The Mandarin Chinese nominal affix, *-men*: a non-unified analysis of a lexical and inflectional plural

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Abstract

This dissertation investigates the syntactic structure of the Mandarin Chinese nominal marker, *-men*. While it is commonly accepted that classifier languages lack plural morphology, many classifier languages have attested plural morphology, including Mandarin Chinese. I note that *-men* is restricted to pronouns, proper names, and some common nouns and is generally obligatory only on pronouns. While it generally cannot occur with quantificational expressions, it is not, contrary to most literature, barred from co-occurring with classifiers. This thesis explores the range of variation of plural marking by re-examining the distribution and interpretation of *-men*. It proposes that on common nouns, it is a lexical plural marker in the nP. This thesis also contends that a unified analysis of *-men* as it appears on common nouns and on pronouns and proper names is not possible. The data shows that the behaviour of the latter use of *-men* is far more restricted and less influenced by pragmatic concerns and thus should be considered an inflectional plural marker on pronouns.

Declaration

I declare that this thesis is a presentation of original work and I am the sole author. This work has not previously been presented for a degree or other qualification at this University or elsewhere. All sources are acknowledged as references.

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Dedication

Dedicated to my late mother, Kathleen "Katie" Rancourt

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Chapter 1

Introduction

1.1 What motivates this thesis

The purpose of this thesis is to provide a detailed syntactic analysis of the Mandarin Chinese nominal plural suffix, *-men*. Several papers and thesis chapters have offered a variety of analyses over the past two decades, in particular. While each had offered important insights, none have really brought together all the relevant aspects necessary for a complete account of *-men*. The principal puzzle of *-men* is that it is an apparent plural marker in a language with numeral classifiers, with the generalisation being that classifier-languages lack plural morphology. Specifically, my initial interest in the topic began via Borer et al. (2005), within whose exo-skeletal model both the classifier and number marker would occupy a Div head, and therefore be in complementary distribution. In typical cases, a classifier and plural noun would not co-occur.

1.2 What's challenging about *-men* plurals?

-Men presents a number of puzzles. First and foremost being the generalisation that classifier languages lack plural morphology, and yet it appears to be a plural marker. An

explanation for this requires both clarification on the status of MC nouns (in terms their typology and syntactic structure) as well as a thorough description of the uses of *-men* and a clear and well-supported definition of *-men*. In a system that assumes nouns in particular languages are either atomic or non-atomic lexically, it would therefore be a matter of noun type determining whether they can be pluralised or not. But in a system in which all nouns are roots that get their grammatical features from the structure, making them count or mass, then number is actually part of a Div head, which is responsible for portioning the noun. And further to number marking, in general, rather than bundling them together is there evidence from MC and other classifier languages that the functions associated with Div/Num/Cl should be separated in different heads, the split-plural analysis, and thus *-men* could be in a head other than Num. Should it be part of the nominal spine at all?

1.2.1 Which puzzling properties should an analysis be able to derive?

Previous work on *-men* has successfully described many of its core properties, which I will summarise in the chapter on the properties of *-men*. Although its main properties are well-known, other uses of *-men* are more contentious. Even regarding its main properties, there is a lack of consensus on how those properties are to be derived syntactically. The incompatibility of *-men* with a classifier has been overstated. Even though it is true that it is frequently dispreferred when a classifier is present and typically appears on bare nouns, it can appear with the vast majority of classifiers. On a related note is the compatibility of *-men* and numeral expressions. A *-men*-marked noun or pronoun cannot appear directly following a quantity expression, however if the quantity expression precedes a pronoun or proper noun, then *-men* is acceptable, but common nouns are not possible in this position. It also makes a difference what kind of quantity expression is used. A simple quantity expression of [Numeral-Cl] cannot co-occur with CN-*men* but a quantity expression of an approximate amount or 'one' with CN-*men* becomes more

acceptable. So if the presence of a classifier does not completely rule out the appearance of *-men* and therefore it cannot be claimed that Cl and *-men* occupy the same syntactic position nor that the classifier blocks the attachment of *-men* to the noun, what position should we posit for *-men* and what determines whether it may or may not appear with a quantity and classifier? A meaningful analysis of *-men* would need to both provide an explanation that simultaneously rules out the string [Numeral-Cl-CN-*men*], which is the most common occurrence of a quantity expression, while also allowing *-men* to co-occur with a classifier under certain conditions.

1.2.2 Highlight specific challenges this thesis seeks to address

Over the course of researching this topic, it has become clear that the main challenge is providing a unified analysis for *-men* as it appears on common nouns as well as on pronouns. Namely, the requirement of *-men* on plural pronouns, but its apparent optionality in nearly every other context. And as an optional plural marker, what determines when it is felicitous and when it is not? Are there other contexts besides on pronouns when it is truly required? If it is entirely optional and rather more flexible in its environment than often admitted, then should it be a head in the nominal spine at all or should it be a modifier of some kind. What would licence its use and where would it attach? Is it even possible for there to be a unified analysis for *-men* as it appears on pronouns and *-men* as it appears on common nouns.

Given the disagreements about where *-men* can occur, a significant task is to describe all the environments in which *-men* can occur and then to determine if it is a number marker, and therefore poses a challenge to models that would disallow a classifier and plural morphology, or if it is not a number marker, what is it's primary function and where is it in the structure. Previous analyses of *-men* have claimed that it is a number marker in the Num head, a definiteness marker in D, a plural marker in little n, and most recently, an affix adjoining the DP. All of these analyses have attempted to provide a unified analysis of *-men* as it appears on plural pronouns as well as on a restricted set of

common nouns. In this thesis I will show that a unified analysis is not possible and that the behaviour of *-men* is very different when affixed to a pronoun versus a common noun. Pronoun-*men*, I argue is indeed an instantiation of number. Pronouns with *-men* are in complementary distribution with classifiers, are grammatically obligatory and represent the most common use of *-men*. On common nouns, *-men*, is never grammatically and is pragmatically required in an extremely limited set of circumstances and is otherwise optional. I will show, is an affix of the nP/NP. In this sense, it is a type of lexical plural. This places *-men* among many other lexical plurals whose primary contribution to the phrases and sentences they modify is not plurality, but additional pragmatic meaning.

1.3 What aspects of MC syntax are implicated

In order to provide a full accounting of the behaviour of *-men* , it is necessary to first discuss issues around the status of MC nouns, the syntactic structure of MC nominal expressions with a special emphasis on classifiers and numbers, notions of definiteness and specificity and finally some consideration of the pragmatics of classifier-language plurals.

1.3.1 What is the larger theoretical context?

The implications of this thesis relate to larger theories around how plurality is realised as well as what types of languages can have plural markers. It ties into typologies of language in terms of how to characterise the difference between classifier- and plural-marking languages.

1.4 Summary of my novel data and analysis

There have been several papers and thesis chapters devoted to *-men* and most of its core aspects are well documented. I will include this data in the chapter on the features of

-*men*. However, even though there is previous work, there is far from anything approaching a consensus on what -*men* is, what it means, and what its position is. But even more fundamentally, there is considerable disagreement on the data and gaps in the data. I will summarise here my unique data, which forms the basis of my analysis, separate from the previous accounts.

