality. However, since multiple Specs are allowed in the current Minimalist framework, (29) should be ruled out on other grounds.

Furthermore, Saito, Lin and Murasugi's (2008) suggested solution to the apparent violation of minimality by the movement of IP to the Spec of DP weakens their support for Simpson's (2001, 2002) *de*-as-determiner hypothesis. What they propose is that the particle *de* is base-generated as the head of CP and moves to the head of DP to make the Spec of CP and the Spec of DP equidistant for IP. If it is base-generated as the C head as they suggest, the particle *de* should not be analysed as a D element as Simpson originally proposes. Instead, their proposal is a return to D. Xu's (1997) complementiser analysis of the particle *de* discussed in Section 4.2.2.

#### 4.2.4 *DE* as the Head of *nP*

Since the particle *de* always makes the syntactic node dominating the two phrases between which *de* occurs into a nominal expression, N. Zhang (1999) proposes that the particle *de* is a functional category, namely the light noun, which heads a nominal projection, *nP*. In other words, she takes the particle *de* to be a nominal marker. The syntactic structure proposed by N. Zhang is illustrated in (30) below, where XP is the modifier and YP is the modifiee.

N. Zhang (1999: 46):



According to N. Zhang, the *de* construction can be divided into two types, namely the antecedent-free and antecedent-dependent *de* constructions. An example of each type

is provided in (31) and (32) respectively.

N. Zhang (1999: 29; modified):

(31) **antecedent-free *de* construction**

wǒ kànjiàn-le yí ge mài yǐnliào de

I see-Asp one Cl sell beverage DE

‘I saw a beverage seller.’

(32) **antecedent-dependent *de* construction**

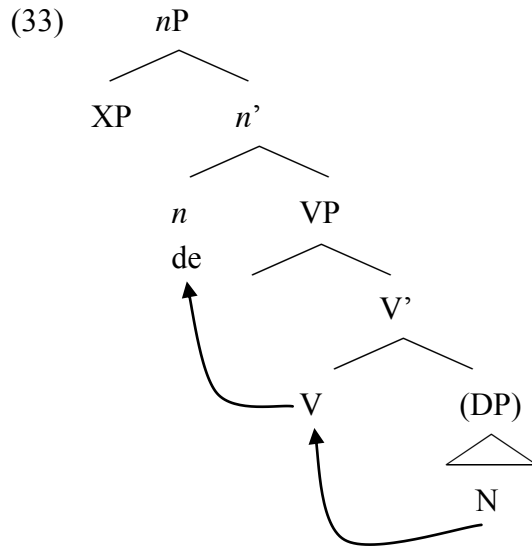
pào chá yào yòng zhèi ge bēizi, bié yòng nà ge háizi hē niúǎi de

make tea should use this Cl cup, not use that Cl child drink milk DE

‘Use this cup to make tea; don’t use the one which the kid drinks milk with.’

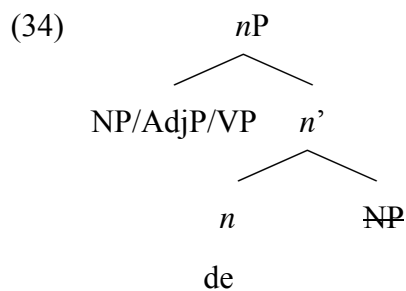
N. Zhang argues that the antecedent-free *de* construction is derived by deverbalisation whereas the antecedent-dependent *de* construction is derived by nominal ellipsis. Semantically speaking, the former involves a substantivisation process, which is similar to that of English *the rich*, and the latter involves a defocusing process. In terms of internal structures, according to N. Zhang, the *de* constructions that contain an AdjP or NP are antecedent-dependent, whereas the antecedent-free *de* construction can only include a VP. In other words, a *de* construction containing a VP can be either antecedent-free or antecedent-dependent. More specifically, N. Zhang proposes that in the derivation of an antecedent-free *de* construction there is a V-to-*n* head adjunction process involved. Furthermore, if the verb of the antecedent-free *de* construction has an internal argument, the argument incorporates into the verb, and then the newly derived verb (with its adjunct, if there is one) adjoins to the particle *de* to form a new

noun. The structure in (33) below illustrates her analysis of the derivation of the antecedent-free *de* construction.



The impossibility of the incorporation of the external argument to the head of VP is due to the ban on downward movement.

As far as the derivation of the antecedent-dependent *de* construction is concerned, the complement of the particle *de* undergoes a process of ellipsis. N. Zhang argues that the antecedent of the ellipsis in the antecedent-dependent *de* construction can be present in either a linguistic or a non-linguistic context. The derivation is illustrated in (34) below (where the elided material is marked by strikethrough).



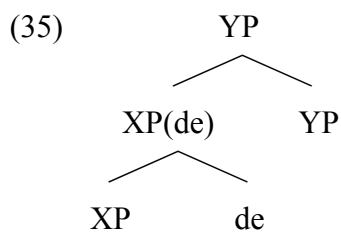
N. Zhang's analysis is compatible with Li's (2001) observation that the D is

optional in the formation of a relative clause in Mandarin. However, one of the potential problems of N. Zhang's *de*-as-*n* analysis lies in the multiple occurrences of *de*-marked modifiers within one single nominal phrase in different positions. Given her assumption that *de* functions as a nominaliser, it is not clear why one nominal phrase will need more than one nominaliser in the multiple occurrences of *de*-marked modifiers. N. Zhang does not offer an answer to this issue in her paper.

#### 4.2.5 *DE* as the Head of Conjunction Phrase

Li (2007, 2008) proposes that the particle *de* is a subordinating conjunction in the sense that it links two phrases (a modifier and a modifiee) together in the same way as the conjunction word *and* in English. However, the particle *de* differs from the English conjunction *and* in that it is an enclitic so that it has to attach to the phrase preceding it. Furthermore, Li argues that *de* is peculiar given that it does not have a categorial feature itself so that it does not determine the label of its projection. The structure in (35), where XP is the modifier and YP is the modifiee, illustrates her analysis of the particle *de* in Mandarin Chinese.

Li (2008: 105; modified):



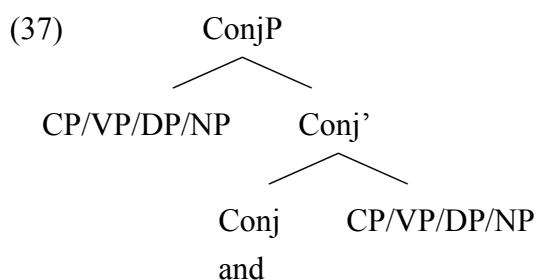
As can be seen in the above structure, after the merger of XP and the particle *de*, it is XP that determines the label of the XP-*de* sequence. After the merger of YP and the XP-*de* sequence, it is YP that determines the label of the XP-*de*-YP sequence. As

shown by Li (2008) in the following examples, the English conjunction word *and* shows a similar property like the particle *de*.

Li (2008: 105):

- (36) a. [<sub>CP</sub> [<sub>CP</sub> That the moon has a face] and [<sub>CP</sub> that the sky is blue]] are simply illusions.
- b. He can [<sub>VP</sub> [<sub>VP</sub> dance gracefully] and [<sub>VP</sub> sing beautifully]].
- c. He likes [<sub>DP</sub> [<sub>DP</sub> this book] and [<sub>DP</sub> that magazine]].
- d. He is a [<sub>NP</sub> [<sub>NP</sub> good actor] and [<sub>NP</sub> great singer]].

In the above sentences, it seems that the conjunction word *and* does not exist at all, for it does not change the label of the phrase that results from its co-ordination. However, in some literature (e.g. Camacho 1996, Progovac 1997), the conjunction word *and* has been analysed as the head of conjunction phrase (ConjP) as illustrated in (37) below.



On the other hand, Li's so-called parallelism between the particle *de* in Mandarin and the conjunction word *and* in English is not without problems. This is because the conjunction word *and* generally co-ordinates two phrases of the same category (cf. Munn 1993, Culicover and Jakendoff 1997) as shown in (36) whereas the particle *de*

generally associates a phrase of different categories with a nominal phrase (cf. N. Zhang 1999) as shown in (5) to (10). Furthermore, given the fact that the *XP-de* sequence as in (31) or (32) is always analysed as a nominal expression irrespective of the nature of the preceding *XP*, it seems evident that *XP* does not determine the label of the *XP-de* sequence as indicated in (35).

#### 4.2.6 *DE* as the Other Functional Heads

Facing the impossibility of analysing *de* as an existing category, Rubin (1994, 1997, 2002, 2003) proposes that the particle *de* in Mandarin is the lexical realisation of a new functional category, Modifier (henceforth *Mod*). Rubin's proposal is motivated by an attempt to form a unified syntactic analysis for all the elements that signal a modifying function, such as *na* in Tagalog and *de* in Romanian as exemplified in (38) below.

Rubin (2003: 665; modified):<sup>5</sup>

(38) a. Tagalog

bahay na maganda

house Mod beautiful

'the beautiful house'

b. Romanian

coverul de sub masă

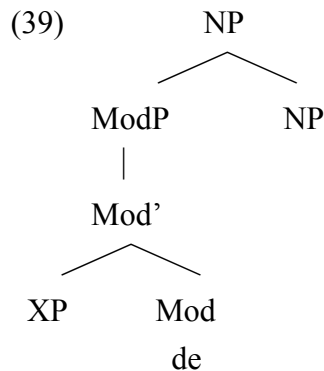
rug-the Mod under table

'the rug under the table'

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<sup>5</sup> Rubin (2003) provides the sentences from which I have isolated just the nominal phrases.

Rubin's analysis attempts to assign the new functional category, Mod, to all the modifying elements that used to be labelled as different categories, such as AdjP and PP etc. The structure in (39) below illustrates his analysis of *de*-marked modifiers in Mandarin Chinese.



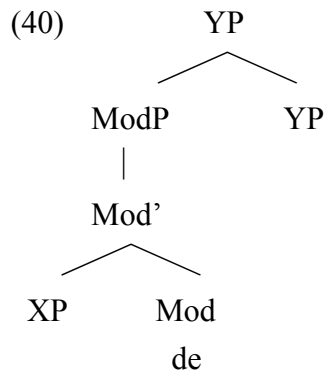
According to Rubin, the marker element occupies the head of ModP, whereas the modifying element is base-generated as the complement of the Mod head. In some languages, the Mod head is overtly realised, such as the particle *de* in Mandarin. In English, however, the Mod head is covert. Given the fact that modifiers are optional in a structure, Rubin proposes that the ModP is adjoined to the NP as an adjunct. In line with Chomsky's (2001) proposal that the operation Adjunction involves pair-Merge, Rubin claims that the major function of the Mod head is to give a signal to the Narrow Syntax to carry out the operation pair-Merge.

In Rubin's analysis, those sentential non-predicative adjectives will not become a problem, for it is the Mod head that results in the intersective reading; hence, modifiers that cannot function as a predicate of a clause are still able to get the intersective reading from the particle *de*.

Furthermore, Rubin's adjunction analysis, which takes the *de*-marked modifier as one constituent, can easily account for the multiple occurrences of *de*-marked



modifiers within one single nominal phrase in different positions. This also has the further assumption that ModP can adjoin to different functional projections of a nominal phrase (Sio 2006). In other words, the structure in (39) is modified as in (40), where YP represents different functional projections of a nominal phrase.



On the other hand, as indicated by Paul (2005a), Rubin's analysis is not clear with respect to how to distinguish the semantic differences between the modification structures with and without the marker *de* in Mandarin as shown in (1), repeated as (41) here.

- (41) a. **piàoliàng** nǚhái  
 beautiful girl  
 'beautiful girl(s)'
- b. **piàoliàng de** nǚhái  
 beautiful DE girl  
 'girl(s) that is/are beautiful'

Given his assumption that a united syntactic structure can account for all the modification relations, ModP should be projected in both (41a) and (41b), where the

only difference is the realisation of the Mod head as overt or covert. Rubin’s proposal, however, fails to distinguish their semantic differences. As a result, Rubin’s argument for a unified syntactic analysis for all the elements with a modifying function is weakened.

Furthermore, as pointed out by Sio (2006), another potential problem for Rubin’s analysis is related to the head directionality. According to Rubin’s proposal, the ModP is head final in Mandarin given its surface order. If one subscribes to the view that the head-directionality parameter is set for the whole language, the existence of head-final ModP in a V-O language, such as Mandarin, certainly becomes a problem. However, there is no such a problem with recent Minimalist approaches which allows functional heads to specify their own movement-triggering features individually.

Similar to Rubin’s proposal, Den Dikken and Singhapreecha (2004) propose a unified analysis for the linking elements that emerge between the noun and the modifier in complex nominal phrases of various typologically different languages. This includes examples such as *de* in French, *t̂ ŭi* in Thai, and *no* in Japanese as exemplified in (42).

(42) Den Dikken and Singhapreecha (2004: 2; modified):

a. French

une pizza de chaude

a-FEM pizza Linker hot

‘a hot pizza’

b. Thai

k<sup>h</sup>on t̂ ŭi kè.·’

person Linker smart

‘a/the smart person’

Den Dikken and Singhapreecha (2004: 41; modified):

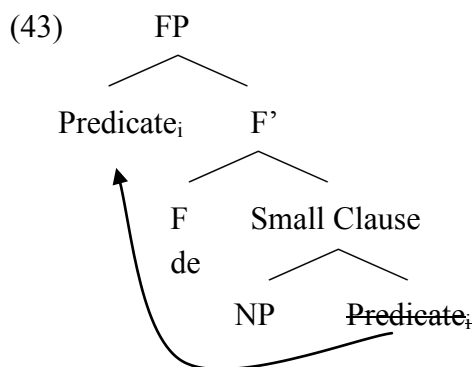
c. Japanese

ohana motteru no wanwa

flower holding Linker doggie

‘the doggie (that is) holding the flower’

They claim that these linking elements are the reflex of a DP-internal predicate inversion where the modifier preceding the linker starts out as the predicate of a small clause with the modified noun as its subject. More specifically, the predicate inverts around its subject and the predicate inversion gives rise to the emergence of the linker, such as the particle *de* in Mandarin. Furthermore, given their assumption that predicate inversion is universally associated with a particular information structure, they maintain that the entire DP bears a contrastive interpretation in which the noun presents the focus and the modifier conveys given, topical information. Their analysis is illustrated in (43) below, where the lower copy of the inverted predicate is marked by strikethrough and FP represents the functional projection whose head is reflected by the emergence of the particle *de* when predicate inversion occurs.



Sio (2006) has pointed out that Den Dikken and Singhapreecha's (2004) analysis also has a problem dealing with the multiple occurrences of *de*-marked modifiers within one single nominal phrase. Referring to Tsao (1997) and Simpson (2002), they note that there is a strict ordering restriction on the combination of a noun-complement clause and a relative clause in complex nominal phrases, as shown in (44).

Den Dikken and Singhapreecha (2004: 38; modified):

- (44) a. [wǒ zuótiān tīngdào de] [Dèng Xiǎoping sǐ de] xiāoxí  
 I yesterday hear DE Dèng Xiǎoping die DE news  
 'the news that Deng Xiaoping had died which I heard yesterday'
- b. \*[Dèng Xiǎoping sǐ de] [wǒ zuótiān tīngdào de] xiāoxí  
 Dèng Xiǎoping die DE I yesterday hear DE news

The example they provide, in which the two *de*-marked modifiers observe a strict ordering restriction, is in fact a marked case. Sproat and Shih (1988, 1991), for instance, report that the *de*-marked modifiers in Mandarin exhibit free ordering as shown in (45).

- (45) a. [xiǎo de] [bái de] huāpíng  
 small DE white DE vase  
 'small white vase'
- b. [bái de] [xiǎo de] huāpíng  
 white DE small DE vase  
 'small white vase'

Furthermore, the *de*-marked modifier can appear before or after the demonstrative as in (46).

Sio (2006: 141; modified):

(46) a. [yǒuqù de] nà běn shū  
interesting DE that Cl book  
'that interesting book'

b. nà běn [yǒuqù de] shū  
that Cl interesting DE book  
'that interesting book'

In addition, the *de*-marked modifier can appear before or after the numeral as in (47) below:

M.-L. Hsieh (2008: 90; modified):

(47) a. [dài yǎnjìng de] sān ge xuéshēng  
wear glasses DE three Cl student  
'three students who wear glasses'

b. sān ge [dài yǎnjìng de] xuéshēng  
three Cl wear glasses DE student  
'three students who wear glasses'

The flexibility of merging positions of the particle *de* is not predicted by Den Dikken and Singhapreecha's analysis. The strict ordering restriction they report may result

from the different adjunction sites of the two *de*-marked modifiers as C.-C. Tang (2007) suggests below.

Concerning the high degree of flexibility in terms of positions and reiteration of the particle *de*, C.-C. Tang (2007) proposes that *de* is a functional category indicating a modifier-modifiee relation. In addition, she argues that the *de*-marked modification structure can be licensed in three positions within a nominal phrase as highlighted in (48).

C.-C. Tang (2007: 1014; modified):

- (48) (xīn de) zhè (xīn de) sān (\*xīn de) běn (xīn de) shū  
new DE this new DE three new DE Cl new DE book  
'(lit.) (new) these (new) three (new) books'

However, neither the exact features of this functional head nor its complement structure are discussed in C.-C. Tang's paper.

Given the fact that the particle *de* can appear in a possessive construction as in (5), repeated as (49) below, Li (1985, 1990) proposes that *de* is a Case assigner on a par with English 's thereby capturing the requirement for a possessor DP to be assigned Case.

- (49) [<sub>DP</sub> Zhào Yuánrèn] de shū  
Zhào Yuánrèn DE book  
'Zhào Yuánrèn's book(s)'

Nevertheless, as Li acknowledges herself, this forces her to impose Case assignment

on adjectives and relative clauses as well in order to account for the presence of the particle *de* in cases such as (6), (9) and (10). This is a rather implausible move. For instance, C.-C. Tang (1990b, 1993) argues that unlike English 's the particle *de* in Mandarin is not a genitive marker as shown in (50).

- (50) a. \*new's book  
 b. xīn de shū  
 new DE book  
 'a/the book(s) that is/are new'

As can be seen, the particle *de* in Mandarin can appear after an adjective, whereas the English genitive marker 's cannot.

### 4.3 Current Analysis

#### 4.3.1 *DE* as the Head of CP

This section will cover all the uses of *de* in the previous section and present a uniform analysis. It is proposed here that the formation of the *de*-marked modification structure in Mandarin Chinese is derived by the operation Adjunction. More specifically, it is argued that the particle *de* is a head-initial complementiser and that all instances of the *de*-marked modifying phrases, as in (5) to (10), repeated as (51) to (56) below, are actually full forms of relative clauses adjoined to the left of modified phrases.