1.4.1 Novel data

I show that N-*men* is compatible with a large range of quantifiers and nominal modifiers, contrary to the claims of a number of other sources. Not only is it compatible, but in fact is preferred with certain quantificational elements. I show that there are actually not many quantifiers or quantificational expressions, other than numerals themselves, that are disallowed with N-*men*. My data shows that -*men*-marked phrases can be modified with a variety of modificational expressions and relative clauses. Nothing about the presence of -*men* blocks or disallows this, as has been claimed. I also show that, even though it is true that the most common occurrences of -*men* are interpreted as definite, this is not a required interpretation. There are contexts in which N-*men* can be indefinite. My data shows that -*men* is able to modify a coordinated noun phrase, in which each noun is interpreted as plural, that is to say, the semantic contribution of -*men* distributes over both conjuncts even though it surfaces only on the final one. This strongly suggests that -*men* cannot be in little *n* or Div/Num, since it needs to be at least above the noun phrase coordination node. It also suggests that it is a modificational element, not a part of the nominal spine. I also show that an N-*men*, in some pragmatically restricted contexts, is not itself interpreted as plural. In addition to my novel data, I also highlight some much older data that seems to have been missed in the past few decades of work on -*men*. Many of these show that N-*men* can in fact be preceded by a classifier, but in a limited way. I'll also address some previous disagreements in the literature over some certain data points and show why they should not be excluded, as some have chosen to do.

1.4.2 Summary of my analysis

I argue that a unified analysis of *-men* with common nouns and pronouns is not possible. Proper names pattern more closely with pronouns. Pronoun-*men* actually obeys all of the restrictions previously applied to *-men* in general. It cannot be preceded by a [Numeral-Cl], it cannot be modified or quantified over in any way, it is (due to the nature of pronouns and proper names themselves) always definite. In addition, Pronoun-*men* can be followed by a [(Dem)-Numeral-Cl], as part of an appositive construction. All the relevant properties of Pronoun-*men* can be derived with *-men* as an inflectional plural marker.

The different syntactic environments, different interpretations and the additional pragmatic meaning associated with CN-*men* are better explained by *-men*, in that case, being a lexical plural modifier. CN-*men* typically cannot be preceded by a [Numeral-Cl], but can with the numeral 'one' some group forming classifiers, or an approximate number and a classifier; it can be quantified over and accepts all forms of modification; it cannot be an appositive expressions and precede a quantificational expression; it is typically interpreted as definite but can also occur in indefinite expressions; it seems to be subject to various pragmatic considerations. All these features are best accommodated by a lexical plural analysis.

1.5 Thesis overview

1.5.1 Chapter 2: MC Nouns

The status of MC nouns

Bare nouns in MC can occur freely as arguments and depending on the context can be interpreted as definite, indefinite, singular, plural, or generic. They are described as mass/kind-referring (Krifka, 1995; Chierchia, 1998a,b) or as having General Number

(Rullmann and You, 2003). According to Chierchia (1998b) MC nouns are arguments (kind-denoting), type $\langle e \rangle$. Their features are [+arg][−pred]. Krifka (1995) claims that MC denote concepts, of which kinds are a subset. Corbett (2000) and Rullmann and You (2003), on the other hand, say that MC nouns have General Number, that is they are unspecified for number, denoting sets that include both atomic and non-atomic individuals. Their view takes properties as basic and kinds must be derived via the down operator.

(1) a. Hufei mai shu qu le
Hufei buy book go SFP
Hufei went to buy a book/books.

b. Hufei he-wan-le tang
Hufei drink-finish-PRF soup
Hufei finished the soup.

c. Wo xihuan gou
I like dog
I like dogs (Cheng and Sybesma, 2005)

Yang (2001) and Yang (2005) claim that there are three structures for different types of MC nominal phrases. Concept-denoting bare nouns are truly bare, and only have an NP, (2). Object-denoting bare nouns, which can be either definite or indefinite, have a DP with a [± def] feature, (3). Object-denoting nouns that aren't bare have a full-fledged DP and include a Num and Cl projection, (19).

(2) $[_{\text{NP}}$ gou] juezhong le
dog extinct ASP
Dogs are extinct.

(3) wo kanjian [$_{DP}$ gou] le
I see dog ASP
Reading 1: I saw some dog(s).
Reading 2: I saw the dog(s).

(4) wo zuotian mai le [$_{DP}$ na san ben shu]
I yesterday buy ASP that three CL book
I bought those three books yesterday. (Yang, 2001)

Implications for plurality and MC nouns

The main reason that *-men* had been rejected as a plural marker by some is because Chinese is a classifier language and as such, all nouns in Chinese are mass (Krifka, 1995; Chierchia, 1998a). Mass nouns are inherently plural, and thus wouldn't be expected to have plural marking. For this thesis, I will assume that Mandarin nouns have general number.

1.5.2 Chapter 3: MC classifiers and DP vs ClP

Li (1999); Huang et al. (2009); Zhang (2008b) and others believe Chinese always has a full DP, even when nouns appear bare. Cheng and Sybesma (1999, 1998), believe that MC nominal expressions are ClP, and the the CL head in classifier languages has many of the same properties as D in plural-marking languages. Specifically that indefinite expressions are classifiers phrases, maximally, and only definite expressions are DPs. As discussed above, Yang (2005) claims that concept-denoting bare nouns have a maximal projection of NP, while object-denoting bare nouns have a DP. Both are of type $\langle e \rangle$ and can be used as arguments. Only a full DP also has Num and Cl projections.

Classifier structure

A classifier is needed in order to count nouns in Chinese. It is also commonly accepted that *-men* cannot follow a Cl-N. However, classifiers are not all the same and according to different views on classifiers, the structure of the nominal projection may be quite different. There are classifiers that create the unit of measure for a noun that does not have natural units, similar to mass nouns in Germanic and Romance languages. These are what Cheng and Sybesma (1999, 2005) call "massifiers". Classifiers that do not create a unit of measure, but simply name the unit of a noun that does have natural units are what they call 'count-classifiers". Mass-classifiers are not restricted to mass nouns, they can also be used with other nouns in order to create a unit other then the natural unit that noun has, For example, people are naturally atomic individuals and so would ordinarily be counted as such, but people may also be counted by groups. Pens might be counted individually or by package, etc. Not only is the meaning/function of these types of classifiers different, but there are structural differences as well. Mass-classifiers can be modified by certain adjectives, while count-classifiers cannot, (5). It is these mass-classifiers that can co-occur with *-men*, (6-18). This suggests that it is not the presence of just any classifier that blocks *-men*. Count-classifiers block *-men*, but mass-classifiers do not and likely have a different structure.

(5) a. yi da zhiang zhi
one big CL-sheet paper
one large sheet of paper.

b. *yi da zhi gou
one big CL dog (Cheng and Sybesma, 1999)

(6) Feng Dagou he yi qun xiao haizi-men...
Feng Dagou and one CL little child-MEN

Feng Dagou and the little children (in a group) (Xing, 1960, 1965)

(7) zhe qun haizi-men
this CL child-MEN
this group of children (Yu, 1957)

It should be also noted that in these cases the classifier may only be preceded by *zhe/na* (this/that) or *yi* (one) (Iljic, 2005). *Yi* in this position can indicate non-specificity (indefiniteness) and is suggested to be in a higher position. It is only a true numeral *one* when stressed (Cheng and Sybesma, 1998; Rullmann and You, 2003). Cheng and Sybesma (1998) claim that the numeral preceding mass-classifiers is not in SpecNumP, as most numerals are, but rather in SpecClP. According to this view massifiers aren't classifiers at all, but nouns that can function as a particular type of classifier. They have a CONT feature, are generated in N and moves up to Cl at LF. The Noun is in a lower NP/ClP. In this case, it could be that (17) has a similar structure and *-men* is in the lower phrase, which would have to be a NumP, such as (8), adapted from Cheng and Sybesma (1998). However Wu and Bodomo (2009), strongly disagree with Cheng and Sybesma (1999)'s view. They claim that all MC nouns are mass and classifiers indicate the semantic class of the noun. They claim that Cheng and Sybesma (1999)'s distinction between nouns that have "natural" units and ones that do not is too subjective. They claim classifiers are units of enumeration which mark countability; they make the semantic partitioning of nouns syntactically available. Particularly given that Cheng and Sybesma (1998) also concede that so-called "massifiers" can also occur with nouns that otherwise occur with "count-classifiers" in order to put them into a particular grouping, there doesn't appear to be enough justification to partition nouns themselves as strongly mass or count, but rather the classifiers themselves are distinct in how they partition the extension of the noun, (8).