- (51) [<sub>DP</sub> Zhào Yuánrèn] de shū  
 Zhào Yuánrèn DE book

‘Zhào Yuánrèn’s book(s)’

(52) [<sub>AdjP</sub> tèbié piàoliàng] de fangzǐ  
particularly gorgeous DE house  
‘a/the house(s) that is/are gorgeous’

(53) [<sub>PP</sub> zài zhuō shàng] de chábēi  
at table up DE cup  
‘a/the cup(s) that is/are on the table’

(54) [<sub>NP</sub> mùtóu] de zhuōzi  
wood DE table  
‘a/the table(s) that is/are made of wood’

(55) [<sub>TP/AspP</sub> tuō-zhe xínglǐ] de lǚkè  
carry-Asp luggage DE passenger  
‘a/the passenger(s) who is/are carrying the luggage’

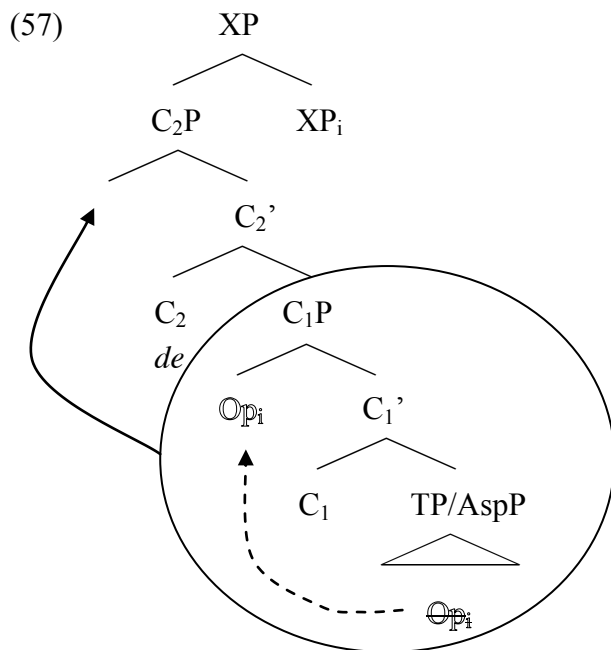
(56) [<sub>TP/AspP</sub> wǒ zuótiān mǎi] de shū  
I yesterday bought DE book  
‘a/the book(s) that I bought yesterday’

The entire derivation of the *de*-marked modification structure is depicted in (57), where XP represents the modifiee and  $\mathbb{O}_p$  embodies the null relative operator.<sup>6</sup>

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<sup>6</sup> I assume that the operator can bind either an argument variable (resulting in an argumental relative





The particle *de* is assumed to be base-generated in the  $C_2$  position. This position is also the place where sentence final particles (SFPs) in Sinitic languages are base-generated as proposed by Hsieh and Sybesma (2008a, 2008b). As for the  $C_1$  position, this is the place where subordinators, such as *shuō* ‘say’ and *rúguō* ‘if’ in Mandarin, are merged. In Mandarin relative clauses, there is a null  $C_1$  that takes a TP (or an aspect phrase (AspP) if one assumes that there is no TP in Sinitic languages) as its complement to its right. In addition, as can be seen from (57), it is proposed that a relative clause in Mandarin is adjoined to the left of a modified phrase by the operation Adjunction. The so-called head noun is base-generated external to the relative clause. In other words, Kayne’s (1994) head-internal analysis of relative clauses as complementation structures is rejected in the following investigation due to theoretical concerns and empirical facts which will be disclosed later in this section. Furthermore, within the TP (or AspP), there is a null relative operator which is

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clause), or an adjunct variable (leading to an adjunct relative clause) (cf. Cheng and Sybesma 2006).

co-indexed with the modified phrase. This operator undergoes movement to the Spec of C<sub>1</sub>P. After the movement of the operator, the whole C<sub>1</sub>P moves to the Spec of C<sub>2</sub>P to derive the surface word order.<sup>7</sup>

From a theoretical perspective, Kayne's head-internal analysis of relative clauses as complementation structures has been rejected independently. This is on the basis of anaphor binding within the current copy theory of movement in Minimalism (Chomsky 1995).<sup>8</sup> Consider the contrast in (58).

Hornstein, Nunes and Grohmann (2005: 276):

- (58) a. \*Which claim that John<sub>i</sub> was asleep did he<sub>i</sub> discuss?  
b. Which claim that John<sub>i</sub> made did he<sub>i</sub> discuss?

The sentences above have different binding properties, which are related to Binding Theory. The pronoun *he* cannot be co-referential with *John* in (58a), whereas it can be in (58b). According to Lebeaux (2000), the contrast between the two sentences lies in the distinction between complement and adjunct. More specifically, (58a) involves a noun complement clause, which is generated by the operation Merge, whereas (58b) involves a relative clause, which is generated by the operation Adjunction. Given the assumption that adjuncts can be merged in the course of the derivation (immune from the Extension Condition), the potential violation of Binding Condition C can be avoided because the relative clause containing *John* in (58b) can be merged once it is no longer c-commanded by the pronoun *he*. Therefore, (58b) is grammatical, whereas

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<sup>7</sup> See Hsieh and Sybesma (2008a, 2008b) for a discussion of the obligatory XP-raising in the left periphery of the clause in Mandarin Chinese.

<sup>8</sup> See also Borsley (1997) for a discussion of arguments against Kayne's (1994) D-CP analysis of the relative clause.

(58a) is ruled out due to the violation of Binding Condition C.

In contrast to Kayne's head-internal analysis of relative clauses, the current left-adjunction proposal can better account for the co-ordination of two relative clauses modifying one single nominal phrase in Mandarin Chinese as observed by T.-C. Tang (1979) in the sentence below:

T.-C. Tang (1979: 189; modified):

(59) hěn piàoliàng de gēn hěn cōngmíngde xiǎojiě dōu lái-le

very beautiful DE and very smart DE lady all come-Asp

'The beautiful lady and the smart lady both have come.'

'The beautiful ladies and the smart ladies all have come.'

Since there are two occurrences of the *de*-marked modifiers, within the head-internal analysis of relative clauses, such as D. Xu's (1997) and Simpson's (2001, 2002) analyses, an extra mechanism is required to explain from which position the noun, such as *xiǎojiě* 'lady' in (59), is moved. For instance, there may be a means in the PF component for the deletion of one of the copies of the noun. However, in the adjunction analysis, there is no need for such a mechanism because the constituents which are being coordinated are two CPs as illustrated in (60).

(60) [<sub>CP</sub> hěn piàoliàng de] gēn [<sub>CP</sub> hěn cōngmíng de] xiǎojiě dōu lái-le

very beautiful DE and very smart DE lady all come-Asp

'The beautiful lady and the smart lady both have come.'

'The beautiful ladies and the smart ladies all have come.'

Interestingly, relative clauses in English show evidence of a comparable construction, as exemplified in (61).

Alexiadou, Haegeman and Stavrou (2007: 356):

(61) a. The students [who failed the exam][who are currently on holiday]

b. The students [who are currently on holiday][who failed the exam]

Similarly, as there are two occurrences of *wh*-relative clauses, within Kayne's (1994) head-internal analysis of relative clauses, an extra mechanism is required to explain from which position the noun, such as *students* in (61), is moved. As mentioned, a means in the PF component for the deletion of one of the copies of the noun is needed. In contrast, there is no need for such a mechanism in the adjunction analysis. Furthermore, the free ordering illustrated in (61) is not surprising, since the operation Adjunction is not subject to the ordering restrictions.<sup>9</sup>

In addition, the current *de*-as-complementiser analysis can also account for T.-C. Tang's (1979) observation that the sentence with the sentence final particle, such as (62) and (63), cannot be embedded as a relative clause. This restriction is accounted for if we accept Hsieh and Sybesma's (2008a, 2008b) proposal that sentence final particles in Sinitic languages are base-generated in the  $C_2$  position, for which the particle *de* competes. Once the  $C_2$  position is inserted with sentence final particles, the formation of a relative clause is inhibited, as shown in (62) and (63).

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<sup>9</sup> With regard to the surface word order of English relative clauses, whether it is derived from right adjunction or obligatory movement of  $D_{\text{def}}P$  to the Spec of higher functional projection (i.e.  $D_{\text{top}}P$  or  $D_{\text{foc}}P$ ) is an issue left open for future research.

(62) yì pī pǎo hǎo kuài (\*a) de mǎ  
one Cl run very fast SFP DE horse  
'a horse that runs very fast'

(63) zài xiào (\*lǐ) de nà ge nǚhái  
Asp smile SFP DE that Cl girl  
'the girl that is smiling'

The proposal that the particle *de* is base-generated in the position where the sentence final particle is base-generated is supported by C.-L. Hsieh's (1998) observation that *de* can appear as the sentence final particle in cleft sentences as in (64).

(64) Zhāngsān yīnggāi lái yīngguó de  
Zhangsan should come Britain DE  
'Zhangsan should come to Britain.'

In the above example, the particle *de* simply indicates the mood that has the connotation of affirmation.

In contrast to Kayne's (1994) analysis of English adjectives as reduced forms of relative clauses, I propose that in Mandarin the *de*-marked modification structures, as in (51) to (56), are all full forms of relative clauses. Such a proposal is based on the fact that all of them can be negated as shown in (65) to (70) below.

(65) a. bù shǔyú Zhào Yuánrèn de shū<sup>10</sup>

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<sup>10</sup> As mentioned in D. Xu (1997), Sybesma (p.c.) suggests to him that the possessive construction in

not belong Zhào Yuánrèn DE book

‘a/the book(s) that do/does not belong to Zhào Yuánrèn’

b. Zhào Yuánrèn méi yǒu de shū<sup>11</sup>

Zhào Yuánrèn not have DE book

‘a/the book(s) that Zhào Yuánrèn does not have’

(66) bù piàoliàng de fāngzǐ

not gorgeous DE house

‘a/the house(s) that is/are not gorgeous’

(67) bù zài zhuōshàng de chábēi

not at table DE cup

‘a/the cup(s) that is/are not on the table’

(68) bù shì mùtóu de zhuōzi

not copula wood DE table

---

(51), repeated as (i) below, can be analysed as containing an empty preposition (namely, the null spell-out of the word *shǔyú* ‘belong to’).

(i) Zhào Yuánrèn de shū  
Zhào Yuánrèn DE book  
‘Zhào Yuánrèn’s book(s)’

Similarly, in Den Dikken and Singhapreecha’s (2004) analysis, the possessive construction in (i) is treated as a PP with an empty preposition.

<sup>11</sup> Yue-Hashimoto (1971) argues that the possessive construction in (51) can be considered as a relative clause construction derived from an underlying sequence of *Zhào Yuánrèn yǒu shū* ‘Zhào Yuánrèn has a book’ and that there is a rule in Mandarin which deletes the verb *yǒu* ‘have’ when it precedes the particle *de*.

‘a/the table(s) that is/are not made of wood’

(69) méi tuō-zhe xínglǐ de lǚkè

not carry-Asp luggage DE passenger

‘a/the passenger(s) who is/are not carrying the luggage’

(70) wǒ zuótiān méi mǎi de shū

I yesterday not bought DE book

‘a/the book(s) that I did not buy yesterday’

Furthermore, the full relative clause analysis of the *de*-marked modification structures can also be supported by the fact that they can merge with high adverbs, such as *xiǎnrán* ‘obviously’, *yíding* ‘certainly’ and *jìngrán* ‘actually’ as exemplified in (71) to (73) below:

(71) xiǎnrán wújiě de xuánàn

obviously unsolvable DE unsettled case

‘a/the case(s) that is/are obviously unsolvable’

(72) yíding dǎobì de gōngchǎng

certainly close down DE factory

‘a/the factory/factories that is/are certainly to be closed down’

(73) jìngrán dāngxuǎn de zàiyě dǎng lǐngxiù

actually elected DE opposition party leader

‘a/the leader(s) of the opposition party/parties that is/are actually elected’

On the other hand, Paul (2005a, 2007) argues that non-predicative adjectives in the *de*-marked modification structure invalidate the claim that every *de*-marked sequence is to be analysed as a relative clause. However, non-predicative *de*-marked modifying phrases can also be negated whereas their *de*-less counterparts may not. An example of the latter phenomenon is provided in (74) below.

(74) a. yuánlái (de) yìsi

original DE meaning

‘original meaning’

b. bù shì yuánlái \*(de) yìsi

not copula original DE meaning

‘non-original meaning’

As a result, it is maintained here that the non-predicative *de*-marked modification can be analysed as a relative clause as the predicative *de*-marked modification. However, does this mean that there is no so-called non-predicative adjective in Mandarin? The answer is definitely negative, since the non-predicative adjective cannot appear in the copula construction as shown in (75).

(75) \*zhè yìsi (bù) shì yuánlái

this meaning not copula original

Intended meaning: ‘this meaning is (not) original.’



Following Paul (2007), I propose that the requirement for the CP headed by the particle *de* to occur within a nominal expression is due to the feature composition of the particle *de*, in which a nominal feature (namely, the uninterpretable categorial [+N] feature<sup>12</sup>) is included. This may explain why the non-predicative adjectives can appear in the *de*-marked modification structure and why they can be negated within the CP headed by the particle *de*. In other words, this uninterpretable categorial [+N] feature makes the CP headed by the particle *de* different from the matrix clause so that modifiers which cannot function as a predicate of the matrix clause are still able to get the intersective reading within the relative clause.

### 4.3.2 Comparison with Previous Proposals

Compared with Cheng's (1986) or Paul's (2007) analysis of *de* as a head-final complementiser, the current head-initial complementiser account of the particle *de* is even more compatible with the essential assumption of head directionality within the Government and Binding framework, no matter whether the head directionality parameter is set for the whole language or per category. From the theoretical point of view of first language acquisition, it seems dubious that there is variation of head directionality within the C category. If headedness must be unidirectional within one category, given Hsieh and Sybesma's (2008a, 2008b) head-initial analysis of complementisers in Sinitic languages, it is more consistent to treat the C head lexicalised by the particle *de* as head-initial. The surface word order is then due to a movement-triggering feature carried by the C head. Although this just shifts parameterisation from a head ordering parameter to the movement-triggering feature,

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<sup>12</sup> This uninterpretable categorial [+N] feature will be matched and deleted when the pair-Merge of CP and the modified nominal phrase occurs. In other words, this uninterpretable categorial [+N] feature gives a signal to the Narrow Syntax to carry out the operation pair-Merge.

it conforms to the current Minimalist assumptions more.

In contrast to Simpson's (2001, 2002) and Saito, Lin and Murasugi's (2008) *de*-as-determiner analysis, the current *de*-as-complementiser analysis can better account for Li's (2001) observation that a relative clause in Mandarin does not require the occurrence of a D head as shown in (19), repeated as (76) below. This is because *de*-marked modifiers can adjoin to the left of *n*Ps given my assumption that the C head realised by *de* bears an uninterpretable categorial [+N] feature that has to be matched and deleted by the interpretable categorial [+N] feature.<sup>13</sup> This Agree operation takes place when the pair-Merge of C and *n*P occurs.

Li (2001: 179; modified):

(76) yī ge fùzé yīngwén de mìshū jiān jiāo xiǎohái de jiājiào  
one Cl charge English DE secretary and teach kid DE tutor  
'a secretary that takes care of English (matter) and tutor that teaches kids'

More precisely, (76) has its internal structure as illustrated in (77) below:<sup>14</sup>

(77) yī ge [<sub>nP</sub> [<sub>nP</sub> [<sub>CP</sub> fùzé yīngwén de] [<sub>nP</sub> mìshū]] jiān [<sub>nP</sub> [<sub>CP</sub> jiāo xiǎohái  
one Cl charge English DE secretary and teach kid  
de] [<sub>nP</sub> jiājiào]]]  
DE tutor  
'a secretary that takes care of English (matter) and tutor that teaches kids'

---

<sup>13</sup> According to my proposal in Chapter Two, the so-called NP is actually  $\sqrt{P}$ . The  $\sqrt{P}$  is assigned the nounhood by the interpretable categorial [N] feature on the *n* head.

<sup>14</sup> Here I assume that the *n* head lexically realised by a classifier can select another *nP*.

As can be seen in the above example, the *de*-marked modifiers adjoin to the left of *n*Ps so that the two *n*Ps can be further co-ordinated by the conjunction word *jiān* ‘and’. The *n*P that results from the co-ordination can then merge with the classifier *ge*.

Furthermore, the current proposal is more consistent with the general assumption that argumental nominal phrases are all DPs rather than NPs. On the other hand, the head-internal analysis of Mandarin relative clauses, such as D. Xu’s (1997) *de*-as-complementiser analysis and Simpson’s (2001, 2002) *de*-as-determiner analysis, has to assume that argumental nominal phrases in Mandarin relative clauses are NPs but not DPs, as shown in (16) and (25). Den Dikken and Singhapreecha’s (2004) small clause analysis, which maintains that the modifier preceding the particle *de* starts out as the predicate of a small clause with the modified noun as its subject, also has to make a similar assumption that argumental nominal phrases in Mandarin are NPs, as shown in (43).

Now consider the antecedent-free and antecedent-dependent *de* constructions, such as (78) and (79), in N. Zhang’s (1999) paper.

N. Zhang (1999: 29; modified):

(78) **antecedent-free *de* construction**

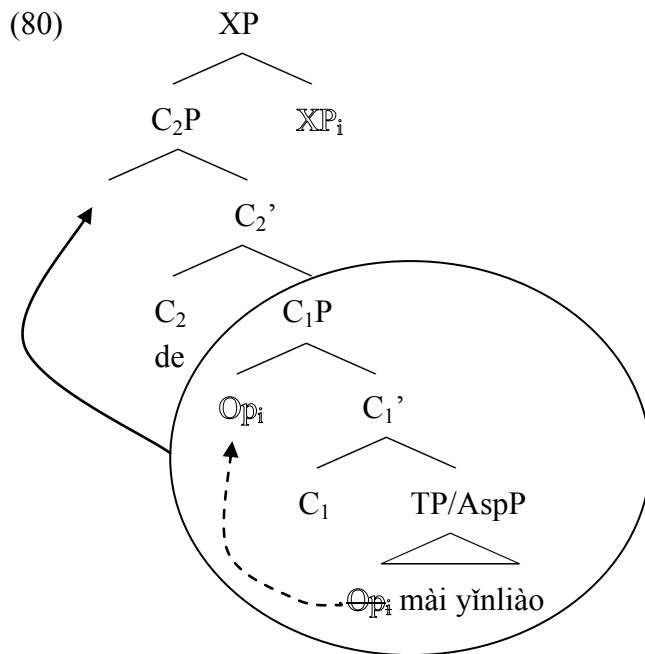
wǒ kànjiàn-le yí ge mài yǐnliào de  
I see-Asp one Cl sell beverage DE  
‘I saw a beverage seller.’

(79) **antecedent-dependent *de* construction**

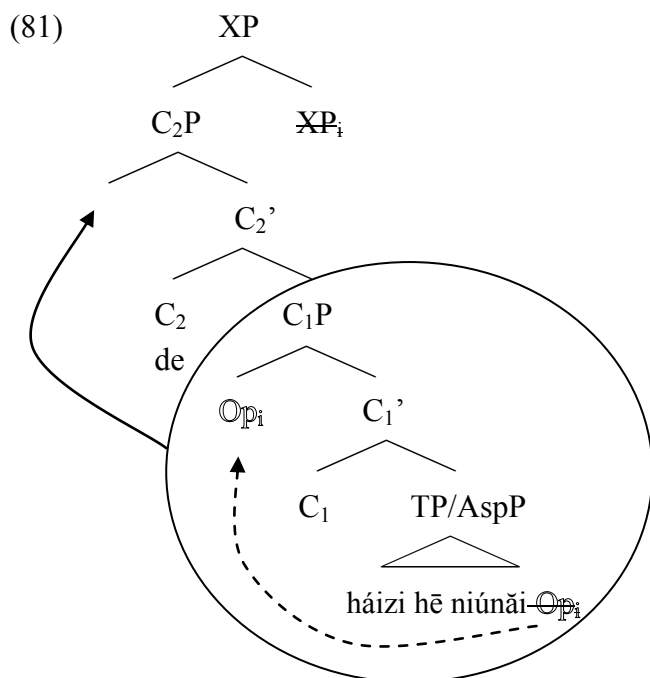
pào chá yào yòng zhèi ge bēizi, bié yòng nà ge háizi hē niúniǎi de  
make tea should use this Cl cup, not use that Cl child drink milk DE

‘Use this cup to make tea; don’t use the one which the kid drinks milk with.’