(8) yi ben shu/ yi bao shu/ yi luo shu/ yi xiang shu

one CL:volume book/ one CL:bag book/ one CL:pile book/ one CL:box book
a book/ a bag of books/ a pile of books/ a box of books

The following example, contradicts two claims made by Cheng and Sybesma (1998). The first, that [*yi*-CL-N] cannot get a kind reading, since the classifier itself performs the function of individuation. The other is that only "massifiers" can be modified by an adjective. While it's true, as they demonstrated, that not all adjectives can occur in this position, the restriction is not due to the type of classifier, but more likely to the type of adjective.

(9) Yi wei hao laoshi bu jinjin jiao xuesheng zenme xueshi
one CL good teacher not just teach student how study
A good teacher doesn't just teach students how to study. (Wu and Bodomo, 2009)

The structure adopted by this thesis that that no matter the type of classifier, they all have the same structure, which is Cl/Div as a functional projection above the noun. The numeral heads a projection above that and the entire nominal expression is a DP.

1.5.3 Chapter 4: Final MC Nominal Structure

This chapter will build up a maximal structure for MC nominal expressions, within which the analysis of -*men* will take place.

Phrases covered and maximal structure

This chapter covers various types of modification with *de* including adjective phrases, relative clauses, and possessives; coordination; quantifier phrases; and appositive expressions. In the end, I adopt the following structure: [DP [D][QP [Q][NumeralP [Numeral][ClP [C][nP [n][NP]]]]]].

1.5.4 Chapter 5: Data on -men

-*Men* has a very restricted distribution. It attaches only to pronouns, proper names, and some common nouns, generally those referring to humans but occasionally animals, though it is only obligatory on pronouns. It cannot be preceded by a numeral-classifier expression, but pronouns and proper names may be followed by such an expression. Proper names with -*men* may be interpreted as plural or collective. a [proper name-men] followed by a number expression yields only the collective reading. Proper names with -*men* can't be followed by a demonstrative, but pronouns can. A N-*men* always takes wide scope over intensional verbs. It may not occur in generic sentences or kind-referring expressions, neither can it occur in existential sentences,(Iljic, 1994). For these reasons and others, it is regarded as definite.

(10) a. xuesheng-men
student-MEN
the students

b. *san ge xuesheng-men
three CL student-MEN (Li, 1999)

(11) XiaoQiang-men shenme shihou lai?
XiaoQiang-MEN what time come
When are XiaoQiang and the others coming? (Iljic, 1994)

(12) a. wo qu zhao haizi
I go find child
I will go find a/the/some child/children

b. wo qu zhao haizi-men
I go find child-MEN

I will go find the children (Li, 1999)

(13) a. *you ren-men
have person-MEN

b. you ren
have person
There is/are somebody/some people.

c. *mei you ren-men
not have person-MEN

d. mei you ren
not have person
there is nobody (Iljic (1994) quoting Rygaloff (1973) and Yorifuji (1976))

A N-*men* can't be used as a predicate. It cannot co-occur with singular demonstratives *zhege/nage* 'this/that', however plural demonstratives *zhexie/naxie* 'these/those' are compatible with *-men*.

The generally accepted features of *-men*, from Li (1999), are:

a *-Men* attaches only to pronouns, proper names, and some common nouns.

b Common nouns with *-men* must be interpreted as definite.

c A proper name suffixed with *-men* may get either a plural or a collective reading.

d A pronoun/proper name with *-men* may be be followed, but not preceded, by a quantity expression. When a proper name with *-men* is followed by a quantity expression, it only gets the 'collective' reading. Common nouns with *-men* cannot occur with any quantity expression (Li, 1999).

1.5.5 Chapter 6: Final analysis of -men

Issues with previous anaylyses

The existing analyses of *-men* fall broadly into two camps: those that claim *-men* is a plural marker and those that claim it is something else. At this time, the most prominent account is that *-men* is just a plural marker, no different in meaning from English -s (Li, 1999; Huang et al., 2009; Nakanishi and Tomioka, 2004; Cheng and Sybesma, 1999; Yang, 2005) and Niu (2015). The accounts outside of this camp are in less agreement, but the central point is that *-men* is not a plural marker, or at least not only a plural marker; it marks definiteness or collectivity (Kurafuji, 2004; Chao, 1968; Iljic, 1994, 2005). Pronouns and proper names are generated in D and therefore they can be followed by numeral-classifier expressions and even another noun, (14). Niu (2015) claims *-men* has a [+PL] feature and an uninterpretable animate feature [*u*animate], since there are some contexts in which *-men* attaches to animal nouns.

(14) ta-men san ge (ren)
he-MEN three CL (person)
they three (Li, 1999)

(15) *zhe/na ge ren-men
this/that CL person-MEN (Li, 1999)

(16) a. *wo qing san ge ta-men chifan
I invite three CL he-MEN eat

b. wo qing ta-men san ge (haizi) chifan
I invite he-MEN three CL (child) eat
I invited them three (children) for a meal.

c. *wo qing pengyou-men san ge (ren) chifan
I invite friend-MEN three CL (person) eat

d. wo qing XiaoQiang-men san ge (ren) chifan
I invite XiaoQiang-MEN three CL (person) eat
I invited XiaoQiang and two others (in the group) to a meal. (Li, 1999)

(17) a. *na haizi-men
that child-MEN

b. na xie haizi-men
that XIE child-MEN
those children Yang (2005)

Yang (2005) explains sentences like (18), by claiming it is not a single DP, but an appositive expression.

(18) wo qing [DP ta-men] [DP na san ge (haizi)] chifan
I invite he-MEN that three CL (child) eat
I invited them three (children) for a meal. Yang (2005)

Kurafuji (2004) claims that *-men* is generated in D. It is a plural element that also marks definiteness. *-Men* is a pluralizer and a definite determiner; [+human] nouns are ambiguous between count and mass/kind nouns and when followed by a plural marker are count. He claims that the numeral and classifier are part of the classifier phrase which is in Spec DP. The numeral-classifier phrase cannot precede a *-men* suffixed noun due to semantic incompatibility. Similarly, Cowper & Hall 12 claim -men spells out a Def head with dependent features [+animate] and [¿1], nouns-*men* are then interpreted as animate, definite, and plural.

Iljic (1994) claims *-men* is a definite collective marker. He offers many examples, but

formal syntactic or semantic analysis. Chao (1968) claims -men pluralises pronouns, but collectivizes nouns for persons. Norman (1988) says it refers to a group of people taken collectively and appears to have arisen from a fusion of *mei* 'each, every' and *ren* 'person'. While Newnham and Lin-tung (1971) suggest human nouns with *-men* have some shared quality.

(19) ni-men si wei taitai xiaojie-men
you-MEN four CL married.lady young.lady-MEN
you four, ladies and young ladies Iljic (1994) quoting She (1979)

While Iljic (1994) argues in favour of it being a collective, but does admit there are times when N-*men* gets a straightforwardly plural interpretation. On the other side, Li (1999); Yang (2005) and Niu (2015) argue for N-*men* to be taken as primarily plural, but accept that it gets a collective reading in certain contexts.