I propose that the antecedent-free *de* construction, such as (78), can be derived if the C<sub>2</sub>P in structure (57) adjoins to a nominal phrase with a null spell-out as shown in (80), where material in outline signifies an empty category.



As for the antecedent-dependent *de* construction as in (79), I propose that this can be derived if the XP in structure (57) undergoes an ellipsis process in the PF component as shown in (81), where the deleted item is marked by strikethrough.



In other words, in order to account for the semantic interpretations involved, it is assumed that a nominal phrase is underlyingly present in the Narrow Syntax when it is absent after the particle *de* in the surface form.

Compared with Li's (2008) analysis of *de* as subordinating conjunction, the current left-adjunction analysis can provide a better explanation for the fact that the modifier-*de* sequence as in (78) or (79) is always analysed as a nominal expression irrespective of the nature of the preceding modifier. Since the modifier-*de* sequence adjoins to a nominal phrase by the operation Adjunction as illustrated in (80) and (81), it is not surprising that the modifier does not determine the label of the entire modifier-*de* sequence.

### 4.3.3 Modification and Hierarchy

Regarding the high degree of flexibility in terms of positions and reiteration of the *de*-marked modifiers, the current left-adjunction analysis, which takes them as one constituent, can easily account for the multiple occurrences of them within one single nominal phrase in different positions as shown in (48), repeated as (82) below. This is

with the assumption that they can adjoin to different functional projections of a nominal phrase.

C.-C. Tang (2007: 1014; modified):

(82) (xīn de) zhè (xīn de) sān (\*xīn de) běn (xīn de) shū  
new DE this new DE three new DE Cl new DE book  
'(lit.) (new) these (new) three (new) books'

Although in (82) it seems that the *de*-marked modifier can adjoin to three different functional projections of a nominal phrase, following M.-L. Hsieh (2005, 2008), I maintain that there are only two types of relative clause, namely stage-level modifier and individual-level modifier. The former denotes temporary properties adjoining to a DP, while the latter marks permanent properties adjoining to an *nP*.

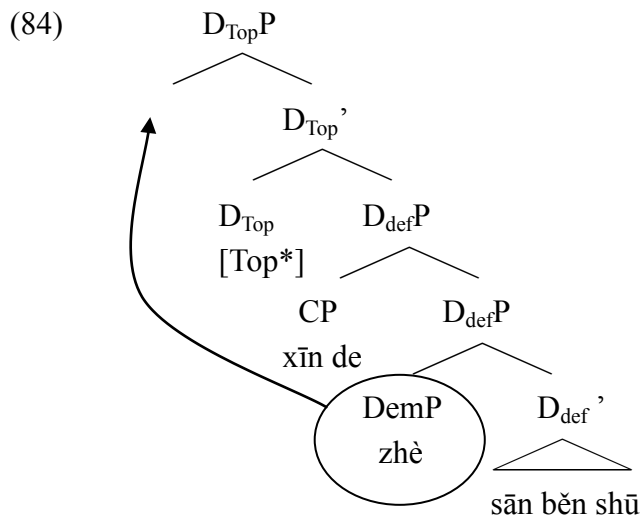
According to theories of adjunct or modifier licensing advocated by Travis (1988) and C.-C. Tang (1990b, 2001), the adjunct or modifier has to be licensed in accordance with the feature specification of the adjoined head (i.e. D or *n*) and be projected under the recursive XP (i.e. DP or *nP*). Therefore, I propose that the *de*-marked modifier may be licensed by the interpretable [Def] feature on the D<sub>def</sub> head or the interpretable [Ref] or [Count] feature on the *n* head (cf. C.-C. Tang 2007).

Given my assumption that the *de*-marked modifier can only adjoin to either DP or *nP*, one may wonder how the *de*-marked modifier can appear between the demonstrative and the numeral as shown in (83) below.

(83) zhè xīn de sān běn shū  
this new DE three Cl book

‘(lit.) these new three books’

Given my assumption of the Split-DP hypothesis in Chapter Three, I propose that the derivation of (83) involves the DP-internal movement of the demonstrative as illustrated in (84) below.<sup>15</sup>



As can be seen, the demonstrative undergoes the process of topicalisation, leading to the surface Dem-modifier-Numeral-CI-N order.

#### 4.4 Marked Modifier in the Other Three Sinitic Languages

In the generative literature, the particles that mark a modification in pre-nominal strings in Cantonese, Taiwan Southern Min and Hakka, have attracted less attention than the particle *de* in Mandarin Chinese. As with the marker *de*, the particle *ge*<sup>3</sup> in

<sup>15</sup> To save space, only the relevant functional projections at the left periphery of the nominal phrase, namely the higher  $D_{top}P$  and the  $D_{def}P$ , are provided here. The left periphery of the nominal phrase in (84) has the fuller structure shown in (i) below:

(i)  $D_{force}P > D_{top}P > D_{foc}P > D_{top}P > D_{def}P$

Cantonese, the particle *ê* in Taiwan Southern Min and the particle *gai<sup>11</sup>* in Hakka are noted as being used in various contexts. Examples of each marker in different contexts are provided below.

Cantonese

(85) Matthews and Yip (1994: 108; modified):

[<sub>DP</sub> leih<sup>5</sup>] ge<sup>3</sup> pahng<sup>5</sup>yauh<sup>5</sup>

you GE friend

‘a/the friend(s) of yours’

(86) Matthews and Yip (1994: 159; modified):

[<sub>AdjP</sub> hou<sup>2</sup>hou<sup>3</sup>haak<sup>3</sup>] ge<sup>3</sup> jan<sup>4</sup>

very hospitable GE person

‘a/the person(s) that is/are really hospitable’

(87) [<sub>PP</sub> hai<sup>2</sup> se<sup>2</sup>zi<sup>6</sup>lau<sup>4</sup> deoi<sup>3</sup>min<sup>6</sup>] ge<sup>3</sup> caan<sup>1</sup>teng<sup>1</sup>

at office opposite GE restaurant

‘a/the restaurant(s) that is/are opposite the office’

(88) [<sub>NP</sub> muk<sup>6</sup>] ge<sup>3</sup> toi<sup>2</sup>

wood GE table

‘a/the table(s) that is/are made of wood’

(89) Matthews and Yip (1994: 110; modified):

[<sub>TP/AspP</sub> sik<sup>1</sup> ngo<sup>5</sup>] ge<sup>3</sup> jan<sup>4</sup>



know me GE person

‘a/the person(s) that know(s) me’

(90) Matthews and Yip (1994: 110; modified):

[<sub>TP/AspP</sub> ngo<sup>5</sup> sik<sup>1</sup>] ge<sup>3</sup> jan<sup>4</sup>

I know GE person

‘a/the person(s) that I know’

Taiwan Southern Min

(91) Teng (2005: 326; modified):

[<sub>DP</sub> lí] ê hîng-lí

you E luggage

‘a/the luggage that belongs to you’

(92) [<sub>AdjP</sub> tsin hònn-kheh] ê lâng

very hospitable E person

‘a/the person(s) that is/are really hospitable’

(93) [<sub>PP</sub> tī toh-á tǐng] ê pue-á

at table up E cup

‘a/the cup(s) that is/are on the table’

(94) [<sub>NP</sub> tshâ] ê toh-á

wood E table

‘a/the table(s) that is/are made of wood’

(95) [TP/AspP ài thák tsheh] ê gín-á

love read book E child

‘a/the child(s) that love(s) reading’

(96) Teng (2005: 318; modified):

[TP/AspP lāu-su siá] ê jī

teacher write E character

‘a/the character(s) that is/are written by the teacher(s)’

Hakka

(97) Lo (1988: 261; modified):

[DP nga<sup>55</sup>] gai<sup>11</sup> hok<sup>2</sup>gau<sup>24</sup>

my GAI school

‘my school’

(98) Lo (1988: 261; modified):

[AdjP dong<sup>53</sup> ciang<sup>33</sup>li<sup>33</sup>] gai<sup>11</sup> ngin<sup>55</sup>

very neat and tidy GAI person

‘a/the person(s) who is/are very neat and tidy’

(99) [PP cai<sup>33</sup> zok<sup>5</sup> hong<sup>33</sup>] gai<sup>11</sup> von<sup>24</sup>kuai<sup>11</sup>

at table up GAI bowls and chopsticks

‘a/the bowls and chopsticks that are on the table’

(100) [<sub>NP</sub> ciau<sup>55</sup>]    gai<sup>11</sup>    zok<sup>5</sup>  
                  wood    GAI    table  
                  ‘a/the table(s) that is/are made of wood’

(101) Lo (1988: 262; modified):

[<sub>TP/AspP</sub> sang<sup>53</sup>    gu<sup>53</sup>]    gai<sup>11</sup>    ban<sup>24</sup>  
                  grow    mould    GAI    rice cake  
                  ‘a/the rice cake(s) that grew mould’

(102) Hashimoto (1973: 448; modified):

[<sub>TP/AspP</sub> ngi<sup>55</sup>    kon<sup>11</sup>]    gai<sup>11</sup>    lia<sup>24</sup>    bun<sup>24</sup>    shu<sup>53</sup>  
                  you    read    GAI    this    Cl    book  
                  ‘this book that you read’

As can be seen in the above examples, these three markers can appear in the same structures as the marker *de* in Mandarin can in nominal expressions. This section will examine if my proposal for Mandarin Chinese data can also work for the other three Sinitic languages. In other words, it will examine whether or not most (if not all) of the marked modification structures in the four Sinitic languages can be analysed in exactly the same way in order to draw conclusions for cross-linguistic syntactic structures.

#### 4.4.1 Cantonese

In most of the literature, the marked modification structure in Cantonese usually serves to provide supporting evidence for a particular analysis of the *de*-marked modification structure in Mandarin (see Den Dikken and Singhapreecha 2004).

However, as pointed out by Matthews and Yip (2001), Cantonese has not only one but three constructions of relative clause as shown in (103) to (105).

Matthews and Yip (2001: 280; modified):

(103) Clause-ge<sup>3</sup>-N

ngo<sup>5</sup> sik<sup>1</sup> ge<sup>3</sup> hok<sup>6</sup>saang<sup>1</sup>

I know GE student

‘a/the student(s) I know’

Matthews and Yip (p.c.):

(104) Clause-(Dem)-(Numeral)-Cl-N

a. ngo<sup>5</sup> se<sup>2</sup> go<sup>2</sup> saam<sup>1</sup> fung<sup>1</sup> seon<sup>3</sup>

I write that three Cl letter

‘those three letters I wrote’

b. ngo<sup>5</sup> se<sup>2</sup> go<sup>2</sup> fung<sup>1</sup> seon<sup>3</sup>

I write that Cl letter

‘the letter I wrote’

c. ngo<sup>5</sup> se<sup>2</sup> fung<sup>1</sup> seon<sup>3</sup>

I write Cl letter

‘the letter I wrote’

(105) Clause-Dem-(Numeral)-Cl-ge<sup>3</sup>-N

a. ngo<sup>5</sup> se<sup>2</sup> go<sup>2</sup> saam<sup>1</sup> fung<sup>1</sup> ge<sup>3</sup> seon<sup>3</sup>

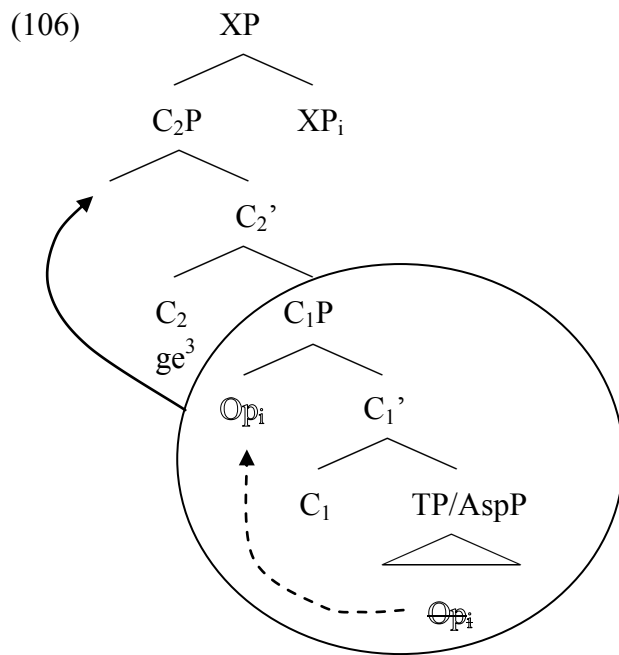
I write that three Cl GE letter

‘those three letters I wrote’

b. ngo<sup>5</sup> se<sup>2</sup> go<sup>2</sup> fung<sup>1</sup> ge<sup>3</sup> seon<sup>3</sup>  
 I write that Cl GE letter  
 ‘the letter I wrote’

In addition to the marked modification structure in (103), which looks similar to the *de*-marked modification structure in Mandarin, there are two other types of marked modification structures in Cantonese. In the following discussion, the term ‘*ge*<sup>3</sup>-marked modification structure’ is used to refer to the first type of marked modification structure as highlighted in (103) for convenience. The marked modification structures shown in (104c) are usually referred to as ‘classifier relatives’. Later I will discuss whether the use of this label is necessary.

This section will firstly focus on the *ge*<sup>3</sup>-marked modification structure and examine if the analysis of the *de*-marked modification structure in Mandarin can fully be applied to Cantonese data. It is proposed that the marked modification structures in both languages are incorporated into the nominal structure by the operation Adjunction. More specifically, it is shown that the particle *ge*<sup>3</sup> is also a head-initial complementiser and that all instances of the *ge*<sup>3</sup>-marked modifying phrases as in (85) to (90) are in fact full forms of relative clauses adjoined to the left of modified phrases. The derivation of the *ge*<sup>3</sup>-marked modification structure is illustrated in (106) below, where the particle *ge*<sup>3</sup> is assumed to be merged in the C<sub>2</sub> position.



Such a full relative clause analysis is based on the fact that all the  $ge^3$ -marked modifying elements, as in (85) to (90), can be negated as shown in (107) to (112) below.

(107)  $m^4$   $hai^6$   $nei^5$   $ge^3$   $pang^4jau^5$   
 not copula you GE friend  
 ‘the friend(s) that do(es) not belong to you’

(108)  $m^4$   $hou^3haak^3$   $ge^3$   $jan^4$   
 not hospitable GE person  
 ‘the person(s) that is/are not hospitable’

(109)  $m^4$   $hai^2$   $baan^6gung^1sat^1$   $deoi^3min^6$   $ge^3$   $caan^1teng^1$   
 not at office opposite GE restaurant

‘the restaurant(s) that is/are not opposite the office’

(110) m<sup>4</sup> hai<sup>6</sup> muk<sup>6</sup> ge<sup>3</sup> toi<sup>2</sup>

not copula wood E table

‘the table(s) that is/are not made of wood’

(111) m<sup>4</sup> sik<sup>1</sup> ngo<sup>5</sup> ge<sup>3</sup> jan<sup>4</sup>

not know me GE person

‘the person(s) that do(es) not know me’

(112) ngo<sup>5</sup> m<sup>4</sup> sik<sup>1</sup> ge<sup>3</sup> jan<sup>4</sup>

I not know GE person

‘the person(s) that I do not know’

Furthermore, the full relative clause analysis of the *ge*<sup>3</sup>-marked modification structures can also be supported by the fact that they can merge with high adverbs, such as *hin*<sup>2</sup>*jin*<sup>4</sup> ‘obviously’, *jat*<sup>1</sup>*ding*<sup>6</sup> ‘certainly’ and *ging*<sup>2</sup>*jin*<sup>4</sup> ‘actually’ as exemplified in (113) to (115) below:

(113) ming<sup>4</sup>hin<sup>2</sup> gaai<sup>2</sup>kyut<sup>3</sup> m<sup>4</sup> dou<sup>2</sup> ge<sup>3</sup> jyun<sup>4</sup>on<sup>3</sup>

obviously solve not Asp GE unsettled case

‘a/the case(s) that is/are obviously unsolvable’

(114) jat<sup>1</sup>ding<sup>6</sup> zap<sup>1</sup>lap<sup>1</sup> ge<sup>3</sup> gung<sup>1</sup>cong<sup>2</sup>

certainly close down GE factory

‘a/the factory/factories that is/are certainly to be closed down’

- (115) ging<sup>2</sup>jin<sup>4</sup> dong<sup>1</sup>syun<sup>2</sup> ge<sup>3</sup> zoi<sup>6</sup>je<sup>5</sup> dong<sup>2</sup> ling<sup>5</sup>zau<sup>6</sup>  
actually elected GE opposition party leader

‘a/the leader(s) of the opposition party/parties that is/are actually elected’

As with Mandarin Chinese, two relative clauses headed by the particle *ge*<sup>3</sup> in Cantonese can be co-ordinated to modify one single nominal phrase as in the sentence below:

- (116) leng<sup>3</sup> ge<sup>3</sup> tung<sup>4</sup> cung<sup>1</sup>ming<sup>4</sup> ge<sup>3</sup> nei<sup>5</sup>zai<sup>2</sup> dou<sup>1</sup> lai<sup>4</sup>-zo<sup>2</sup>  
beautiful GE and smart GE lady all come-Asp

‘The beautiful ladies and the smart ladies all have come.’

According to the current left-adjunction analysis, in the above example there are two coordinated CPs that adjoin to the left of a nominal phrase (namely *nei<sup>5</sup>zai<sup>2</sup>* ‘lady’).

In addition, Cantonese also permits multiple occurrences of *ge*<sup>3</sup>-marked modifiers in one nominal phrase as shown in (117).

- (117) a. loeng<sup>4</sup>hou<sup>2</sup> ge<sup>3</sup> jan<sup>4</sup>wai<sup>4</sup> ge<sup>3</sup> waan<sup>4</sup>ging<sup>2</sup>  
good GE man-made GE environment  
‘good man-made environment’  
b. jan<sup>4</sup>wai<sup>4</sup> ge<sup>3</sup> loeng<sup>4</sup>hou<sup>2</sup> ge<sup>3</sup> waan<sup>4</sup>ging<sup>2</sup>  
man-made GE good GE environment  
‘good man-made environment’



Furthermore, the  $ge^3$ -marked modifiers can show up in different positions within one nominal phrase as illustrated in (118).

- (118) a.  $san^1$   $ge^3$   $nei^1$   $saam^1$   $bun^2$   $syu^1$   
 new GE this three Cl book  
 ‘(lit.) new these three books’
- b.  $nei^1$   $san^1$   $ge^3$   $saam^1$   $bun^2$   $syu^1$   
 this new GE three Cl book  
 ‘(lit.) these new three books’
- c.  $nei^1$   $saam^1$   $bun^2$   $san^1$   $ge^3$   $syu^1$   
 this three Cl new GE book  
 ‘(lit.) these three new books’
- d.  $*nei^1$   $saam^1$   $san^1$   $ge^3$   $bun^2$   $syu^1$   
 this three new GE Cl book

As can be seen from the above examples, the  $ge^3$ -marked modifiers can precede the demonstrative as in (118a) or the noun as in (118c). Moreover, it can intervene between the demonstrative and the numeral as in (118b), but it cannot intervene between the numeral and the classifier as in (118d).

With regard to the high degree of flexibility in terms of positions and reiteration of the  $ge^3$ -marked modifying elements, following my analysis of the particle *de* in Section 4.3.3, I maintain that the  $ge^3$ -marked modifiers may be adjoined to the left of DP or *n*P as their counterparts are in Mandarin. Concerning the derivation of (118b), I propose that it involves the DP-internal topicalisation of the demonstrative.

Furthermore, in line with N. Zhang's (1999) proposal for the NP-less *de* construction in Mandarin, the NP-less *ge*<sup>3</sup>-marked modification structure in Cantonese can also be divided into the antecedent-free and antecedent-dependent *ge*<sup>3</sup> constructions. An example of each type is provided in (119) and (120) respectively.

(119) **antecedent-free *ge*<sup>3</sup> construction**

ngo<sup>5</sup> gin<sup>3</sup> dou<sup>3</sup> jat<sup>1</sup> go<sup>3</sup> maai<sup>6</sup> je<sup>5</sup> jam<sup>2</sup> ge<sup>3</sup>

I see one Cl sell beverage GE

'I saw a beverage seller.'

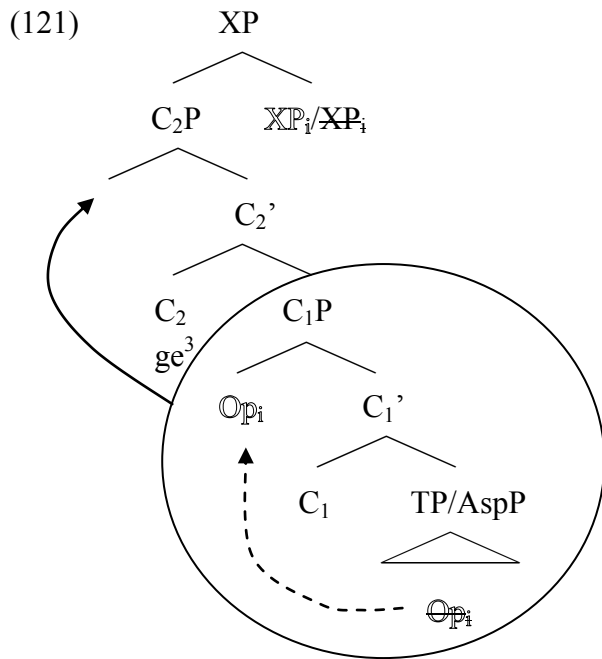
(120) **antecedent-dependent *ge*<sup>3</sup> construction**

cung<sup>1</sup> caa<sup>4</sup> jung<sup>6</sup> nei<sup>1</sup> go<sup>3</sup> bui<sup>1</sup>, mai<sup>5</sup> jung<sup>6</sup> go<sup>2</sup> go<sup>3</sup> sai<sup>3</sup> man<sup>1</sup> zai<sup>2</sup> jam<sup>2</sup> naai<sup>5</sup> ge<sup>3</sup>

make tea use this Cl cup not use that Cl child drink milk GE

'Use this cup to make tea; don't use the one which the kid drinks milk with.'

Concerning these two types of *ge*<sup>3</sup> construction, I maintain that (i) the antecedent-free *ge*<sup>3</sup> construction can be derived if the *ge*<sup>3</sup>-marked modifier adjoins to the left of a nominal phrase with a null spell-out and (ii) the antecedent-dependent *ge*<sup>3</sup> construction can be derived if the modifiee in the *ge*<sup>3</sup>-marked modification structure undergoes an ellipsis process in the PF component. The derivation of these two types of *ge*<sup>3</sup> construction is illustrated in (121), where material in *outline* signifies an empty category and the deleted item is marked by strikethrough.



In other words, in order to account for the semantic interpretations involved, it is assumed that a nominal phrase is underlyingly present in the Narrow Syntax when it is absent after the particle *ge<sup>3</sup>* in the surface form.

Given the above discussion, it is reasonable to conclude that the *ge<sup>3</sup>*-marked modification structures in Cantonese can be analysed in exactly the same way as the *de*-marked modification structure in Mandarin. However, is it possible to extend the current analysis to the other two types of marked modification structures illustrated in (104) and (105), repeated as (122) and (123) below?

Matthews and Yip (p.c.):

(122) Clause-(Dem)-(Numeral)-Cl-N

a. ngo<sup>5</sup> se<sup>2</sup> go<sup>2</sup> saam<sup>1</sup> fung<sup>1</sup> seon<sup>3</sup>

I write that three Cl letter

‘those three letters I wrote’

b. ngo<sup>5</sup> se<sup>2</sup> go<sup>2</sup> fung<sup>1</sup> seon<sup>3</sup>  
 I write that Cl letter  
 ‘the letter I wrote’

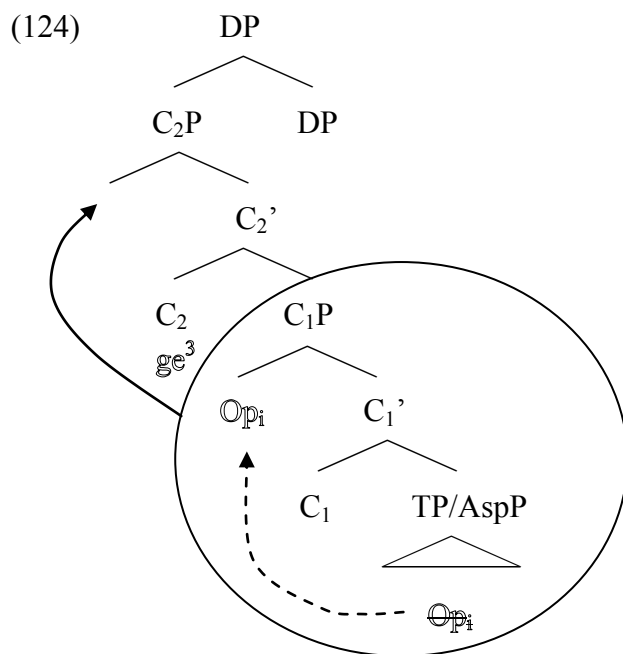
c. ngo<sup>5</sup> se<sup>2</sup> fung<sup>1</sup> seon<sup>3</sup>  
 I write Cl letter  
 ‘the letter I wrote’

(123) Clause-Dem-(Numeral)-Cl-ge<sup>3</sup>-N

a. ngo<sup>5</sup> se<sup>2</sup> go<sup>2</sup> saam<sup>1</sup> fung<sup>1</sup> ge<sup>3</sup> seon<sup>3</sup>  
 I write that three Cl GE letter  
 ‘the three letters I wrote’

b. ngo<sup>5</sup> se<sup>2</sup> go<sup>2</sup> fung<sup>1</sup> ge<sup>3</sup> seon<sup>3</sup>  
 I write that Cl GE letter  
 ‘the letter I wrote’

Consider the Clause-Dem-Numeral-Cl-N sequence and the Clause-Dem-Cl-N sequence first. Since the marked modifier can be adjoined to the left of a DP, it is reasonable to assume that there is a counterpart of the particle *ge*<sup>3</sup> occupying the C<sub>2</sub> position and this linking particle is phonologically null in nature as illustrated in (124), where material in *outline* signifies an element with a null spell-out.



This can easily account for the Clause-Dem-Numeral-CI-N sequence as in (122a) and the Clause-Dem-CI-N sequence as in (122b). In fact, as pointed out by Shi and Li (2001, 2002), Mandarin Chinese also allows the Clause-Dem-Numeral-CI-N sequence and the Clause-Dem-CI-N sequence, where the particle *de* is optionally inserted. Examples can be found in (125) and (126) below:

Shi and Li (2002: 8; modified):

- (125) gāngcái zài zhèr chīfàn nà yí ge rén  
 just at here eat that one CI person  
 ‘the person who was just here a while ago’

Shi and Li (2001: 347; modified):

- (126) wǒ sòng nà běn shū  
 I give that CI book

‘the book that I gave’

In other words, the complementiser of the relative clause is also phonologically null in the above examples. Therefore, we do not have to postulate a distinct analysis for this type of construction.

As far as the Clause-CI-N sequence is concerned, since a subject or object DP can be formed by the CI-N sequence in Cantonese, as shown in Section 2.5, it is suggested here that in (122c) the DP modified is formed by the CI-N sequence and the complementiser of the relative clause is not overtly realised. This is illustrated in (124). Since the CI-N sequence in Mandarin and Hakka cannot appear in the subject position, the Clause-CI-N sequence is ruled out in these two languages. In other words, it is predicted that the Clause-CI-N sequence is only allowed in a language in which the CI-N sequence can function as a subject and an object. In contrast, Sio (2006) treats the Clause-CI-N sequence as the nominal structure with bare modifier, for the relative clause is directly attached to the nominal phrase without any linking particle. Sio’s prediction is that if the CI-N sequence in a language cannot express a definite meaning, the Clause-CI-N sequence will not be allowed in that language. On the other hand, as pointed out in Section 2.5, the CI-N sequences in Hakka can bear a definite interpretation. However, the Clause-CI-N sequence is still not allowed in Hakka. Sio’s account fails to explain why her so-called ‘bare’ modifiers can precede the CI-N sequence in Cantonese but not in Hakka. Therefore, Sio’s bare modifier analysis of the Clause-CI-N sequence is abandoned. Instead, the left-adjunction analysis of the *ge*<sup>3</sup>-marked modification structure is applied to the Clause-CI-N sequence.

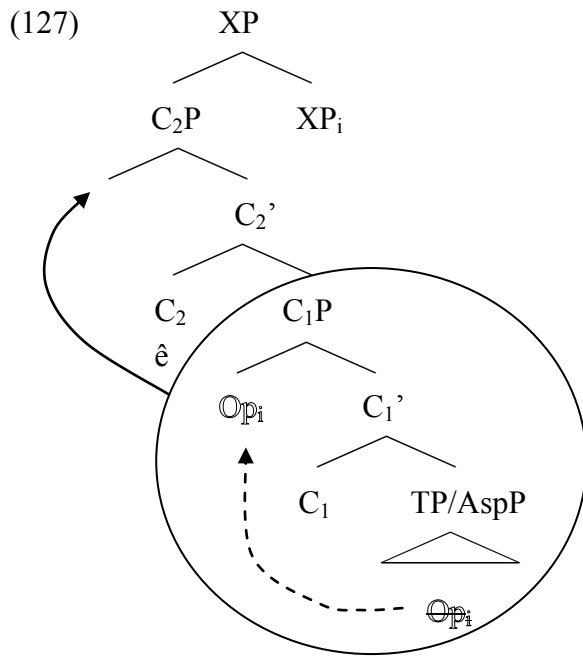
With regard to the Clause-Dem-Numeral-CI-*ge*<sup>3</sup>-N sequence and the Clause-Dem-CI-*ge*<sup>3</sup>-N sequence, it is proposed that the modified nominal phrase is an

*nP* in which *N* moves to *n* and the complementiser of the relative clause is overtly realised by the particle *ge*<sup>3</sup>. In other words, the Dem-Numeral-CI sequence and the Dem-CI sequence here are actually part of the relative clause, namely the object. The current analysis can account for why the modified nominal phrase can only be the object of the preceding modifying clause but not the subject.

In summary, it is shown in this section that it is possible to extend the analysis for the *de*-marked modification structure in Mandarin to all the marked modification structures in Cantonese. In other words, the label of the so-called classifier relative clause may not be necessary. It may be maintained only for the purpose of description.

#### **4.4.2 Taiwan Southern Min**

As with Cantonese, the marked modification structure in Taiwan Southern Min usually serves to provide supporting evidence for a particular analysis of the *de*-marked modification structure in Mandarin. This section will investigate the marked modification structure in Taiwan Southern Min in more detail. It is proposed that the derivation of the *ê*-marked modification structure in Taiwan Southern Min is identical to the derivation of the *de*-marked modification structure in Mandarin. Both of the marked modification structures are incorporated into the nominal structure by the operation Adjunction. More specifically, it is proposed that the particle *ê* is also a head-initial complementiser and that all instances of the *ê*-marked modifying phrases, as in (91) to (96), are full forms of relative clauses adjoined to the left of modified phrases. The derivation of the structure is provided in (127) below, where the particle *ê* is merged in the  $C_2$  position.



Such a full relative clause analysis is based on the fact that all the  $\hat{e}$ -marked modifying phrases, as in (91) to (96), can be negated as shown in (128) to (133) below.

(128) m̄    s̄    lí    ê    h̄ng-lí  
 not copula    you E    luggage  
 ‘the luggage that does not belong to you’

(129) b̄    hònn-kheh    ê    l̄ng  
 not hospitable    E    person  
 ‘the person(s) that is/are not hospitable’

(130) b̄    t̄    toh-á    ting    ê    pue-á  
 not at table    up    E    cup  
 ‘the cup(s) that is/are not on the table’



(131) m̄ s̄ tshâ ê toh-á  
not copula wood E table  
‘the table(s) that is/are not made of wood’

(132) bô ài thák tsheh ê gín-á  
not love read book E child  
‘the child(s) that do(es) not like reading’

(133) lāu-su bô siá ê jī  
teacher not write E character  
‘the character(s) that is/are not written by the teacher(s)’

Furthermore, the full relative clause analysis of the *ê*-marked modification structures can also be supported by the fact that they can merge with high adverbs, such as *hun-bîng* ‘obviously’, *it-tīng* ‘certainly’ and *kìng-liân* ‘actually’ as exemplified in (134) to (136) below:

(134) hun-bîng teh kóng pèh-tshát ê gín-á  
obviously Asp say lie E child  
‘a/the child(s) that is/are obviously telling a lie’

(135) it-tīng tó ê kang-tiūnn  
certainly close down E factory  
‘a/the factory/factories that is/are certainly to be closed down’

- (136) kîng-liân tòng-suán ê tsāi-ia tóng tsú-sik  
 actually elected E opposition party leader  
 ‘a/the leader(s) of the opposition party/parties that is/are actually elected’

As with Mandarin Chinese and Cantonese, two relative clauses headed by the particle *ê* in Taiwan Sothern Min can be co-ordinated to modify one single nominal phrase as illustrated in the sentence below:

- (137) suí ê kah khiáu ê koo-niû lóng lâi ah  
 beautiful E and smart E lady all come SFP  
 ‘The beautiful lady and the smart lady both have come.’  
 ‘The beautiful ladies and the smart ladies all have come.’

According to the current left-adjunction analysis, in the above example there are two coordinated CPs that adjoin to the left of a nominal phrase (namely *koo-niû* ‘lady’).

Furthermore, Taiwan Sothern Min also allows multiple occurrences of *ê*-marked modifiers in a single nominal phrase as shown in (138).

- (138) a. liông-hó ê jîn-úi ê khuân-kíng  
 good E man-made E environment  
 ‘good man-made environment’  
 b. jîn-úi ê liông-hó ê khuân-kíng  
 man-made E good E environment  
 ‘good man-made environment’

In addition, the  $\hat{e}$ -marked modifiers can appear in different positions within one nominal phrase as in (139).

- (139) a. sin     $\hat{e}$     tsit/tse    sann    pún    tsheh  
           new    E    this        three    Cl        book  
           ‘(lit.) new these three books’
- b. tsit/tse sin     $\hat{e}$     sann    pún    tsheh  
           this    new E    three    Cl        book  
           ‘(lit.) these new three books’
- c. tsit/tse sann    pún sin     $\hat{e}$     tsheh  
           this        three    Cl    new E    book  
           ‘(lit.) these three new books’
- d. \* tsit/tse    sann    sin     $\hat{e}$     pún tsheh  
           this        three    new E    Cl    book

As can be seen from the above examples, the  $\hat{e}$ -marked modifiers can precede the demonstrative as in (139a) or the noun as in (139c). Moreover, it can intervene between the demonstrative and the numeral as in (139b), but it cannot intervene between the numeral and the classifier as in (139d). Example (139d) is ruled out because the Cl-N sequence is not allowed in Taiwan Southern Min as discussed in Section 2.5 so that it cannot be co-indexed with the null relative operator.

Concerning the high degree of flexibility in terms of positions and reiteration of the  $\hat{e}$ -marked modifiers, following my analysis of the particle *de* in Section 4.3.3, I suggest that the  $\hat{e}$ -marked modifiers are able to adjoin to the left of DP or *nP*. As far as

the derivation of (139b) is concerned, I assume that it involves the DP-internal topicalisation of the demonstrative to the Spec of D<sub>top</sub>P.

Furthermore, with regard to N. Zhang's (1999) proposal for the NP-less modification construction in Mandarin, the NP-less *ê*-marked modification construction in Taiwan Southern Min can also be divided into two types, namely the antecedent-free and antecedent-dependent *ê* constructions. An example of each type is provided in (140) and (141) respectively.

(140) **antecedent-free *ê* construction**

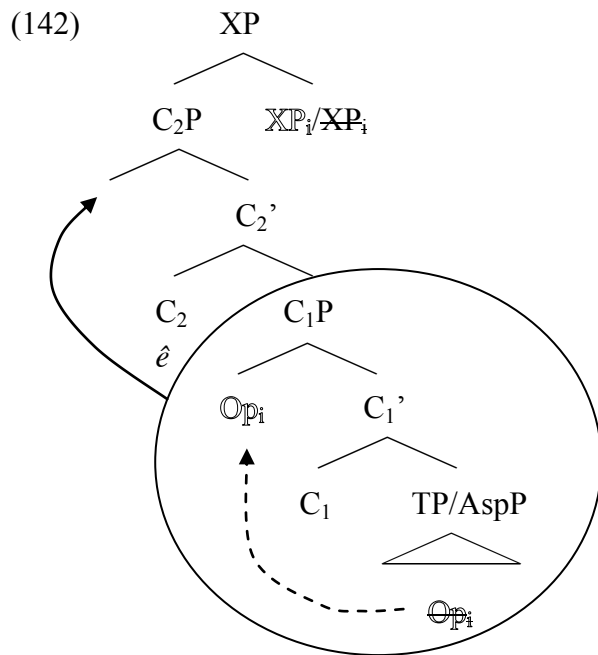
guá khuànn-tiòh tsit ê buē ím-liāu ê  
 I see-Asp one Cl sell beverage E  
 'I saw a beverage seller.'

(141) **antecedent-dependent *ê* construction**

phàu tê ài iōng tsit tè pue-á, mài iōng hit tè  
 make tea should use this Cl cup not use that Cl  
**gín-á lim gû-ling ê**  
 child drink milk E  
 'Use this cup to make tea; don't use the one which the kid drinks milk with.'

Regarding these two types of *ê* constructions, I maintain that: (i) the antecedent-free *ê* construction can be derived if the XP in the structure (127) adjoins to a nominal phrase with a null spell-out and (ii) the antecedent-dependent *ê* construction can be derived if the XP in the structure (127) undergoes an ellipsis process in the PF component. The derivation of these two types of *ê* construction is

illustrated in (142), where material in *outline* signifies an empty category and the deleted item is marked by strikethrough.



In other words, in order to account for the semantic interpretations involved, it is proposed that a nominal phrase is underlyingly present in the Narrow Syntax when it is absent after the particle  $\hat{e}$  in the surface form.

Given the above discussion, it is reasonable to conclude that the  $\hat{e}$ -marked modification structure in Taiwan Southern Min can be analysed in exactly the same way as the *de*-marked modification structure in Mandarin. However, as shown in Chapter Two, the lexical item  $\hat{e}$  can still function as a (general) classifier in Taiwan Southern Min. It is suggested that the classifier  $\hat{e}$  and the modification marker  $\hat{e}$  are actually two homonymous items, since the classifier  $\hat{e}$  and the modification marker  $\hat{e}$  can co-occur in the same nominal phrase, as shown in (143).