Previous work has had some good insights and very interesting analyses. However, non have considered all the features of *-men*-marked nouns. They derive some features but seem to ignore others.

Summary of my analysis

There can be no unified analysis of *-men* on pronouns and on common nouns. On pronouns, *-men* is essentially a plural marker, in Div/Cl. However the environments in which CN-*men* may occur are much more varied and do not obey the same constraints as pronoun-*men*. On common nouns, *-men* is a modifier of the noun phrase. While it is associated with plurality, and does force a plural interpretation of otherwise general number nouns, it's use is highly context-dependent. It is pragmatically rather than grammatically motivated. As an affix of nP/NP, the behaviour we see of CN-*men* is accounted for (ability to co-occur with most classifiers, ability to co-occur with certain numerals, ability to occur in indefinite expressions, ability to distribute over coordinated nouns).

Chapter 2

Mandarin Chinese nouns and unexpected plurals

2.1 Introduction

The goals of this chapter are three-fold: first, to present a an overview of the syntax and semantics of number cross-linguistically, second, to present the analyses that exist for Mandarin bare nouns and number and third, to situate the issues surrounding *-men* within those contexts.

The organisation of this chapter is as follows: section 2.2 is an overview of theories regarding nominal plurality, the variety of forms number marking takes across languages, and some basic facts on the 'inherent plurality' of mass terms. The next section, 2.3, describes the types of plural marking that are not predicted within typical frameworks of plurality. In section 2.4 I provide an overview of the theories proposed for bare noun arguments, with a particular focus on Mandarin Chinese. This then leads to section 2.6, which explains the ways in which plurality can be expressed in MC, and the puzzle that the plural marker *-men* presents.

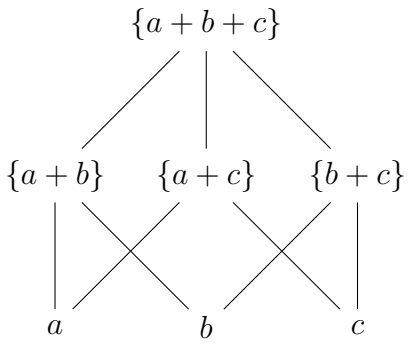
2.2 Nouns and plurality

2.2.1 Plurality

This section will introduce some general assumptions around plurality, followed by more specific issues regarding the morpho-syntactic marking of number. This leads to a description of kind-referring or mass nouns and then the various analyses for bare nouns in Mandarin .

2.2.2 Number marking

The domain of quantification contains ordinary singular individuals and plural individuals, represented below as sets. The domain forms a complete join semilattice, in which the individuals at the bottom of the structure are the singular ones.



(1)

The general assumption being that the singular individuals constitute the reference of singular definite DPs and the plural individuals, sets in curly brackets, constitute the reference of plural definite DPs. The domain is ordered by a 'subgroup' or 'part-of' relation, in that the singular individuals are parts of the plural individuals. Singular common count nouns, for example *dog*, are true of individuals dogs and plural common

count nouns, *dogs*, are true of pluralities, or sets, of dogs. Plural entities are formed via a "*" operator, which takes a 1-Place predicate, P, and generates all the individual sums of members of the extension of P. Mass terms, while intuitively plural in a sense, are not taken to contain atomic individuals in their extensions. According to Link (1983) "the set approach to plural objects does not carry over to mass terms,..." Inherent in the notions of a set is atomicity which is not present in the linguistic behaviour of mass terms."

The definite determiner in English, *the*, within the Frege-Russel definition, is the ι operator. The ι-operator, when applied to a set of singularities yields one object, and when applied to pluralities applies to the largest plurality in that extension, i.e. all the dogs.

2.2.3 MC nouns and plurality

As a classifier language, Mandarin nouns are characterised as being able to appear bare in argument position and to require classifiers in order to combine with numerals. Some theorise that Mandarin nouns are universally mass terms, others that they are kinds, and still others that they are general number. In this chapter,, I will explore each of the leading analyses of Mandarin nouns and the ways in which they succeed and fail to accommodate my data on *-men*. By the end of the chapter I will have developed my argument for the view of Mandarin nouns I will adopt in this thesis and lay the foundation for the subsequent analysis of the structure of Mandarin nominal expressions.

We have seen earlier in this chapter that Mandarin bare nouns occur freely in argument position and require the presence of a classifier in order to combine with numerals. It has widely been observed that MC lacks a system of plural inflection. For these reasons Chierchia (1998b) regards MC nouns as [+arg, −pred], essentially mass, and Krifka as concept-denoting. Borer et al. (2005) regards all nouns as basically mass, however plural marking and classifiers both perform the role of dividing the denotation of the noun and therefore should not co-occur. And yet Mandarin has a nominal marker that appears to mark plurality.

(2) jiazhang-men zou-le
parent-MEN leave-Asp
'The parents have left.' (Zhang, 2008b)

The existence of *-men* has been noted many times before, but is often explained away by claiming it is not a plural marker at all, but a collective marker. This is not really a satisfactory explanation, as collectivity would still not be expected to combine with an inherently mass noun. As mentioned by Borer (2014), many descriptions of *-men* claim that it never co-occurs with classifiers and so, for her analysis *-men* is simply a lesser used strategy for MC nominal division that is typically performed by a classifier. However, this is also not a sufficient explanation since, as opposed to the canonical description for *-men* it does in fact co-occur with classifiers, in a limited way

Neither of these explanations really accounts for the true behaviour of *-men* . It is true that is has a much more restricted use compared to plural-marking languages, but it is not as quite as restricted as previous accounts claim. According to the accounts of the denotation of kind or mass nouns and the function of plurality, the nominal marker *-men* would not be predicted to exist. Even though there have been several analyses proposed for it, none have been able to do so with a complete, or at least more complete, picture of the evidence. *-Men* does not fit neatly into the kinds of plurals we expect from plural marking languages, and should not exist in a classifier language at all. It continues to be a puzzle. One which I will address over the course of this thesis.

2.3 Unexpected plurals

The analyses outlined above of Chierchia (1998b); Krifka (1995) and Borer et al. (2005) make strong claims about the complimentary distribution of plural inflection and a generalised classifier system, to the point that the use of one or the other serves as the basis for a kind of typology of languages. However, a number of languages do not fit

neatly into one category or the other. The principal concern of this thesis is the Mandarin Chinese plural marker, but it is just one option within considerable variety of plural marking that can be found in the world's languages. In this section, I will present a brief description of several nontypical plurals, before focusing on the specific issue of plural markers within classifier languages.

2.3.1 Other classifier language plurals

Mandarin is not the only classifier language that has a plural marker. And far from being an unusual feature, it appears to actually be fairly common. Paiwan, a Formosan language, has an impoverished classifier system used only with human nouns and no plural morphemes, but indicates plural nouns via reduplication also for human nouns; non-human nouns do not require overt classifiers and are not pluralised. In the following, *ma-* is a [+human] numeral classifier.

(3) ma-cidil a vavayan/*vavayavayan
MA-one A girl/girl:RED
'one girl' (Tang, 2001)

(4) ma-dusa a vavayan/*vavayavayan
MA-two A girl/girl:RED
'two girls'

(5) ma-telu a *vavayan/vavayavayan
MA-three A girl/girl:RED
'three girls"

Bangla is another classifier language with plural marking. Both *-ra* and *-gulo* are considered

animate plural classifiers, and *-ra* is sometimes called an associative plural and unlike *-gulo*, it can sometimes co-occur with a numeral and classifier, (Chacón, 2011; Dayal, 2014; Biswas, 2013, 2014).