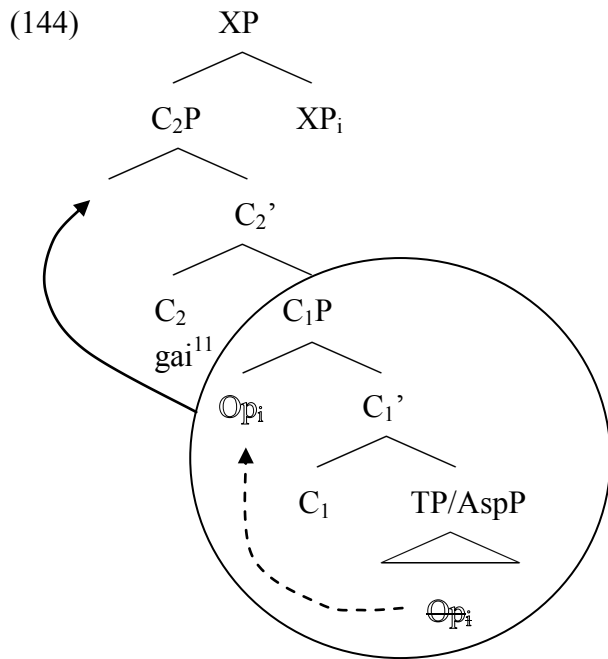
(143) lim      tê   ê      gōo      ê      lāng

drink tea E five Cl person  
'five people who drank tea'

Furthermore, the modification marker  $\hat{e}$  can co-occur with other classifiers as shown in (139). This is similar to the situation in English where there are two homonymous *thats*, one functioning as a demonstrative and the other a complementiser.

### 4.4.3 Hakka

In contrast to Cantonese and Taiwan Southern Min, the marked modification structure in Hakka is less well-studied in the literature. Therefore, this section will investigate the marked modification structure in Hakka in more detail. It is proposed that the derivation of the  $gai^{11}$ -marked modification structure in Hakka is also identical to the derivation of the *de*-marked modification structure in Mandarin. Both of the marked modification structures are incorporated into the nominal structure by the operation Adjunction. More specifically, it is proposed that the particle  $gai^{11}$  is also a head-initial complementiser and that all instances of the  $gai^{11}$ -marked modifying phrases as in (97) to (102) are full forms of relative clauses adjoined to the left of modified phrases. The derivation of the structure is illustrated in (144) below, where the particle  $gai^{11}$  is base-generated in the  $C_2$  position.



Such a full relative clause analysis is based on the fact that all the *gai*<sup>11</sup>-marked modifiers, as in (97) to (102), can be negated as shown in (145) to (150) below.

(145) m<sup>55</sup> he<sup>11</sup> nga<sup>55</sup> gai<sup>11</sup> hok<sup>2</sup>gau<sup>24</sup>  
 not copula my GAI school  
 ‘the school that is not mine’

(146) mo<sup>55</sup> ciang<sup>33</sup>li<sup>33</sup> gai<sup>11</sup> ngin<sup>55</sup>  
 not neat and tidy GAI person  
 ‘the person(s) who is/are not neat and tidy’

(147) mo<sup>55</sup> coi<sup>33</sup> zok<sup>5</sup> hong<sup>33</sup> gai<sup>11</sup> von<sup>24</sup>kuai<sup>11</sup>  
 not at table up GAI bowls and chopsticks  
 ‘the bowls and chopsticks that are not on the table’

(148) m<sup>55</sup> he<sup>11</sup> ciau<sup>55</sup> gai<sup>11</sup> zok<sup>5</sup>  
 not copula wood GAI table  
 ‘the table(s) that is/are not made of wood’

(149) mo<sup>55</sup> sang<sup>53</sup> gu<sup>53</sup> gai<sup>11</sup> ban<sup>24</sup>  
 not grow mould GAI rice cake  
 ‘the rice cake(s) that do(es) not grew mould’

(150) ngi<sup>55</sup> mo<sup>55</sup> kon<sup>11</sup> gai<sup>11</sup> lia<sup>24</sup> bun<sup>24</sup> shu<sup>53</sup>  
 you not read GAI this Cl book  
 ‘this book that you did not read’

In addition, the full relative clause analysis of the *gai*<sup>11</sup>-marked modification structures can be supported by the fact that they can merge with high adverbs, such as *fun*<sup>53</sup>*min*<sup>55</sup> ‘obviously’, *rhit*<sup>5</sup>*tin*<sup>33</sup> ‘certainly’ and *gin*<sup>11</sup>*rhen*<sup>55</sup> ‘actually’ as exemplified in (151) to (153) below:

(151) fun<sup>53</sup>min<sup>55</sup> gong<sup>24</sup> fa<sup>53</sup>liau<sup>53</sup> gai<sup>11</sup> se<sup>11</sup>ngin<sup>55</sup>  
 obviously say lie GAI child  
 ‘a/the child(s) that obviously told a lie’

(152) rhit<sup>5</sup>tin<sup>33</sup> do<sup>24</sup> gai<sup>11</sup> gung<sup>53</sup>chong<sup>55</sup>  
 certainly close down GAI factory  
 ‘a/the factory/factories that is/are certainly to be closed down’



(153) gin<sup>11</sup>rhen<sup>55</sup>    dong<sup>24</sup>sien<sup>24</sup>    gai<sup>11</sup>    cai<sup>33</sup>rha<sup>53</sup>    dong<sup>24</sup>    zhu<sup>24</sup>sit<sup>2</sup>  
 actually            elected            GAI    opposition    party    leader  
 ‘a/the leader(s) of the opposition party/parties that is/are elected’

As with the other three Sinitic languages, two relative clauses headed by the particle *gai*<sup>11</sup> in Hakka can be co-ordinated to modify one single nominal phrase as illustrated in the sentence below:

(154) ziang<sup>53</sup>    gai<sup>11</sup>    lau<sup>53</sup>    kiau<sup>24</sup>    gai<sup>11</sup>    se<sup>11</sup>moi<sup>11</sup>    du<sup>33</sup>    loi<sup>55</sup>    le<sup>53</sup>  
 beautiful    GAI    and    smart    GAI    lady    all    come    SFP  
 ‘The beautiful lady and the smart lady both have come.’  
 ‘The beautiful ladies and the smart ladies all have come.’

According to the current left-adjunction analysis, there are two coordinated CPs that adjoin to the left of a nominal phrase (namely *se*<sup>11</sup>*moi*<sup>11</sup> ‘lady’) in the above example.

Furthermore, Hakka allows multiple occurrences of *gai*<sup>11</sup>-marked modifiers in a single nominal phrase as well. This is illustrated in (155).

(155) a. dong<sup>53</sup> ho<sup>24</sup>    gai<sup>11</sup>    ngin<sup>55</sup>vui<sup>55</sup>    gai<sup>11</sup>    kuan<sup>55</sup>gin<sup>11</sup>  
 quite    good    GAI    man-made    GAI    environment  
 ‘a quite good man-made environment’  
 b. ngin<sup>55</sup>vui<sup>55</sup>    gai<sup>11</sup>    dong<sup>53</sup>    ho<sup>24</sup>    gai<sup>11</sup>    kuan<sup>55</sup>gin<sup>11</sup>  
 man-made    GAI    quite    good    GAI    environment  
 ‘a quite good man-made environment’

In addition, the *gai*<sup>11</sup>-marked modifiers can appear in different positions within one nominal phrase as shown in (156).

- (156) a. sin<sup>53</sup>    gai<sup>11</sup>    lia<sup>24</sup>    sam<sup>53</sup>    bun<sup>24</sup>    shu<sup>53</sup>  
           new    GAI    this    three    Cl    book  
           ‘(lit.) new these three books’
- b. lia<sup>24</sup>    sin<sup>53</sup>    gai<sup>11</sup>    sam<sup>53</sup>    bun<sup>24</sup>    shu<sup>53</sup>  
           this    new    GAI    three    Cl    book  
           ‘(lit.) these new three books’
- c. lia<sup>24</sup>    sam<sup>53</sup>    bun<sup>24</sup>    sin<sup>53</sup>    gai<sup>11</sup>    shu<sup>53</sup>  
           this    three    Cl    new    GAI    book  
           ‘(lit.) these three new books’
- d. \*lia<sup>24</sup>    sam<sup>53</sup>    sin<sup>53</sup>    gai<sup>11</sup>    bun<sup>24</sup>    shu<sup>53</sup>  
           this    three    new    GAI    Cl    book

As can be seen from the above examples, the *gai*<sup>11</sup>-marked modifiers can precede the demonstrative as in (156a) or the noun as in (156c). Moreover, it can intervene between the demonstrative and the numeral as in (156b), but it cannot intervene between the numeral and the classifier as in (156d). Example (156d) is ruled out given the fact that the Cl-N sequence in Hakka cannot function as a subject so that it cannot be co-indexed with the null relative operator.

Concerning the high degree of flexibility in terms of positions and reiteration of the *gai*<sup>11</sup>-marked modifiers, following my analysis of the particle *de* in Section 4.3.3, I propose that the *gai*<sup>11</sup>-marked modifiers are able to adjoin to the left of DP or *nP*. As far as the derivation of (156b) is concerned, I assume that it involves DP-internal

topicalisation of the demonstrative.

Furthermore, with regard to N. Zhang's (1999) proposal for the NP-less modification construction in Mandarin, the NP-less *gai<sup>11</sup>*-marked modification construction in Hakka can also be divided into two types, namely the antecedent-free and antecedent-dependent *gai<sup>11</sup>* constructions. An example of each type is provided in (157) and (158) respectively.

(157) **antecedent-free *gai<sup>11</sup>* construction**

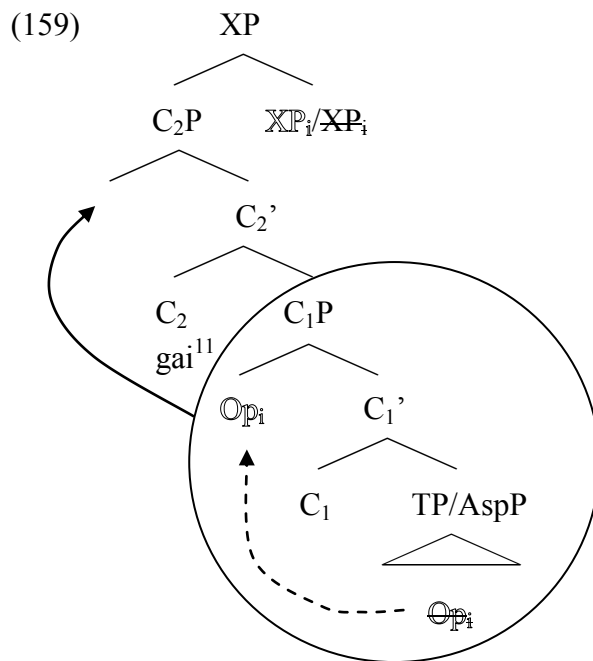
nga<sup>55</sup>    kon<sup>11</sup>-do<sup>24</sup>    rhit<sup>5</sup> gai<sup>11</sup> mai<sup>33</sup>    rhim<sup>24</sup> liau<sup>33</sup>    gai<sup>11</sup>  
I        see-Asp        one Cl    sell        beverage        GAI  
'I saw a beverage seller.'

(158) **antecedent-dependent *gai<sup>11</sup>* construction**

pau<sup>11</sup>    ca<sup>55</sup>    oi<sup>11</sup>    rhung<sup>33</sup>    lia<sup>24</sup> zhak<sup>5</sup>    bui<sup>53</sup>er<sup>55</sup>, mo<sup>55</sup>  
make    tea    should    use        this    Cl        cup    not  
rhung<sup>33</sup>    gai<sup>55</sup>    zhak<sup>5</sup>    se<sup>11</sup>ngin<sup>55</sup>er<sup>55</sup>    shit<sup>2</sup>    nen<sup>11</sup>    gai<sup>11</sup>  
use        that        Cl        child        eat        milk        GAI  
'Use this cup to make tea; don't use the one which the kid drinks milk with.'

Regarding these two types of *gai<sup>11</sup>* construction, I maintain that: (i) the antecedent-free *gai<sup>11</sup>* construction will be derived if the XP in structure (144) adjoins to the left of a nominal phrase with a null spell-out and (ii) the antecedent-dependent *gai<sup>11</sup>* construction will be derived if the XP in structure (144) undergoes an ellipsis process in the PF component. The derivation of these two types of *gai<sup>11</sup>* construction is illustrated in (159), where material in outline signifies an empty category and the

deleted item is marked by strikethrough.



In other words, in order to account for the semantic interpretations involved, it is assumed that a nominal phrase is underlyingly present in the Narrow Syntax when it is absent after the particle *gai<sup>11</sup>* in the surface form.

Given the above discussion, it is reasonable to conclude that the *gai<sup>11</sup>*-marked modification structure in Hakka can also be analysed in exactly the same way as the *de*-marked modification structure in Mandarin. However, as shown in Chapter Two, the lexical item *gai<sup>11</sup>* can still function as a classifier in Hakka. It is suggested that there are actually two different kinds of *gai<sup>11</sup>*, one functioning as a classifier and the other a complementiser, since the classifier *gai<sup>11</sup>* and the modification marker *gai<sup>11</sup>* can co-occur in the same nominal phrase, as illustrated in (160).

- (160) *ngai<sup>55</sup> gau<sup>55</sup> gai<sup>11</sup> rhit<sup>5</sup> gai<sup>11</sup> hok<sup>2</sup>sang<sup>53</sup>*  
 I teach GAI one Cl student

‘one student that I taught’

This is similar to the particle *ê* in Taiwan Southern Min, which also has two different kinds, one functioning as a general classifier and the other a complementiser.

#### 4.5 Bare Adjectival Modifiers

Generally speaking, almost all languages permit adjectives to modify nouns. In some languages, adjectival modification is restricted to a single adjective phrase. Further adjectives have to either be co-ordinated, introduced by apposition, or introduced in a relative clause. For instance, Simpson (2005: 806, n. 1) reports that two adjectival modifiers in Thai and Nung have to be conjoined whereas in Indonesian they are introduced in a relative clause. In other languages, such as Sinitic languages and English, multiple adjectives are allowed. In these languages, there are clearly cross-linguistic tendencies in the ordering of adjectives. This section focuses on the effect that bare adjectival modifiers bring to the interpretation of Sinitic nominal expressions and investigates the way in which bare modifiers are incorporated into the syntactic structures set out in the previous two chapters.

Concerning the difference between the structures of bare and marked modifiers, it is maintained that these two constructions are derived from different syntactic operations. More specifically, I propose that the bare modifier is base-generated in the Spec of a functional or lexical projection, whereas the marked modifier is a full relative clause adjoining to the left of the nominal phrase by the operation Adjunction. Such a proposal is based on the fact that the marked modification structure, but not the bare modification structure, allows negation as shown in (161) and merger with high adverbs (i.e. *xiǎnrán* ‘obviously’ in Mandarin) as shown in (162).

(161) bù piàoliàng \*(de) fangzǐ  
not gorgeous DE house  
'a/the house(s) that is/are not gorgeous'

(162) xiǎnrán wújiě \*(de) xuánàn  
obviously unsolvable DE unsettled case  
'a/the case(s) that is/are obviously unsolvable'

In contrast to Romance languages, in which DP-internal prenominal adjectives are typically attributive and postnominal adjectives are typically predicative, bare adjectives in Sinitic languages are mainly prenominal and a DP-internal prenominal adjective can be either attributive or predicative. This is exemplified in (163) to (166).

(163) Mandarin

a. Attributive

jīmì wénjiàn  
top-secret document  
'top-secret document(s)'

b. Predicative

cōngmíng rén  
smart person  
'smart person(s)'

(164) Cantonese

a. Attributive

gei<sup>1</sup>mat<sup>6</sup>    man<sup>4</sup>gin<sup>2</sup>  
top-secret    document  
'top-secret document(s)'

b. Predicative

cung<sup>1</sup>ming<sup>4</sup>    jan<sup>4</sup>  
smart            person  
'smart person(s)'

(165) Taiwan Southern Min

a. Attributive

ki-bit            bûn-kiānn  
top-secret    document  
'top-secret document(s)'

b. Predicative

gōng    lāng  
stupid    person  
'stupid person(s)'

(166) Hakka

a. Attributive

gi<sup>53</sup>met<sup>2</sup>    vun<sup>55</sup>kien<sup>33</sup>  
top-secret    document  
'top-secret document(s)'

b. Predicative

cung<sup>53</sup>min<sup>55</sup>    ngin<sup>55</sup>

smart      person  
'smart person(s)'

The distinction between attributive and predicative adjectives in the above examples is based on whether a DP-internal adjective can be paraphrased by means of a clause containing an overt copula and the adjective in predicative position. If a bare adjectival modifier does not allow the paraphrase with a copula construction, it is called 'attributive'; if it allows, it is termed 'predicative' (Alexiadou, Haegeman and Stavrou 2007).

As pointed out by Sproat and Shih (1988, 1991), multiple adjectives modifying a noun can be hierarchically ranked as shown in (167).

Sproat and Shih (1991: 565; modified):

(167) Quality > Size > Shape > Colour > Provenance

In other words, stacked adjectival modifiers observe ordering restrictions as exemplified in (168).

(168) a. Size > Colour

xiǎo      bái      huāping

small   white   vase

'small white vase(s)'

\*bái      xiǎo      huāping

white   small   vase

Intended meaning: 'white small vase(s)'



Sproat and Shih (1991: 566-567; modified):

b. Quality > Shape

hǎo yuán pánzi

good round plate

‘nice round plate(s)’

\*yuán hǎo pánzi

round good plate

Intended meaning: ‘round nice plate(s)’

c. Size > Shape

xiǎo fāng zhuōzi

small square table

‘small square table(s)’

\*fāng xiǎo zhuōzi

square small table

Intended meaning: ‘square small table(s)’

Sproat and Shih suggest that the source for ordering restrictions should not be regarded as part of the syntax of adjectives or nominal phrases. Instead, they believe that there is a cognitive and semantic basis for the ordering in (167).

Within the traditional adjunction analysis of adjectives, the observed linear ordering restrictions are unexpected, given that stacked adjectives are analysed in terms of iterated adjunction to a single category (namely, NP). It is normally assumed that there is no ordering constraint on constituents adjoined to a single node. As a result, there are no syntactic principles that could select among various adjunction orders to a single node.

Within the current generative framework, one approach that has been pursued is to identify individual adjective classes with specific functional heads. They are assumed to exist independently in the functional sequence. For instance, Cinque (1994) suggests that the adjectival ordering restriction as in (167) can be captured in terms of a layered functional structure within the nominal phrase: different layers of nominal structure correspond to the attachment sites of different categories of adjective. In other words, the linear ordering of multiple adjectives can be viewed as a direct reflex of the hierarchical ordering of dedicated functional categories with which it is associated. With this aim in mind, Scott (1998, 2002) provides a more refined ordering in (169), where *subjective comment* and *evidential* corresponds to *quality* in (167).

Scott (2002: 114; modified):

(169) Subjective comment > Evidential > Size > Length > Height > Speed >  
Depth > Width > Weight > Temperature > Wetness > Age > Shape >  
Colour > Nationality/Origin > Material

However, Svenonius (2008) has criticised this approach, arguing that it does not have much explanatory force, since the categories proposed are not well-motivated outside the adjectival ordering phenomenon that they are introduced to describe. In addition, the observed orderings are in fact not as rigid as this approach would predict. As a result, Svenonius proposes that the linear ordering of stacked adjectives derive from the hierarchical ordering of other, independently-motivated functional categories (i.e. *nP*, *CIP*)<sup>16</sup> given that expansions of DP-internal functional structure have been

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<sup>16</sup> In contrast to my analysis where the classifier is the lexical realisation of the *n* head, Svenonius

undertaken on independent grounds to account for the relative order of head-like elements such as articles, classifiers and plural markers and the relative order of phrasal elements such as numerals and demonstratives. In other words, fewer dedicated functional projections are needed in such an approach. However, if separate functional projections for adjectives are needed at all, they can be merged on an as-needed basis.