(6) tin-jon mohila aSben. mohila-ra okhane boSben
three-CL$_{HUM}$ lady will-come. lady-RA there will-sit
'Three ladies will come. the ladies will sit there. (Biswas, 2014)

(7) ami tin Te boi kinlam. boi-gulo dami
I three CL book bought. book-CL$_G$ expensive
'I bought three books. The books were expensive.' (Dayal, 2014)

More similar to the MC case are Korean and Japanese. Both are classifier languages whose nouns often appear bare and may be interpreted as singular or plural depending on the context. However both also have plural markers. Korean has *-tul*, (8), and Japanese has *-tachi*, (9).

(8) ku haksayng-tul-i i ay-tul-eykey phyency-lul ponayessta Korean
that student-PL-Nom this child-PL-Dat letter-Acc send.Past
'Those students sent a letter/letters to these children' (Kim, 2006)

(9) otokonoko-tati-ga asonde-iru
boy-TATI-Nom play.Prog
'(The) boys are playing.' (Nakanishi and Tomioka, 2004)

There are a variety of accounts for these plural markers, just as there is for MC *-men*. Both *-tul* and *-tachi* are argued, albeit without consensus, to contribute more than just plurality in their meaning. Korean *-tul* is sometimes regarded as simply plural, but sometimes as a distributive marker. Japanese *-tachi* is frequently analysed as an associative marker.

The point here is that the Nominal Mapping Parameter of Chierchia, as well as the exo-skeletal approach of Borer, while containing important insights, also incorrectly rules out expressions of number that do occur.

2.4 The status of MC nouns

Let us turn now to bare nouns. Within the general view of plurality, these would include mass nouns and bare plurals in English, and all nouns in Mandarin Chinese .

Mandarin bare nouns may freely appear in argument positions. They may be interpreted as definite or indefinite, singular or plural, or generic, depending on the syntactic and discourse context. The syntax of MC nominal expressions, including bare nouns, will be covered in chapter 3.4. In this chapter, I will focus on the typology of Mandarin bare nouns and how that relates to the expression of number. Yang (2001) found that MC bare nouns receive much the same interpretation as English bare plurals.

2.4.1 Kind and Mass interpretations

The semantic characteristics of MC bare nouns is that they are kind-denoting, their syntactic positions influences/indicates their (in)definite interpretation, and they contain vague number information.

In what follows, I will discuss Chierchia's (1998b) proposal on bare nouns across languages; Krifka's (1995) proposal on Mandarin bare nouns; Rullmann and You (2003)'s views on MC nouns and General Number; Yang (2005)'s analysis of plurality in Mandarin , as well as Borer et al.' (2005) proposal for the essentially mass nature of all nouns before the structure gives them an interpretation.

Chierchia

Mass nouns are very similar to plurals. For Link (1983) and Landman (1991) both count and mass nouns have domains of individuals, but unlike count nouns whose domains contain atomic and non-atomic individuals, the domain of mass nouns is not required to be atomic. Chierchia (1998b), rather than positing two different domains, suggests that the structure of plurals is sufficient to account for the properties of mass nouns. In his view, mass nouns, for example *furniture*, come out of the lexicon already pluralised; the singular/plural distinction is "neutralised'. A mass noun like *water* is the same except that its individual units are more vague and depend on context.

Chierchia (1998b), following on from Carlson (1977), argues that bare arguments are kinds, which are entities of type $\langle e \rangle$. Chierchia claims that any natural kind will have a corresponding property of type $\langle e, t \rangle$, which is the property of being that kind. There are functions to take a particular kind to its corresponding property and vice-versa. To convert one to the other, he introduces the "down" operator $^{\cap}$ and "up" operator $^{\cup}$. The down operator shifts from properties to kinds and the up operator from kinds to properties. He claims that kinds are not individual concepts per se but can be represented as individual concepts which are functions that map from worlds or situations onto pluralities. Not all individual concepts are kinds; only those that identify classes of objects and generally have a plurality of instances. If x has the property of being an instance of the kind k, x may be singular or plural. When nouns function as restrictors of quantifiers or in predicate positions, then they are predicates. When they are kind-denoting they are arguments. These features of nouns may be represented as [±arg] and [±pred]. The features constrain how the nouns (and NPS) of a language are mapped into their interpretations. If an NP is [+arg, −pred], then nouns of that language can be mapped to arguments, but not predicates, and therefore uniformly denote kinds. According to his Nominal Mapping Parameter, each languages nouns would have some combination of these features, naturally with the exception of [−arg, −pred].

For a language in which nouns refer to kinds, every noun is the of type $\langle e \rangle$, the argumental-type. Nouns can occur freely as arguments. The prediction for these types of nouns then is that they are all, in a sense, mass and plural marking will be absent. A classifier will be needed to individuate, and subsequently, count such nouns. This is, he proposes, the case for Mandarin Chinese nouns.

Krifka

Krifka (1995) suggests that bare nouns are kind-referring. He proposes an R operator, which functions similarly to Chierchia's "up" operator, to derive the predicative use of a noun. What the R operator yields, when applied to a kind, is the property of being a specimen or subspecies of that kind. Within this view, Mandarin nouns are kind-denoting which can be made object-denoting by means of a classifier.

However, he notes that that MC bare nouns, which are type $\langle e \rangle$, are frequently modified by relative clauses of type $\langle e, t \rangle$, which is not possible. To solve this problem, he introduces as subset of kinds, *concepts*. He suggests that , unlike kinds, concepts do not require well-established background knowledge. For Krifka then, Mandarin nouns are concepts. A modifier that combines with a concept-denoting noun, is a concept modifier, not a kinds modifier, and a classifier can apply to that modified concept. He also introduces the σ operator, which similar to Chierchia's "down" operator, turns a property into a concept. The σ operator also functions as a uniqueness operator. In Krifka's system, object-denoting nouns are derived by applying a classifier. Which is to say, a bare noun or a modified noun both are of type $\langle e \rangle$, a classifier takes a type $\langle e \rangle$ element to form an object-denoting element of type $\langle e, t \rangle$. Thus, MC nouns refer to a subset of a kind, in Krifka's proposal.

Borer

All nouns in all languages enter the structure as featureless roots and get their features, including count or mass features, from the structure. In Mandarin, as in other classifier languages, the classifier occupies the Div head. In plural-marking languages, the plural marker occupies the Div head, both individuating and pluralizing the noun.

Borer et al. (2005) and Borer (2012) proposes a universal account for the mass-count distinction based not on the lexical-semantics of the nouns, but on the syntax of division. Similar to Chierchia (1998b) and Krifka (1995), Borer et al. also predicts that classifier ans plural-marking do not occur together. In the previous analyses, this was due to a semantic conflict in that mass nouns or kinds do not contain atomic individuals and therefore combining with plural morphology would either be meaningless or yield a bad result. For Borer et al. all nominals are initially the same and their count or mass interpretation is derived by the structure. Roots are pure phonological indices, lacking any and all syntactic or semantic properties, i.e. category, arguments, etc. They receive category and other features by merging with little n.