Svenonius' (2008) approach is to explore the possibility that dependents of the extended projection of N can be ordered by reference to independently motivated semantic properties of the functional sequence. More specifically, he matches the decomposition of DP motivated by the order of adjectives to the decomposition of DP motivated by the order of other elements such as articles, demonstratives, numerals, classifiers, and plural markers. Since it is more minimalist in spirit than the other one which countenances more functional categories or projections, the remaining part of this section is devoted to testing whether Svenonius' approach can account for the Sinitic language data.

According to Svenonius (2008), the orderings in (167) and (169) can be overridden by focalisation as shown in (170).

Svenonius (2008: 35):

(170) a. big square table; \*square big table; SQUARE big table

b. expensive wooden table; \*wooden expensive table; WOODEN  
expensive table

c. tasty French cheese; \*French tasty cheese; FRENCH tasty cheese

---

treats classifiers as the heads of other functional projections (namely, UNIT for the numeral classifier, SORT for the sortal classifier and *n* for the noun classifier).

By contrast, as illustrated in (171) below, Sinitic languages do not employ prosody as a means of focalisation of adjectives to override the ordering in either (167) or (169).

(171) a. xiǎo      bái      huāping

small   white   vase

‘small white vase(s)’

b. \*bái      xiǎo      huāping

white   small   vase

c. \*BÁI      xiǎo      huāping

white   small   vase

Intended meaning: ‘WHITE small vase(s)’

On the other hand, as shown in Section 3.2.2, focalisation of adjectives (more precisely, DegP) by other means is possible in the four Sinitic languages. Therefore, it is not surprising to see that the orderings in (167) and (169) can be overridden by the focalisation of adjectives. Examples of Mandarin are provided in (172) and (173) below:<sup>17</sup>

(172) Size vs. Colour

a. xiǎo      bái      huāping

small   white   vase

‘small white vase(s)’

---

<sup>17</sup> It is not the same sort of focus as Svenonius is using. The examples I provide are presentational focus, whereas the examples Svenonius uses are contrastive focus.

- b. \*bái xiǎo huāping  
white small vase
- c. chāo bái xiǎo huāping  
very white small vase  
'VERY WHITE small vase(s)'

(173) Size vs. Shape

- a. xiǎo fāng zhuōzi  
small square table  
'small square table(s)'
- b \*fāng xiǎo zhuōzi  
square small table
- c. zhèng fāng xiǎo zhuōzi  
exactly square small table  
'EXACTLY SQUARE small table'

(174) Subjective comment vs. Nationality/Origin

- a. měiwèi fāshì xǐbǐng  
tasty French cake  
'tasty French cake(s)'
- b. \*fāshì měiwèi xǐbǐng  
French tasty cake
- c. chún fāshì měiwèi xǐbǐng  
truly French tasty cake  
'TRULY FRENCH tasty cake(s)'

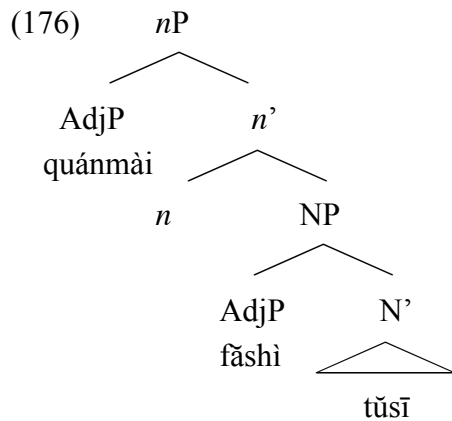
As can be seen above, if one of the adjectives is modified by a degree word, the ordering constraints in (167) and (169) lose their predictive power.

In addition to focused adjectives, there are idiomatic adjectives that do not obey the ordering restrictions in either (167) or (169). According to Marantz (2001), the *n* level is the level of lexical idiosyncrasy; hence idiomatically combined adjectives must merge below it. Consider the following examples:

(175) Nationality/Origin vs. Material

- a. fàshì          quánmài          tǔsī  
      French      whole-wheat      toast  
      ‘French wholemeal toast’
- b. quánmài          fǎshì          tǔsī  
      whole-wheat      French      toast  
      ‘French toast made with wholemeal bread’

The expression *fǎshì tǔsī* ‘French toast’ refers to a fried battered bread breakfast dish. The idiom persists even when *fǎshì tǔsī* is modified by another adjective, such as *quánmài* ‘whole-wheat’, so that *quánmài fǎshì tǔsī* could be a fried battered bread breakfast dish made with wholemeal bread. On the other hand, if an adjective is inserted below *fǎshì* ‘French’, as in *fǎshì quánmài tǔsī*, the idiomatic reading is totally lost. In other words, if regular merged, compositional adjectives can only be merged outside *nP*, whereas idiomatic adjectives are merged below *nP* so that the regular adjective cannot intervene between the idiomatic adjective and the noun. The derivation of the idiomatic meaning is illustrated in (176) below:



As shown, an adjective can only have an idiomatic meaning in the nominal phrase when it is base-generated below the *n* head, and non-idiomatic adjectives must be merged above the *n* head.

Overall, the independently motivated structures for the decomposition of DP do not offer the sort of fine-grained differentiation suggested by Scott's (1998, 2002) analysis. However, Scott's hierarchy does not seem to admit the necessary flexibility reported in this section. In contrast, within Svenonius-style analysis, principles of economy might favour fitting adjectives into the independently motivated structure when possible, resulting in favoured orders but allowing reverse orders when semantically motivated.

In both Cinque-style and Svenonius-style analyses, the prenominal adjective is assumed to be accommodated in the Spec position. In other words, prenominal adjectives are syntactic phrasal elements. One may wonder what leads to such an assumption. Cross-linguistically speaking, stacked adjectives display inflection for Case and  $\phi$ -features. Within the early Minimalist perspective (Chomsky 1995), adjectives can only merge into Spec positions, for the Spec-Head relation is the only structural configuration where they can check their features. As far as Sinitic





Movement Constraint.

Furthermore, the (predicative) adjective can appear independently of the presence of a noun when appearing as the predicate of a sentence, as shown in (178) below:

- (178) a. yǎnjiǎng    hǎo    jīngcǎi  
          speech    very    fantastic  
          ‘The speech was very fantastic.’
- b. fāngzǐ    zhēn    háohuá  
          house    so    extravagant  
          ‘The house is so extravagant.’
- c. kètīng    tèbié    dà  
          living room particular big  
          ‘The living room is so big.’
- d. nà    ge    nǚhái    chāo    piàoliàng  
          that    Cl    girl    so    pretty  
          ‘That girl is so pretty.’
- e. huāyuán    hěn    měili  
          garden    very    beautiful  
          ‘The garden is very beautiful.’

This further confirms the maximal projection status of the adjective. Therefore, it is concluded that adjectives are base-generated at the Spec of an extended projection of a noun.

#### 4.6 Summary

This chapter has investigated the ways in which modifiers of nominal phrases in Sinitic languages are incorporated into the syntactic structures set out in the previous two chapters. It has also examined the effect that modifiers bring to the interpretation of nominal expressions. In Sinitic languages, modifiers for nominal phrases come in two types. It has been argued that the distinction between the two types of modifier, namely the bare modifier and the marked modifier (or direct and indirect modifications in Sproat and Shih's (1988, 1991) sense) lies in their different derivations. More specifically, the bare modifier is base-generated in the Spec of a functional or lexical projection, whereas the marked modifier is adjoined to the left of the nominal phrase by the operation Adjunction.

In Section 4.2, I focused on the construction with *de*-marked modifiers in Mandarin Chinese. Various proposals with regard to the use of the particle *de* in different linguistic contexts in the literature are critically reviewed. In Section 4.3, I proposed that the formation of the *de*-marked modification structure in Mandarin Chinese is derived by the operation Adjunction. More specifically, it is argued that the particle *de* is a head-initial complementiser and that all instances of the *de*-marked modifying phrases are in fact full forms of relative clauses which are adjoined to the left of modified nominal phrases. Such a proposal is based on the fact that the *de*-marked modification structure allows negation and merger with high adverbs. In Section 4.4, I extended my left-adjunction of full relative clause analysis to the marked modification structures in the other three Sinitic languages. It was shown that the marked modification structure in Cantonese, Taiwan Southern Min and Hakka can be analysed in exactly the same way as the *de*-marked modification structure in Mandarin Chinese. In Section 4.5, I moved onto the discussion of bare adjectival modifiers and argued that they are merged into the Spec of functional or lexical

projections. More precisely, a Svenonius-style analysis (Svenonius 2008), where the hierarchical ordering of other, independently motivated functional categories leads to the linear ordering of stacked adjectives, is maintained for the analysis of Sinitic language data. That is to say, principles of economy in Universal Grammar might favour fitting adjectives into independently motivated hierarchical structure when possible, resulting in favoured linear orders but allowing reverse orders when semantically motivated.



## **Chapter 5**

### **Conclusion**

#### **5.1 Introduction**

In this final chapter, I will summarise the major theoretical and empirical conclusions of this dissertation. The main goal of this dissertation is to explore the syntactic structure of Sinitic nominal phrases. This chapter is organised in the following manner. In Section 5.2, I will summarise the Probe-Goal feature valuing model presented in Chapter Two, which analyses the internal structure of nominal phrases in the four Sinitic languages in terms of the DP Hypothesis. In Section 5.3, I will recapitulate my findings on the left periphery of Sinitic nominal phrases presented in Chapter Three. In Section 5.4, I will reiterate my proposals for the two modification structures of Sinitic languages presented in Chapter Four. I will then conclude this chapter in Section 5.5, where I will suggest how my analysis of Sinitic languages in the preceding chapters might be extended to Japanese and Korean data. I will then conclude this chapter in Section 5.6.

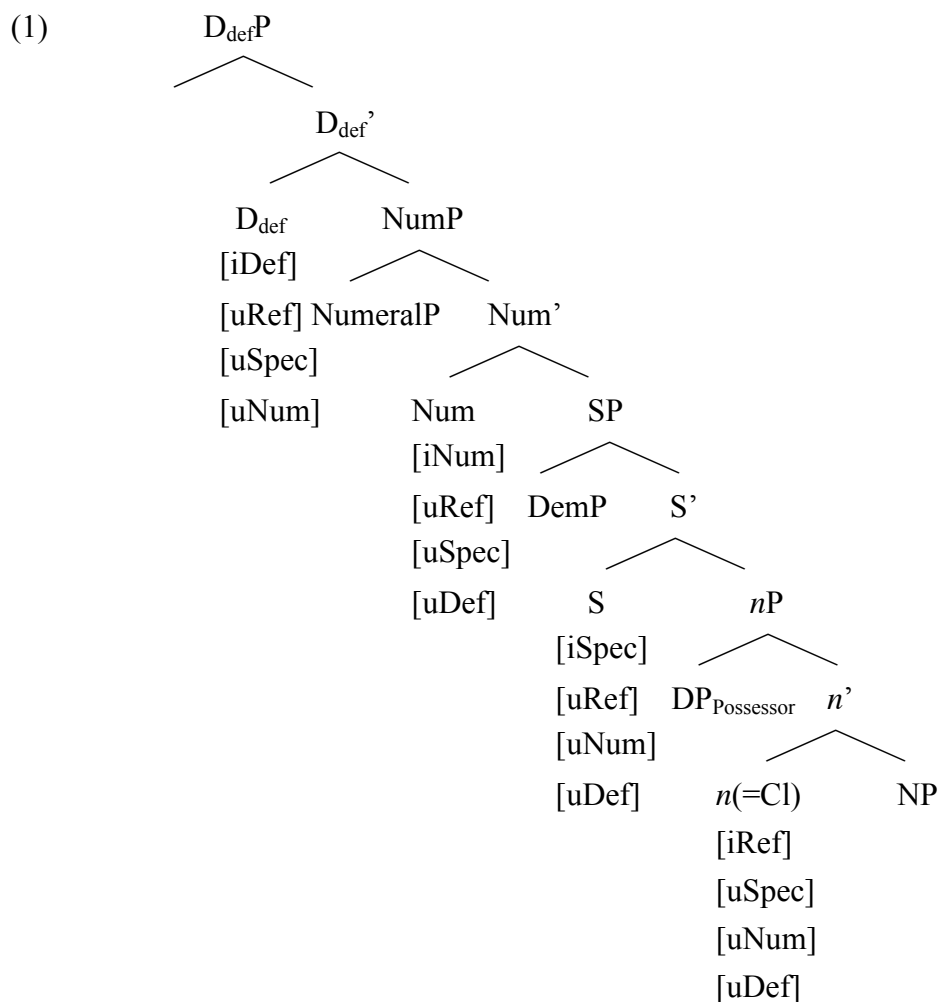
#### **5.2 Universal-DP Hypothesis**

Recent studies of nominal phrases in classifier languages have raised the issue of whether or not Abney's (1987) DP Hypothesis can be applied to this type of language. In Chapter Two, I proposed a unified syntactic structure to account for the phenomena in both classifier and non-classifier languages. Given the theoretical assumption that functional projections are involved in the derivation of certain aspects of meaning, this dissertation is committed to Cinque's (1999) Universal Hierarchy of Clausal Functional Projections, which claims that the functional structure in the Narrow

Syntax must be uniform across all languages and ultimately determines the interpretation of a certain expression. For instance, in the spirit of Longobardi (1994, 1996, 2001, 2005), it is assumed that the functional category D is obligatorily present in the syntactic structure of nominal expressions across all languages since the need to encode differences in reference must be present in every language. The theoretical implication is that the same distinction between argumental nominal phrase and predicative nominal phrase can be upheld for all languages. In other words, the existence of the Nominal Mapping Parameter and the application of a semantic ‘type-shifting’ rule as proposed by Chierchia (1998) can then be abandoned. Instead, a one-to-one syntax-semantics mapping relation can be sustained.

Furthermore, in line with Pereltsvaig’s (2007) Universal-DP Hypothesis discussed in Section 1.3.6, I have maintained the idea that the syntactic structure of the nominal phrase is universal regardless of the presence of lexical items which realise the heads of the functional projections. More specifically, a Probe-Goal feature-valuing model has been proposed to account for the parametric variation in Sinitic and other languages within the framework of Chomsky’s (2000, 2001, 2004) Phase-based Minimalist Programme. According to my Probe-Goal feature-valuing system, an interpretable [Def] feature is encoded on the head of  $D_{\text{def}}P$ , an interpretable [Num] feature on the head of NumP, an interpretable [Spec] feature on the head of SP, and an interpretable [Ref] feature on the head of the  $nP$ , which is lexically realised as the classifier in Sinitic languages. In addition, the head of each functional projection bears not only the aforementioned interpretable feature but also several uninterpretable features related to the other functional projections. For instance, the  $D_{\text{def}}$  head is composed of the interpretable [Def] feature and the uninterpretable [Num], [Spec] and [Ref] features. The matching of these features is done in a

head-to-head manner. More precisely, according to Chomsky's (2001) Agree-based theory, the interpretable feature of each functional head interacts with the uninterpretable features of other functional heads via the operation Agree. For example, the  $D_{\text{def}}$  head with the unvalued uninterpretable [Ref], [Spec] and [Num] features and the interpretable [Def] feature serves as the Probe, while the  $n$  head with the interpretable [Ref] feature and the unvalued uninterpretable [Def] feature, the S head with the interpretable [Spec] feature and the unvalued uninterpretable [Def] feature and the Num head with the interpretable [Num] feature and the unvalued uninterpretable [Def] feature serve as the Goals (cf. Sio 2006, 2008). The unvalued uninterpretable [Def] feature on the functional heads  $n$ , S and Num copies its value from the interpretable [Def] feature on the  $D_{\text{def}}$  head via the operation Agree. At the same time, the interpretable [Ref], [Spec] and [Num] features on the functional heads  $n$ , S and Num respectively value the unvalued uninterpretable [Ref], [Spec] and [Num] features on the  $D_{\text{def}}$  head by Agree. The universal syntactic structure of nominal phrases that I postulated is schematised as in (1).



The main idea is that  $D_{\text{def}}$  is the universal category that determines the definiteness of nominal phrases (cf. Cheng and Sybesma 1999, 2005). More specifically, I propose that the (in)definiteness of nominal phrases depends solely on the feature specification of the functional head  $D_{\text{def}}$ . Such a unified model can account for the empirical facts that bare nouns can be interpreted as definite, indefinite and generic in Sinitic languages as shown in (2) to (3) below and that individual-denoting number expressions in Sinitic languages can occur in the subject position as in (4) and the object position as in (5) and bear the definite meaning as quantity-denoting number expressions do.



(2) Subject position:

M.-L. Hsieh (2008: 77; modified):

a. Indefinite

wàimiàn **gǒu** zài jiào<sup>1</sup>

outside dog Asp bark

‘Outside dogs are barking.’

Cheng and Sybesma (2005: 261; modified):

b. Definite

**gǒu** jīntiān tèbié tīnghuà

dog today very obedient

Singular reading: ‘The dog was very obedient today.’

Plural reading: ‘The dogs were very obedient today.’

c. Generic

**gǒu** ài chī ròu

dog love eat meat

‘Dogs love to eat meat.’

(3) Object position:

Cheng and Sybesma (2005: 261; modified):

a. Indefinite

Húfěi mǎi **shū** qù le

Hufei buy book go SFP

---

<sup>1</sup> This sentence is ambiguous given that it can have a definite reading: ‘Outside, the dog(s) is/are barking.’

Singular reading: ‘Hufei went to buy a book.’

Plural reading: ‘Hufei went to buy books.’

b. Definite

Húfēi          hē-wán-le          **tāng**

Hufei          drink-finish-Asp          soup

‘Hufei finished the soup.’

c. Generic

wǒ    xǐhuān    **gǒu**

I    like    dog

‘I like dogs.’

M. Wu (2006: 129; modified):

(4) **sān**    **ge**    **wén**    **guān**    xià-de    zhí    dǎduōsuō

three    Cl    rotten    official    scare-DE    keep    shiver

‘The three rotten officials were shivering with fear, ...’

M. Wu (2006: 132; modified):

(5) Guō    Jìng    xiàng    Huáng    Yàoshī    yǔ    **liù**    **wèi**    **shīfù**    gōngshēn

Guo    Jing    towards    Huang    Yaoshi    and    six    Cl    mentor    bend-over

xínglǐ

bow

‘Guo Jing bowed at Huang Yaoshi and the/his six mentors.’

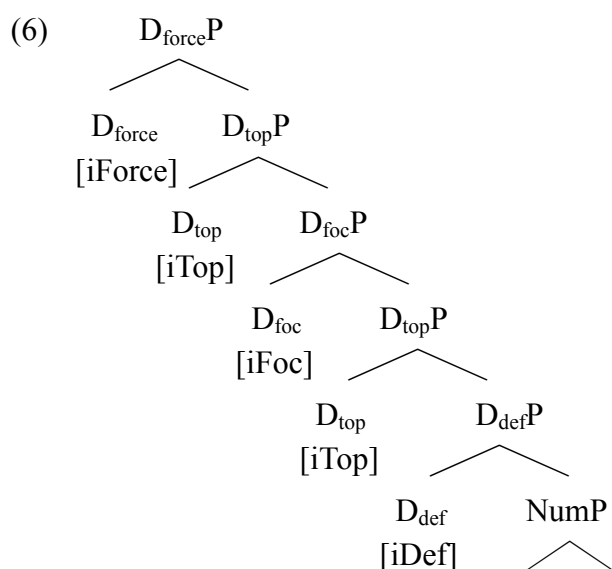
In contrast to Cheng and Sybesma’s (1999, 2005) CIP account and Li’s (1998, 1999b)

DP/NumP account, the current DP account of Sinitic nominal expressions makes the

existence of Universal Grammar as an inventory for all computational grammatical systems a stronger claim.