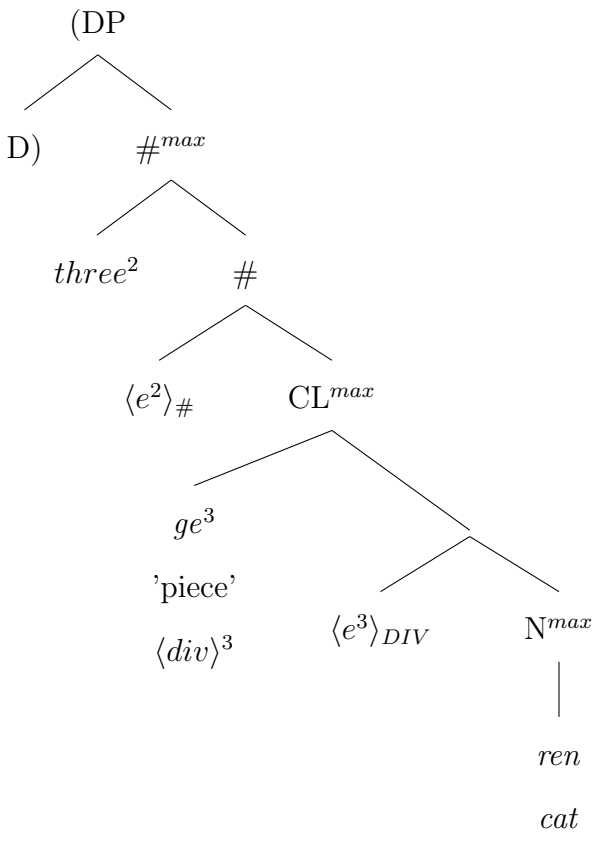
There are many other factors behind and consequences for this analysis, but what is most significant for this thesis are the predictions for plural-marking in classifier languages. She incidentally agrees with Chierchia (1998b), that all Mandarin Chinese nouns are mass, however for her this is not a particular fact of MC, but of all nouns universally. She in a sense extends Chierchia's view of MC nominals that the mass-count distinction is grammatically constructed to all languages.

She makes a number of significant critiques of Chierchia's analysis for Mandarin. Chierchia derives the absence of plural inflection in MC by assuming that a CL+N, as a portioning out of a mass noun, cannot be pluralised, but in reality there is no particular reason why that should be so. If his suggestion were to hold, then something like *piles of sand* in English should not be possible either, and yet it is. In addition, she notes, it is not enough to try to explain why languages with classifiers should lack plural inflection without also

explaining why plural-inflecting languages lack classifiers. After all, both English and Italian do have mass nouns, which are still able to combine with count determiners. And such mass nuns can be portioned out by the insertion of a separate head, which itself can be pluralised, as we have already seen earlier. But in MC, portioning is accomplished via inflection which cannot be pluralised. In short, his analysis cannot account for the observed behaviour of plural-marking and classifier languages.

Classifiers and plural inflection appear to be in complementary distribution. Borer proposes that not only MC nouns, but all nouns are mass and require portioning out. This portioning function is accomplished by the same head which in classifier languages hosts a classifier and in plural-inflecting languages hosts a plural marker. The two strategies are in complementary distribution because they occupy the same syntactic position, namely the Div head.

(10) a.



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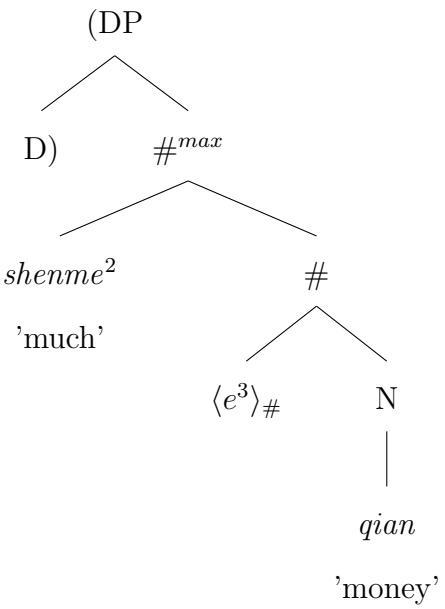


She argues that mass nouns are not inherently plural, but are unmarked for count or mass, and mass interpretation is simply the default interpretation when no division is made. The following is the structure for English and MC count and mass nominals.

In this view, plurals and indefinite articles in English are classifiers in that they assign value to $\langle e \rangle_{DIV}$. And for MC, (10-a) shows that an overt classifier divides the "stuff" of the noun, while in (10-b), no classifier was necessary. Thus no Chierchia-style type-shifting is necessary to derive predicates from kinds. NPs, as opposed to DPs, are always predicates not only in MC, but in all languages. The difference then between English and MC nominal expressions is that the output of an English classifier is an arbitrary division while the MC classifier output is a well-defined portion. They are the same in that the portioning out is what renders them well-formed when counted or pluralised.

Implications for MC N-*men*

Under most of the above views of the status of Mandarin nouns and the function and meaning of plurality, there would seem to be no way to integrate a plural marker, as *-men* appears to be. Within a Chierchian view, MC nouns would all be mass and therefore not predicted to require or even be compatible with plural marking. The picture is not any

clearer for Krifka. MC nouns, though referred to as concepts rather than the kinds they are taken to be for Chierchia, are all the same, type $\langle e \rangle$. There is simply no place for a plural marker.

Borer's exoskeletal approach, on the other hand, may seem to easily allow for N-*men* or not, depending on -*men*'s distribution. N-*men* would have to be in complementary distribution with Cl-N. In that case, the solution is simple, the classifier and plural marker are each instantiations of Div. A number of descriptions of -*men*, which will be explored in chapter 5, in fact claim that it never co-occurs with a classifier. However, several papers have pointed out, and this thesis will cover in detail, that there are a number of circumstances in which a classier can co-occur with N-*men*. It is accurate to say they do not typically occur together, for a number of reasons, however they are decidedly not in complementary distribution. This state of affairs poses a puzzle for how or where -*men* could possibly fit into Borer's system. We will see in chapter 5, in which the distribution and function of -*men* is explained thoroughly with numerous examples, and chapter 6, in which the final analysis of this thesis is built up, that Borer's approach is compatible with -*men*. As far as the interpretation of MC nouns is concerned, this thesis will adopt that of Rullmann and You (2003), and others, that MC nouns are general number.

2.4.2 Count noun accounts

Several analyses build upon Chierchia or Krifka, claiming that that while the bare NP might be mass or a concept, additional structure, often phonologically null, which can type-shift them to properties and then, via predicate modification, to atomic entities, which could then be pluralised. Below is an overview of one specific proposal. Papers specifically on -*men* are covered in more detail in chapter 5.

Yang 2005

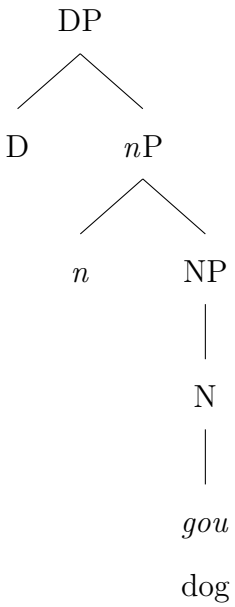
Yang (2005), follows Krifka (1995) in taking concepts to be primitive, based largely in the idea that concepts are more general, though she disagrees with Krifka that they do not require background knowledge. She proposes that when bare nouns function as arguments and denote concepts they have the structure of a bare NP, (11). Since concepts are of type $\langle e \rangle$ they can appear in argument position. No additional structure above the NP is required.

(11)


When a bare noun is object-denoting, Yang argues, it must have a more complicated structure. The noun, in the N head, is concept-denoting, the little n merges with NP and functions as an "up" operator. This triggers N to n movement and the resulting nP denotes a property. At this stage, the number neutral interpretation of the noun falls out naturally. A property contains singularities and pluralities. The little nP is of type $\langle e, t \rangle$ and can combine with adjectives or relative clauses though predicate modification.