### 5.3 Split-DP Hypothesis

Recent studies of the parallelism between clausal and nominal structures have raised the issue of whether or not the DP involves a more articulated phrasal architecture as Rizzi (1997) proposes for CP. In Chapter Three, I investigated the left periphery of Sinitic nominal phrases in terms of the Split-DP Hypothesis (cf. Aboh 2004; Giusti 1996; Haegeman 2004; Ihsane and Puskás 2001), which proposes that the DP is not a unitary projection but an articulated array of functional projections. I proposed that DP can split into  $D_{\text{force}}\text{P}$ ,  $D_{\text{top}}\text{P}$ ,  $D_{\text{foc}}\text{P}$ ,  $D_{\text{top}}\text{P}$  and  $D_{\text{def}}\text{P}$  and the hierarchical order is illustrated in (6) below:



I assumed that these functional projections encode discourse-related properties, such as illocutionary force, topic and focus, in the same way as their counterparts in the clausal domain. In line with Pereltsvaig's (2007) Universal-DP Hypothesis, I further maintained that the existence of these functional projections is not subject to

parametric variation cross-linguistically. Empirically, on the basis of Sinitic language data, it was shown that these functional projections exist in article-less languages and classifier languages as well.

More specifically, the lower  $D_{top}P$ , which immediately c-commands the  $D_{def}P$ , was argued to be the locus of the discourse topic in the nominal domain. As exemplified in (7), a personal pronoun is inserted in its Spec position to provide an ‘aboutness’ relation.

Huang, Li and Li (2009: 297; modified):

- (7) a. wǒmen      jǐ      ge      rén/xuéshēng/lǎnguǐ/liúlànghàn  
       we          several    Cl    person/student/lazybones/vagrant  
       ‘us several people/students/lazybones/vagrants’
- b. wǒmen      lǎoshī  
       we          teacher  
       ‘us teachers’

The use of personal pronouns in the above constructions is quite similar to the use of personal pronouns as the base-generated or ‘aboutness’ topic in the clausal domain as shown in (8).

- (8) tāmen nǐ      kàn      wǒ wǒ kàn nǐ  
       they you see      me I see you  
       ‘As for them, they looked at each other.’

As far as the  $D_{foc}P$  is concerned, it was argued that it accommodates emphasised

elements, such as numerals in (9) and DegPs in (10), in its Spec position.

(9) a. Mandarin

Yì bēn shū

one Cl book

‘(exactly) one book’

b. Cantonese

JAT<sup>1</sup> bun<sup>2</sup> syu<sup>1</sup>

one Cl book

‘(exactly) one book’

c. Taiwan Southern Min

TSIT pún tsu

one Cl book

‘(exactly) one book’

d. Hakka

RHIT<sup>5</sup> bun<sup>24</sup> shu<sup>53</sup>

one Cl book

‘(exactly) one book’

(10) a. [<sub>DegP</sub> hǎo jīngcǎi] yì chǎng yǎnjiǎng

very fantastic one Cl speech

‘What a fantastic speech!’

b. [<sub>DegP</sub> zhēn háohuá] yí dòng fangzǐ

so extravagant one Cl house

‘So extravagant a house!’

- c. [<sub>DegP</sub> tèbié dà] yì jiān kètīng  
 particular big one Cl living room  
 ‘So big a living room!’
- d. [<sub>DegP</sub> chāo piàoliàng] nà ge nǚhái  
 so pretty that Cl girl  
 ‘So pretty that girl!’
- e. [<sub>DegP</sub> duō měilì] yí zuò huāyuán  
 much beautiful one Cl garden  
 ‘So beautiful a garden!’

The existence of  $D_{\text{focP}}$  also helps to explain why the collective marker *–men* in Mandarin can appear in a pre-numeral position as exemplified in (11) but not in a post-numeral position as exemplified in (12).

Iljic (1994: 93; modified):

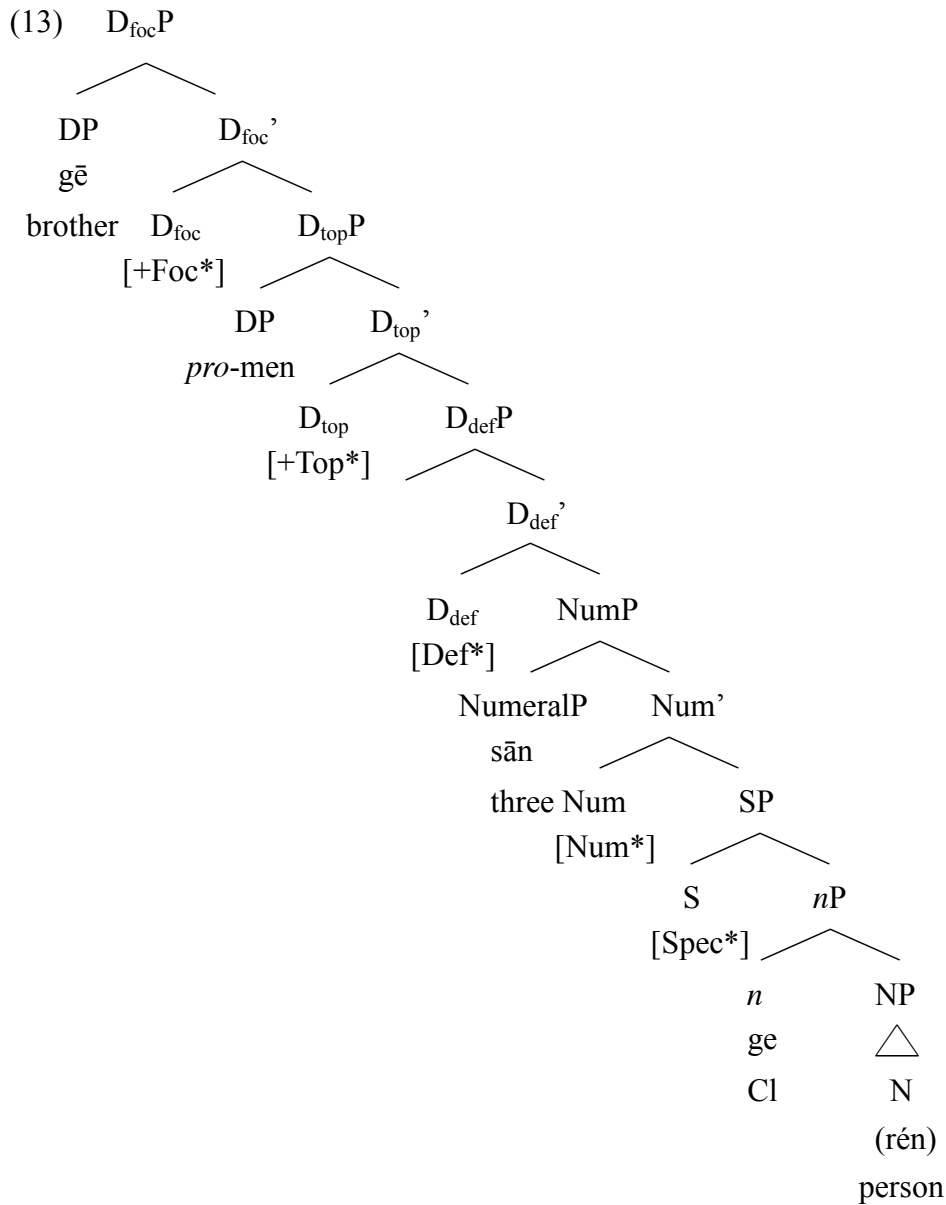
- (11) gē-men sān ge (rén)  
 brother-MEN three Cl person  
 ‘the brothers, the three of them’

Huang, Li and Li (2009: 307; modified):

- (12) \*sān ge xuéshēng-men  
 three Cl student-MEN  
 Intended meaning: ‘three students’

It was argued that the sequence *gē-men* ‘the brothers’ in Mandarin is actually *gē*

‘brother’ followed by *pro-men*.<sup>2</sup> The derivation of (11) is illustrated as in (13) below:<sup>3</sup>



As can be seen, the word *gē* ‘brother’, a DP with its own internal structure, is merged into the Spec of  $D_{\text{foc}}\text{P}$  and the Spec of  $D_{\text{top}}\text{P}$  accommodates *pro-men*. The NP *rén* ‘person’ can be elided by the PF component when given the right context.

<sup>2</sup> X. Zhang (2008) has a similar proposal that NP-*men* is actually NP+*pro-men*.

<sup>3</sup> To save space, the  $D_{\text{force}}\text{P}$  is not present in (13).

In addition, a proper name, a DP with its own internal structure, can also be merged into the Spec of  $D_{\text{foc}}P$ , as shown in (14):

Huang, Li and Li (2009: 299; modified):<sup>4</sup>

- (14) Zhāngsān Lǐsì tāmen nà jǐ ge guāi háizi  
 Zhangsan Lisi them that several Cl good child  
 ‘Zhangsan and Lisi those several good children’

As can be seen from the example above, the proper names in this construction are the focal part of the entire nominal phrase since it points out the representatives of the referents denoted by the following nominal phrase. In other words, the proper names in (14) serve as the anchor for the identification of the group. In contrast to the general assumption in the literature that proper names, pronouns and demonstratives all occupy the D position, the co-occurrence of these three lexical items within the same nominal phrase in Sinitic languages as shown in (14) can be easily accounted for given the existence of  $D_{\text{top}}P$  and  $D_{\text{foc}}P$  in the left periphery of Sinitic nominal phrases. As far as the  $D_{\text{force}}P$  is concerned, it was proposed that the  $D_{\text{force}}$  head bears an interpretable [Force] feature and it can be optionally lexicalised by an overt particle in Sinitic languages as in (15).

- (15) a. shéme wányì (ma)  
 what thing (EP)  
 ‘What the hell!’  
 b. jǐ ge rén (ne)

---

<sup>4</sup> Huang, Li and Li provide a sentence from which I have isolated just the nominal phrase.



how many Cl person (QP)

‘How many people?’

As indicated above, the  $D_{force}$  head can be lexically realised by the exclamative particle *ma* in (15a) and the question particle *ne* in (15b). Given the fact that the particles appear in the phrase-final position, it was proposed that there is obligatory XP-raising to the top-most left periphery of nominals in Sinitic languages, which is parallel to the obligatory XP-raising to the top-most left periphery of the clause.

Furthermore, it was shown that topicalisation and focalisation of NP out of a DP in the clausal domain of Sinitic languages, which are exemplified respectively in (16), have to be licensed by DP-internal topicalisation and focalisation as exemplified in (17).

(16) a. bǐ tā mǎi-le shí zhī  
pen s/he buy-Asp ten Cl  
‘As for the pens, he bought ten.’

b. tā bǐ mǎi-le shí zhī  
s/he pen buy-Asp ten Cl  
‘(lit.) S/He, pens, bought ten.’

(17) tā mǎi-le bǐ shí zhī  
s/he buy-Asp pen ten Cl  
‘(lit.) S/He bought pens ten.’

In other words, the  $D_{top}P$  and  $D_{foc}P$  at the left periphery of nominal phrases are treated

as the escape hatch for extraction. In addition, it has been demonstrated that there is no Left Branch Condition for Sinitic nominal expressions since the possessor DP can be extracted out from the nominal domain to the clausal domain as shown in (18).

- (18) a. **Wángmiǎn<sub>i</sub>** sǐ-le [t<sub>i</sub> fùqīn]  
 Wangmian die-Asp father  
 ‘Wangmian lost his father.’
- b. **Gěruìsēn<sub>i</sub>** zuìjìn/yòu [t<sub>i</sub> tóu] tòng  
 Grissom recently/again head ache  
 ‘Grissom’s head was aching recently/again.’
- c. Gěruìsēn bǎ **Níkè<sub>i</sub>** (hěnhěndì) dǎ-shāng-le [t<sub>i</sub> shǒu]  
 Grissom BA Nick severely hit-hurt-Asp hand  
 ‘Grissom (severely) hurt Nick’s hand.’

This fact once again confirms that the  $D_{top}P$  and  $D_{foc}P$  at the left periphery of nominal phrases serve as the escape hatch for extraction.

In contrast to the DP Hypothesis, the other existing analyses for nominal phrases in Sinitic languages, namely Huang’s (1982) and Lin’s (1997) NP analysis and Cheng Sybesma’s (1999, 2005) CIP analysis and Sio’s (2006, 2008) SP analysis, cannot account for the aforementioned phenomena. On the other hand, the Split-DP Hypothesis can easily account for these phenomena given the existence of a fine-grained architecture at the left periphery of Sinitic nominal phrases.

## 5.4 Modification Structures

In Sinitic languages, modifiers for nominal phrases have been divided into two types, namely the bare modifier as in (19) and the marked modifier as in (20).

(19) **piàoliàng** nǚhái  
 beautiful girl  
 ‘beautiful girl(s)’

(20) **piàoliàng de** nǚhái  
 beautiful DE girl  
 ‘a/the girl(s) that is/are beautiful’

In Chapter Four, I argued that these two constructions are derived from different syntactic operations. More specifically, it was proposed that the bare modifier is base-generated in the Spec of a functional or lexical projection, whereas the marked modifier is adjoined to the left of the nominal phrase by the operation Adjunction.

It was argued that the modification markers (namely, *de* in Mandarin, *ge*<sup>3</sup> in Cantonese, *ê* in Taiwan Southern Min and *gai*<sup>11</sup> in Hakka) are head-initial complementisers and that all instances of the marked modifying phrases as in (21) are in fact full forms of relative clauses which are adjoined to the left of modified nominal phrases as illustrated in (22).

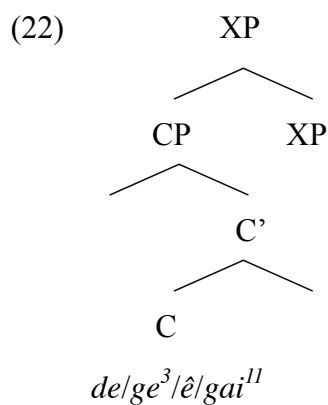
- (21) a. [<sub>DP</sub> Zhào Yuánrèn] de shū  
           Zhào Yuánrèn DE book  
           ‘Zhào Yuánrèn’s book(s)’  
 b. [<sub>AdjP</sub> tèbié piàoliàng] de fangzǐ  
           particularly gorgeous DE house  
           ‘a/the house(s) that is/are gorgeous’

c. [PP zài zhuō shàng] de chábēi  
 at table up DE cup

‘a/the cup(s) that is/are on the table’

d. [NP mùtóu] de zhuōzi  
 wood DE table

‘a/the table(s) that is/are made of wood’



Such a proposal is based on the fact that the marked modification structure, but not the bare modification structure, allows negation as shown in (23) and merger with high adverbs (i.e. *xiǎnrán* ‘obviously’, *yíding* ‘certainly’ and *jìngrán* ‘actually’ in Mandarin) as shown in (24).

(23) a. bù shǔyú Zhào Yuánrèn \*(de) shū  
 not belong Zhào Yuánrèn DE book  
 ‘a/the book(s) that is/are not Zhào Yuánrèn’s’

b. bù piàoliàng \*(de) fangzǐ  
 not gorgeous DE house  
 ‘a/the house(s) that is/are not gorgeous’

c. bù zài zhuō shàng \*(de) chábēi  
 not at table up DE cup  
 ‘a/the cup(s) that is/are not on the table’

d. bù shì mùtóu \*(de) zhuōzi  
 not copula wood DE table  
 ‘a/the table(s) that is/are not made of wood’

(24) a. xiǎnrán wújiě \*(de) xuánàn  
 obviously unsolvable DE unsettled case  
 ‘a/the case(s) that is/are obviously unsolvable’

b. yíding dǎobì \*(de) gōngchǎng  
 certainly close down DE factory  
 ‘a/the factory/factories that is/are certainly to be closed down’

c. jìngrán dāngxuǎn \*(de) zàiyě dǎng lǐngxiù  
 actually elected DE opposition party leader  
 ‘a/the leader(s) of the opposition party/parties that is/are actually elected’

As far as Sinitic bare modification structures are concerned, it was maintained that the adjective-noun sequence involves a syntactic relation different from the marked modification structures. More precisely, bare modifiers were assumed to be base-generated at the Spec of functional or lexical projections. A Svenonius-style analysis (Svenonius 2008), where the hierarchical ordering of independently motivated functional categories leads to the linear ordering of stacked adjectives, was argued to be suitable for the analysis of Sinitic language data. That is to say, principles of economy in Universal Grammar might favour fitting adjectives into independently

motivated hierarchical structure when possible, resulting in favoured linear orders but allowing reverse orders when motivated.

## 5.5 Further Issues for Future Research

Given that this dissertation pursues a unified account of the articulated structure of nominal phrases in line with Pereltsvaig's (2007) Universal-DP Hypothesis for cross-linguistic data, classifier languages with a different word order in contrast to Sinitic languages become a good candidate to test the universality of my proposals presented in the previous chapters. In the remaining parts of this section, I will use Japanese and Korean data for demonstration.<sup>5</sup> Since providing a complete analysis for Japanese and/or Korean nominal phrases is beyond the scope of the dissertation, I will only suggest a basic framework for further studies.

### 5.5.1 Head Directionality

Japanese and Korean are similar to Sinitic languages in that they have classifiers but not determiners. On the other hand, Japanese and Korean nominal expressions differ from Sinitic nominal expressions in that the noun precede the numeral and the classifier as shown in (25) and (26) below.

(25) Japanese

hon      san      satu

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<sup>5</sup> In terms of native speakers, Japanese is the eighth most widely spoken language in the world, having about 125 million speakers mainly in Japan, whereas Korean is spoken by more than 70 million people, mainly in Korean and adjacent areas of Russia and northeast China. These two languages have great similarities. Both of them are agglutinating languages and have SOV word order. They also share many related words, which reflect massive borrowing from Chinese. Some linguists regard them as belonging to the Altaic family, which also includes Uighur, Mongolian and Turkish (Goddard 2005).

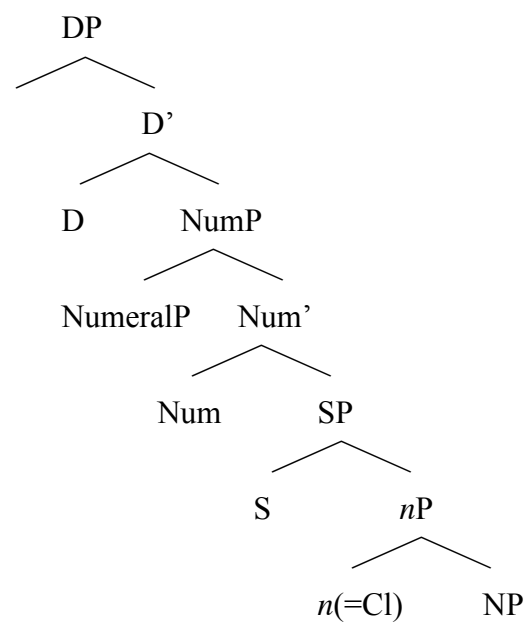
book three Cl  
 ‘three books’

(26) Korean

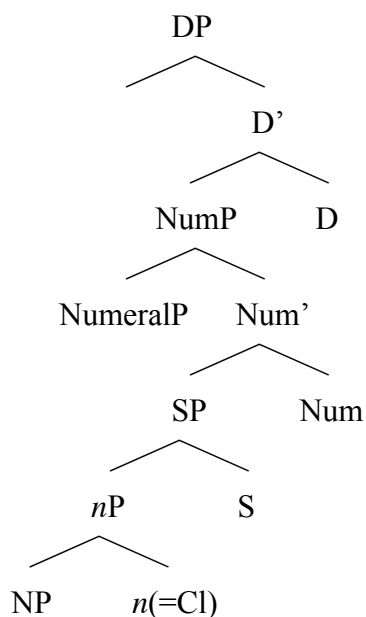
chayk sey kwen  
 book three Cl  
 ‘three books’

Concerning the linear word order of the nominal phrases in (25) and (26), an important theoretical issue that arises is whether a head-initial syntactic structure as in (27) or a head-final syntactic structure as in (28) can better account for the data.

(27) Head-initial Structure



(28) Head-final Structure



In fact, these two structures can both derive the correct word order by the obligatory movement of NP to the Spec of DP. However, as indicated in Chapter Two, the parametric variation of nominal phrases has been reduced down to two sources, namely (i) how the movement-triggering feature on different functional heads can be satisfied (i.e. by DP-internal head and/or phrasal movement) and (ii) how the (un)interpretable features on different functional heads can be phonetically realised. Therefore, it is maintained here that it is the head-initial structure in (27) with the movement of NP to the Spec of DP that derives the linear word order of Japanese and Korean nominals in (25) and (26), since we do not need to assume an extra head-directionality parameter in our theory of Universal Grammar (cf. Kayne 1994).

The whole nominal phrase in (25) or (26) can be further case-marked by the verbal extended projection as shown in (29) below.



Park (2008: 85; modified):

(29) Japanese

a. kare-wa    **hon**    **san**    **satu-o**    yonda

he-Top    book    three    Cl-Acc    read

‘He read (the) three books.’

Korean

b. ku-nun    **chayk**    **sey**    **kwen-ul**    ilkessta

he-Top    book    three    Cl-Acc    read

‘He read (the) three books.’

That is to say, I shall assume that (nominative or accusative) Case is assigned DP-externally to the nominal expression by being in the relationship with verbal extended projections. Such an assumption is fundamentally different from Watanabe’s (2006) proposal that there is a Case projection (henceforth CaseP) within the DP (See also Loebel’s (1994) KP<sup>6</sup> analysis for German). In contrast, it is proposed that there is an uninterpretable [Case] feature on the D<sub>force</sub> head and this feature is spelt out by the PF component as a case suffix. In other words, the insertion of the case suffix (i.e. *-o* in Japanese and *-ul* in Korean) is treated as a PF operation. Compared with Watanabe’s (2006) assumption, the current proposal can be better generalised to sentence-level syntax across languages. In addition, the current proposal is empirically supported by the fact that two nominal phrases can be co-ordinated and then case-marked, resulting in a single case marker as exemplified in (30).

(30) Japanese

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<sup>6</sup> She uses K to stand for Case.

a. kare-wa    [**hon    san    satu    to   pen san bon**]-o    katta  
 he-Top    book    three    Cl    and pen three Cl-Acc bought  
 ‘He bought three books and three pens.’

b. \*kare-wa    [[**hon    san    satu**]-o    to    [**pen san bon**]-o]  
 he-Top    book    three    Cl-Acc    and    pen three Cl-Acc  
 katta  
 bought

Intended meaning: ‘He bought three books and three pens.’

Korean

c. ku-nun    [**chayk    sey    kwen    kwa    peyn    sey**  
 he-Top    book    three    Cl    and    pen    three  
**kay]-lul**    sassta  
 Cl-Acc    bought

‘He bought three books and three pens.’

d. \*ku-nun    [[**chayk    sey    kwen**]-ul    kwa    [**peyn    sey**  
 he-Top    book    three    Cl-Acc    and    pen    three  
**kay]-lul]**    sassta  
 Cl-Acc    bought

Intended meaning: ‘He bought three books and three pens.’

As can be seen from these examples, two DPs cannot be co-ordinated after being case-marked. If there were a CaseP inside the DP as Watanabe (2006) proposes, we would have to assume that co-ordination is obligatorily low within the DP so that the resulting nominal phrase can move to the Spec of CaseP for case marking. On the other hand, according to the current proposal, (30b) and (30d) are ruled out because of

a PF constraint which forbids the insertion of case suffix left-adjacent to the conjunctions *to* and *kwa*. More elaboration on the insertion of case suffixes will be given in the next section.

## 5.5.2 Word Order Variations and the Position of Case Markers

Japanese and Korean exhibit various patterns of nominal constructions with numerals and classifiers, as exemplified in (31) and (32) below.

Park (2008: 85; modified):

(31) Japanese<sup>7</sup>

- |    |                              |              |             |               |       |
|----|------------------------------|--------------|-------------|---------------|-------|
| a. | kare-wa                      | <b>hon</b>   | <b>san</b>  | <b>satu-o</b> | yonda |
|    | he-Top                       | book         | three       | Cl-Acc        | read  |
|    | ‘He read (the) three books.’ |              |             |               |       |
| b. | kare-wa                      | <b>hon-o</b> | <b>san</b>  | <b>satu</b>   | yonda |
|    | he-Top                       | book-Acc     | three       | Cl            | read  |
| c. | kare-wa                      | <b>san</b>   | <b>satu</b> | <b>hon-o</b>  | yonda |
|    | he-Top                       | three        | Cl          | book-Acc      | read  |

---

<sup>7</sup> According to Minoru Fukuda (p.c.), (31b) sounds more natural as a response to the interrogative sentence such as (i):

- |     |                               |          |      |      |        |          |
|-----|-------------------------------|----------|------|------|--------|----------|
| (i) | kare-wa                       | nan      | satu | yomi | masita | ka?      |
|     | he-Top                        | how many | Cl   | read | Past   | Particle |
|     | ‘How many books did he read?’ |          |      |      |        |          |

On the other hand, (31c) sounds more natural as a response to the interrogative sentence such as (ii):

- |      |                     |          |      |        |          |
|------|---------------------|----------|------|--------|----------|
| (ii) | kare-wa             | nani-o   | yomi | masita | ka?      |
|      | he-Top              | what-Acc | read | Past   | Particle |
|      | ‘What did he read?’ |          |      |        |          |

(32) Korean

- a. ku-nun      **chayk**    **sey**      **kwen-ul**      ilkessta  
he-Top      book      three      Cl-Acc      read  
'He read (the) three books.'
- b. ku-nun      **chayk-ul**      **sey**      **kwen**      ilkessta  
he-Top      book-Acc      three      Cl      read
- c. ku-nun      **chayk-ul**      **sey**      **kwen-ul**      ilkessta  
he-Top      book-Acc      three      Cl-Acc      read

As indicated by Park (2008), the patterns of the above nominal expressions can be schematically represented as shown in (33) and (34) respectively.

Park (2008: 86; modified):

(33) Japanese

- a. Pattern I: N Num-Cl-Case (Nom/Acc)  
b. Pattern II: N-Case (Nom/Acc) Num-Cl  
c. Pattern III: Num-Cl N-Case (Nom/Acc)

(34) Korean

- a. Pattern I: N Num-Cl-Case (Nom/Acc)  
b. Pattern II: N-Case (Nom/Acc) Num-Cl  
c. Pattern III: N-Case (Nom/Acc) Num-Cl-Case (Nom/Acc)

As can be seen from (33) and (34), Japanese and Korean share Pattern I and Pattern II.

On the other hand, Japanese lacks Pattern III of Korean, whereas Korean disallows Pattern III of Japanese. Regarding these patterns of nominal constructions, many researchers have abandoned a unified account of the entire range of the constructions (i.e. Nakanishi 2004 and K.-Y. Choi 2001 among many others). Instead, they provide a different underlying structure (namely, an adverbial structure) for Pattern II of the floating Numeral-Cl sequence.

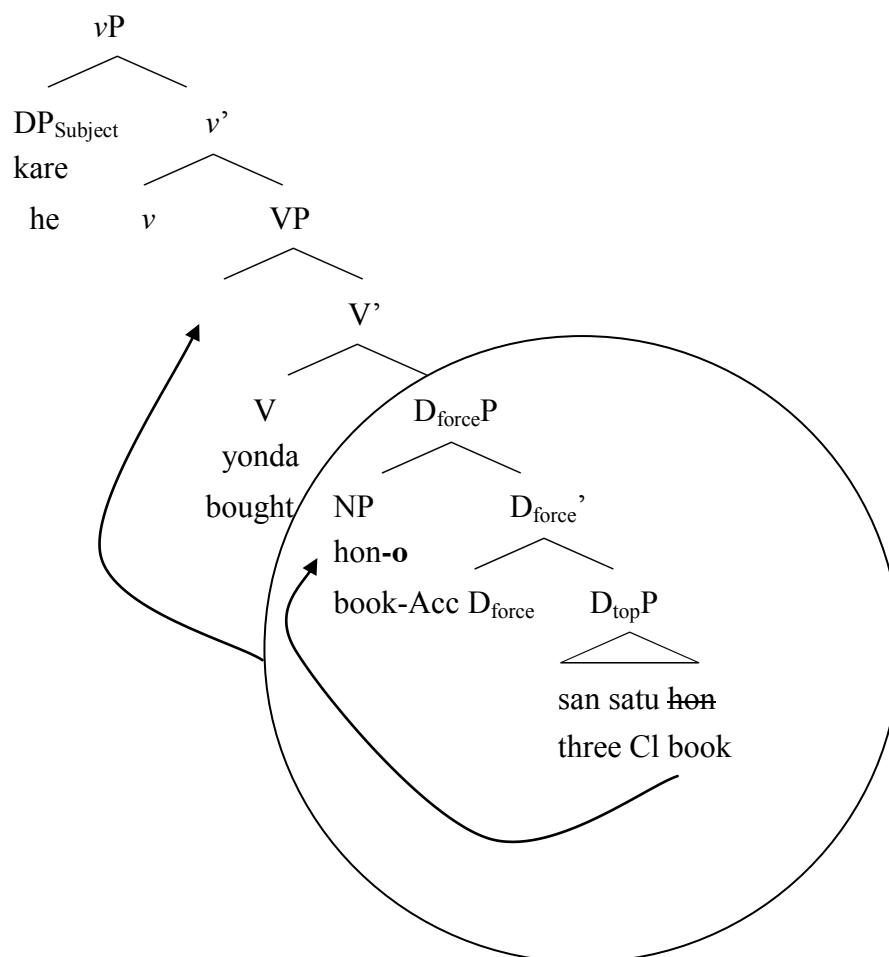
Given my assumptions of the existence of the functional projections at the left periphery of nominal phrases and the mechanism of DP-internal topicalisation and focalisation, it is not difficult to generate these patterns of nominal constructions. In line with Park (2008), I assume that the case-marked noun and the Numeral-Cl sequence in Pattern II are underlyingly generated as one DP and the NP undergoes movement to the left periphery of the DP case-marked by the  $\nu$  head, as illustrated in (35)<sup>8</sup>.

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<sup>8</sup> To save space, only the relevant functional projections at the left periphery of the nominal phrase, namely the  $D_{\text{force}}P$  and the higher  $D_{\text{top}}P$ , are provided here. The left periphery of the nominal phrase in (35) has the fuller structure shown in (i) below:

(i)  $D_{\text{force}}P > D_{\text{top}}P > D_{\text{foc}}P > D_{\text{top}}P > D_{\text{def}}P$

(35)



As shown, the NP moves to the left periphery of the nominal phrase, leaving behind the Numeral-CI sequence and then gets accusative-marked by the *v* head. In other words, under my analysis the accusative marking on the noun in Pattern II is DP-external rather than DP-internal (contra Watanabe 2006). More specifically, the insertion of the case suffix (i.e. *-o* in Japanese or *-ul* in Korean) to the NP is treated as a PF operation.<sup>9</sup> As indicated in the previous section, there is a PF constraint which forbids the insertion of case suffix left adjacent to the conjunction *to* ‘and’. In contrast to Park (2008), who argues that the NP further moves to the Spec of *v*P to be

<sup>9</sup> I will leave the issue how this operation works for future research.

case-marked, the current analysis can better account for the co-ordination phenomenon as shown in (36).

(36) a. kare-wa [hon san satu to pen san bon]-o katta  
 he-Top book three Cl and pen three Cl-Acc bought  
 ‘He bought three books and three pens.’

b. kare-wa [hon-o san satu] to [pen-o san  
 he-Top book-Acc three Cl and pen-Acc three  
 bon] katta  
 Cl bought  
 ‘He bought three books and three pens.’

c. kare-wa [hon-o san satu] to [pen san bon]-o  
 he-Top book-Acc three Cl and pen three Cl-Acc  
 katta  
 bought  
 ‘He bought three books and three pens.’

d. ?kare-wa [hon-o san satu] to [san bon pen]-o  
 he-Top book-Acc three Cl and three Cl  
 pen-Acc  
 katta  
 bought  
 ‘He bought three books and three pens.’

e. \*kare-wa [hon san satu]-o to [pen san bon]-o  
 he-Top book three Cl-Acc and pen three Cl-Acc  
 katta

bought

f. \*kare-wa [**hon san satu**]-o to [**pen-o san bon**]

he-Top book three Cl-Acc and pen-Acc three Cl

katta

bought

g. \*kare-wa [**san satu hon**]-o to [**pen san bon**]-o

he-Top three Cl book-Acc and pen three Cl-Acc

katta

bought

h. \*kare-wa [**hon san satu**]-o to [**san bon pen**]-o katta

he-Top book three Cl-Acc and three Cl pen-Acc bought

i. \*kare-wa [**san satu hon**]-o to [**san bon pen**]-o katta

he-Top three Cl book-Acc and three Cl pen-Acc bought

j. \*kare-wa [**san satu hon**]-o to [**pen-o san bon**]

he-Top three Cl book-Acc and pen-Acc three Cl

katta

bought

As can be seen from the examples above, the case suffix *-o* can be attached either to the entire DP or to the NP at the left periphery of DP under the constraint that forbids the insertion of case suffix left-adjacent to the conjunction *to* ‘and’.

Furthermore, the case-marked noun can further move to the sentence-initial position as shown in (37) below.

(37) Japanese



a. **hon-o** kare-ga san satu yonda  
 book-Acc he-Nom three Cl read  
 ‘He read three BOOKS.’

b. \***hon** kare-ga san satu-o yonda  
 book he-Nom three Cl-Acc read

Korean

c. **chayk-ul** ku-nun sey kwen ilkessta  
 book-Acc he-Nom three Cl read  
 ‘He read three BOOKS.’

d. \***chayk** ku-nun sey kwen-ul ilkessta  
 book he-Nom three Cl-Acc read  
 Intended meaning: ‘He read three BOOKS.’

This once again confirms my proposal that topicalisation and focalisation of NP out of a DP in the clausal domain have to be licensed by DP-internal topicalisation and focalisation.

As far as Pattern III of Japanese is concerned, following Terada (1990) and Watanabe (2006), I suggest that it is derived by scrambling of the Numeral-Cl sequence that applies to Pattern II. In other words, the Numeral-Cl sequence is further scrambled out of the DP and adjoined to the  $vP$  after the Numeral-Cl sequence (the NumP) is moved to the left periphery of DP, namely the Spec of  $D_{\text{foc}}P$ . This assumption is supported by the fact that after scrambling, the Numeral-Cl sequence can further undergo focalisation to the sentence-initial position, as exemplified in (38).



‘I ate three apples out of those five delicious apples yesterday.’

b. ku [can<sub>i</sub> tases kay-ka] onul achim [pro<sub>i</sub>sey  
that cup five CI-Nom today morning three  
kay-ka] kkaycyessta  
CI-Nom broke

‘Three cups out of those five cups broke this morning.’

As can be seen, the case-marked Numeral-CI sequences (namely, *sey kay-lul* in (40a) and *sey kay-ka* in (40b)) have different numerals from the preceding case-marked DP associates (namely, *sakwa tases kay-lul* ‘five apples’ in (40a) and *can tases kay-ka* ‘five cups’ in (40b)).

In addition to the aforementioned patterns, there is another pattern of Japanese and Korean nominal constructions, which is exemplified in (41).

(41) Japanese

a. san satu-no hon  
three CI-Gen book

Korean

b. sey kwen-uy chayk  
three CI-Gen book

As can be seen, there is a marker, namely the particle *-no* in Japanese or the particle *-uy* in Korean, intervening between the noun and the Numeral-CI sequence. These two particles share the same genitive marking function as shown in (42) below:

(42) Japanese

Saito, Lin and Murasugi (2008: 298):

a. Haruki-no kuruma

Haruki-Gen car

‘Haruki’s car’

Korean

Simpson and Wu (2001: 254):

b. Manho-uy chayk

Manho-Gen book

‘Manho’s book’

These two usages can also be found for the particle *de* in Mandarin, which is exemplified in (43).

(43) C.-C. Tang (2005: 444; modified):

a. èrshí-sì méi de dàn

twenty-four Cl DE egg

‘twenty-four eggs’

Saito, Lin and Murasugi (2008: 298; modified):

b. Lǎowáng de chē

Lǎowáng DE car

‘Lǎowáng’s car’

However, unlike the particle *de* in Mandarin, the particle *-no* in Japanese and the particle *-uy* in Korean do not occur in headed relative clauses, as shown in (44)

below.

(44) Japanese

Simpson and Wu (2001: 252; modified):

a. *watashi-ga katta (\*no) hon*  
I-Nom bought NO book

‘the book(s) which I bought’

Korean

b. *Manho-ka san (\*uy) chayk*  
Manho-Nom bought UY book

‘the book(s) which Manho bought’

As a result, I do not treat these two particles as complementisers as I proposed for the particle *de* in Mandarin. Instead, I leave the issue of the syntactic category of these two particles open for future research.

### 5.5.3 Summary

I have shown that classifier languages with a different word order from the Sinitic languages, such as Japanese and Korean, can derive their nominal phrases from a head-initial structure as proposed for Sinitic languages. In addition, various patterns of nominal constructions in Japanese and Korean further confirm the proposal that classifier or article-less languages also have a fine-grained hierarchical structure of DP. In other words, Giusti’s (1996) argument that the existence of  $D_{top}P$  and  $D_{foc}P$  is subject to cross-linguistic parametric variation is once again falsified by Japanese and Korean data.

## 5.6 Concluding Remarks

This dissertation has contributed to our understanding of nominal structure in many ways, especially in relation to Sinitic languages. First of all, one of the major contributions of this dissertation is that it firstly documents the syntax of nominal phrases of (Hailu) Hakka. Secondly, in contrast to the existing literature on Sinitic nominal expressions, this dissertation provides a much more thorough study, covering nominal elements such as possessives, demonstratives, numerals, classifiers, adjectives, plural/collective markers and modification markers. Thirdly, this dissertation presents a new account of the micro-parametric variation of nominal expressions among four Sinitic languages within the framework of the Phase-based theory. Fourthly, this dissertation provides new evidence for the existence of DP in Sinitic languages by subjecting them to the Split-DP analysis. Finally, this dissertation makes a valuable theoretical contribution, since it adds to the growing evidence that suggests a structural parallelism between clause and nominal phrase within the generative framework. On the basis of Sinitic data, it is argued that the left periphery of nominal phrases encodes information structure in the same way as the left periphery of clause. This has not been widely investigated in East Asian languages.

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