Yang claims that there is a D projection in MC which is null, where [±def] features are encoded. She assumes that the D head is of type $\langle \langle e, t \rangle, e \rangle$, which takes a predicate and returns an entity. MC bare nouns can be interpreted ad definite or indefinite, so the D head may have a Choice Function (CF) or a Chierchia-style "down" operator, both of the same semantic type.

(12)



The structure of classifiers and measure words is discussed detail in chapter **??**, so I will only briefly mention their function here to complete Yang's analysis. Since nP denotes a property which is a set of singularities and pluralities, numerals cannot combine directly with them. The Cl head functions to "extract" atoms from that set of singularities and pluralities, to make nouns compatible with numerals[1].

Measure words cannot be thought of the same way. They are not picking out singularities from the denotation of the noun. For example, the classifier for books is *ben*. When it picks out atoms from the domain of books and then merges with a numeral, that numeral counts books, which is the correct interpretation. However applying that same process to the measure word *xiang* 'box' does not yield the correct interpretation, since in that case the numeral ought not to be counting individual books, but rather boxes of books. The function of a MW is to provide a base unit with which to measure a complex nominal. When *xiang* merges with nP 'book' it creates individual units that contain books. The denotation of the MW is a set of atoms which is compatible with numerals. Yang emphasises that classifiers and measure words are in complementary

[1]Classifiers frequently appear without a numeral. In such cases, the implied numeral is *yi* 'one', so it may appear that classifiers are still facilitating counting. However there are claims that unstressed *yi*, which can be omitted, is not a numeral, but functions more as an indefinite. The actual numeral *yi* is stressed and may not be omitted (Rullmann and You, 2003). This suggests that it is not entirely accurate to describe the function of a classifier solely as serving to allow numerals to combine with nouns

distribution, therefore though they have semantic differences, they occur in the same syntactic environments.

Finally, following Ritter (1991), Yang proposes a functional projection, NumP, as the locus of number within the DP. The Num head realises the values [+Plural] ([+PL]) and [+Singularities] ([+SG]). She notes that [+singularities] is distinct from [+singular] in that the former refers to a set of atomic individuals while the latter to one single entity. This distinction is significant for MC DPs, as *san ben shu* 'three books' is plural and *yi ben shu* 'one book' is singular in the English, but in Mandarin they are both singularities, due to the classifier. Greenberg (1966) suggests that when there is a distinction between singular and plural, the singular is usually unmarked, similarly Yang suggests that [+SG] in Mandarin is unmarked and that [+PL] is marked. She goes on to argue that dominated by NumP, is NumeralP. MC numerals, she claims, must be phrasal because they can be replaced by a questions phrase, *ji*, (13).

(13) ni you san/ji ben shu
you have three/how.many CL book
You have three books/How many books do you have?

She assumes that numerals have the semantic type of modifiers $\langle\langle e,t\rangle,\langle e,t\rangle\rangle$ and apply to an argument denoting a set of individuals, (Ionin and Matushansky, 2004). The NumP could be integrated into the nominal in two main ways: a numeral and classifier form a complex head, (Tang, 1990; Krifka, 1995; Yang, 2001), or the numeral heads its own projection, (Li, 1998; Yang, 2005; Huang et al., 2009). Assuming it does head its own projection, it could merge with an XP, or merge in the specifier of an XP. Yang (2005), and many others, adopt the latter option, a NumeralP merges in the specifier of a ClP. This captures the phrasal nature of numerals as well as the close relationship between numerals and classifiers. This is also the view adopted in this thesis, which will be seen further in chapter 3.

2.4.3 General Number

Rullmann and You (2003) differ from both Chierchia and Krifka. Following Corbett (2000), they propose that MC nouns have General Number, which is to say they are unspecified for number. Their view differs from the characterisation of MC nouns from Chierchia (1998b) and Krifka (1995), who suggest that since MC nouns are essentially kinds, they are basically mass in their interpretation and their domains do not include atomic individuals, (Link, 1983). Rullmann and You (2003) argue that MC nouns denote sets containing both atomic and non-atomic entities.

While their focus is more on the interpretation of the number value of bare MC nouns, their description seems to not so dissimilar to Borer's approach. Recall, above, she claims nuns are not inherently plural, but unmarked for count/mass. This could suggest ambiguity. Rullmann and You (2003) explicitly rule this out claiming that an instance of a Mandarin Chinese bare noun is not ambiguous for number but underspecified.

They also do not take kinds to be basic, but instead properties; kinds are derived. This stance is based in studies of children's grammar, which seems to develop from properties initially. Children acquire nominal phrases starting from N, to NP, to DP, corresponding to Kind to Predicate to Specific DP.

2.5 Non-standard plurality crosslinguistically

In this section, I begin with a brief tour of cross-linguistic facts related to the variety of number marking and the interpretation of nouns. This is to establish that the MC plural is not so very unusual after all and perhaps should not be treated as an anomaly, but rather one option among the spectrum of number marking.

The first example I will present is Hungarian. Hungarian nouns pattern similarly with Romance nouns; they require determiners to function as arguments, are not able to appear

bare, and are inflected for plural. However, when there is an overt numeral, nouns are no longer inflected for plural(Dékány, 2021; den Dikken, 2023).

(14) egy fiú nevet
a boy laugh.SG.PR
'A boy laughs.'

(15) nevetnek a fiúk
laugh.PL.PR the boy.PL
'the boys laugh'

(16) (a) három fiú nevet
(the) three boy laugh.SG.PR
'(The) three boys laugh.'

In Turkish, nouns appear bare when they are definite or generic, but require an overt determiner when indefinite. They are inflected for plural, but the same plural marker that gets an ordinary plural interpretation on common nouns gets an associative interpretation on proper names (Görgülü, 2011, 2018, 2022; Bale et al., 2010; Renans et al., 2017, 2020). Mi'kmaq, an Eastern Algonquin language has separate markers for ordinary plural and for associative plural (Little, 2018a,b). Associative plural markers, while they do occur, are not typically predicted as the semantics of plurality inherently includes associativity and collectivity. However, as seen in this case and others, languages can split aspects of a single complex concept, here plurality (Corbett, 2000; Massam, 2012). For both Chierchia (1998b) and Krifka (1995), mass nouns are predicted to be incompatible with plural marking. It is true that the combination of mass nouns and plural marking does not get the interpretation of non-atomic individuals that a pluralised count noun would get. However they do combine and get a different interpretation as typical plural. In English, pluralised mass nouns get kind interpretations. In Greek, mass nouns can be pluralised

and get an abundance reading (Tsoulas, 2009; Renans et al., 2018). And finally, for this section, some languages morphologically mark the singular. Welsh, Arabic, and Russian are just some of the languages that take collective or mass nouns derive singular nouns, and in the case of Arabic and Welsh, pluralise those singulatives (Asmus and Werner, 2015; Ojeda, 1992; Kagan and Nurmio, 2024; Noble, 2022, 2024).

(17) fasol' / fasol'nik / fasol'niki *Russian*
'beans / bean / beans'

In this section we have seen that there is considerable variety within plural-marking languages. And that is without addressing the many languages that have more than a singular/plural distinction, but also dual, paucal, etc.

From these examples alone, it would seem that the reality of nouns and number marking is not as idealised as those accounts that seek to parameterise nominal number systems. I will now move on to the main concern of this thesis, plural marking within a classifier language, and in particular the case of MC.

2.6 Classifier language plurals

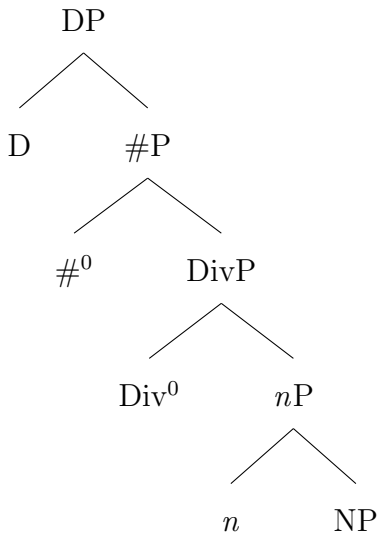
Regardless of the specific framework, whether it be Chierchia; Krifka, or Borer et al.'s, it is not predicted for a classifier language to also have plural morphology. And yet, in a number of classifier languages, including Japanese, Korean, and of particular interest for this thesis, Mandarin Chinese.

2.6.1 Splitting the plural head

MC is far from the only classifier-language that has a plural marker, others include Japanese, Korean, Bangla, and more (An, 2016; Biswas, 2013, 2014; Dayal, 2014; Kang, 1994; Kim, 2009; Kim and Melchin, 2018; Kwak, 2003; Park, 2008; Song, 1975; Ueda and

Haraguchi, 2008; Kurafuji, 2004; Nakanishi and Tomioka, 2002). In addition there are other expressions of number that do not fit neatly into an approach which posits a single head as the seat of number such as singulatives, mentioned above. An approach that has been adopted to account for a wider variety of plural marking, including classifier-language plurals is the split analysis of plurality, (Mathieu, 2002, 2012, 2014; Wiltschko, 2008). In this system different types of plurals are realised under different heads. A counting plural appears in a #/QuantityP, a dividing plural in Div(ision)P, and lexical plurals in *n*P. The apparent problem when it comes to *-men* is that the typical number phrase is separated from the noun by the classifier phrase. This has led to the claim that *-men* can only be realised on the noun when the classifier head is empty, and thus the noun is able to move to Num. However, despite many claims to the contrary N-*men* does co-occur with classifiers in certain contexts. The splitting plurality allows for both a classifier and *-men* to appear together. The classifier is hosted in the Div head and *-men* in *n*. This is already approaching a solution for the puzzle of *-men*, but there needs to be more in order to make the correct predictions in terms of the types of classifiers and numerals with which *-men* may and mat not co-occur, which will be revisited in chapter 5.

(18)



2.7 Chapter summary and next steps

In this chapter I provided an overview of literature pertaining to the interpretation of mass and kind nouns versus count nouns and the expression of number. Of particular importance for this thesis is the status of Mandarin Chinese nouns, which I take to have general number, when bare. Furthermore I have described several examples of plural markers with unexpected and unpredicted uses. Of particular interest is the Mandarin Chinese plural marker *-men*, which does not fit neatly into any existing views on MC kind/mass nouns, general number, and number marking. The structure of the extended projection of the noun is the main topic of the following two chapters. Chapter 3 primarily examines the structure of bare nominals and classifiers and Chapter 4 addresses various modifiers and clauses to build up a maximal projection for MC nouns. I will describe the distribution and uses of *-men* in Chapter 5 and then in Chapter 6 develop my analysis to account for all its behaviour.

Chapter 3

MC Nominal Expressions, DPs and ClPs

3.1 Introduction

This chapter will examine some fundamental aspects of MC nominal structure. Namely the status of MC nominal expressions as full DPs or ClPs; the constituency of numerals and classifiers' as well as the structure associated with classifiers and the different types of classifiers. It will provide an overview of current proposals for the syntactic structure of MC nominal expressions, as well as the structure I will adopt for this thesis. This chapter and the next will provide the necessary context for descriptions of the distribution of *-men* and form the scaffolding on which my analysis of *-men* is built in the subsequent chapters. This chapter will address the fundamental issues of what are the main structures that make up the matrix MC nominal. This will begin from the bottom up, starting with the distribution and interpretation of bare nouns, then classifier-noun phrases, both with and without a numeral. This will then lead to a summary of which types of phrases in which positions in the sentence can receive (in)definite and (non)specific interpretations. I will go into some detail about the structure of classifier phrases, the different types of classifiers, their constituency with numerals and nouns. This will finally lead to the DP/ClP/NP

debate about MC nominal expressions. I argue in favour of the DP hypothesis, based on evidence taken from Li (1998); Liao and Vergnaud (2010), and Yang (2001), based on theories from Zamparelli (2014) and Dayal (2004, 2017). There are two main hypotheses adopted in the literature: a) MC nominals are full DPs, just like all other languages; and b) MC nominals are maximally ClPs, with the classifier performing many of the functions typically associated with D.

3.2 MC Nominal expressions

This section will cover the types of nominal expressions that appear in Mandarin Chinese. These are namely bare nouns, classifier-noun phrases without a numeral, and numeral-classifier-expressions. Each type of phrase come with its own restrictions in terms of where it may occur in a sentence and the types of constructions it can appear within, as well as a set of possible interpretations. The first subsections will focus on providing examples and explaining where different nominal expression occur and their interpretations. This will be followed by a discussion of (in)definiteness and (non)specificity. I will explain what the literature shows about when and where the different nominal expressions can be interpreted as (in)definite/(non)specific. This is relevant not only to form a complete picture of the structure of MC nominals, but also because, as we will see in Chapter 5, many claims have been made about the compatibility of *-men* with (in)definiteness. I will establish for the readers, in this section, that bare nouns can get singular/plural, (in)definite/(non)specific, or generic readings, with some restrictions based on whether they occur preverbally or postverbally; [Cl-N] expressions do have a different distribution from [Numeral-Cl-N] and are not simply cases of numeral deletion/ellision, they may not appear preverbally, unless preceded by the existential *you* and are exclusively indefinite, but may be specific or non-specific; [Num-Cl-N] expressions are also indefinite but they may appear preverbally or postverbally.

3.2.1 Bare NPs

It has already been established in this thesis that Mandarin, just as the other Chinese languages, does not have articles. Bare nouns may appear as arguments and may be interpreted as definite or indefinite, specific or nonspecific, or generic. MC nominals are also not generally inflected for number.

(1) mao xihuan chi laoshu
cat like eat mouse
'Cats like to eat mice'

'The cat(s) like(s) to eat mice'

While the interpretation of definiteness or specificity is largely based on context, there is a structural restriction for indefinite expressions. Preverbal nominal expressions may be interpreted as definite or generic, but not indefinite. Postverbal nominal expressions may receive any interpretation.

(2) Laoshu ai da mi
Mice love big rice
'(The) mice/mouse love(s) rice'

(3) Laoshu chi le mifan
mouse eat ASP rice
'The/*A mouse ate (the/some) rice'

(4) wo mai le shu
I buy ASP book
'I bought a/the/some book(s)'

The ability of bare nouns to denote kinds as well as (in)definite entities has prompted some to argue that there are two distinct structures associated with the two uses, namely that kind-denoting bare nouns are NPs and object-denoting bare nouns are DPs (Yang,

2005). In an upcoming section, I will cover the reasons for adopting the DP hypothesis, but for time being it is sufficient to say that all nominal expressions have a D projection, but we will assume there are covert operators responsible for their generic or kind-denoting interpretations. However, certain postverbal bare nouns are not full DPs, but are incorporated into the noun. They are a restricted class of V-N phrases with often idiomatic meanings (Luo, 2022).

3.2.2 Cl-N and Numeral-Cl-N

In MC, as in other classifier-languages, nouns must appear with a classifier when being counted. There are many different classifiers for different types of nouns. The particular classifier that a noun takes may be based on the shape, size, use, animacy, etc, of the noun(Jiang, 2017b). In addition, nouns that are typically considered mass, such as *water*, appear with a particular type of classifier which measures or portions out the noun. Classifiers that correspond to the grammatical category of the noun are referred to as sortal classifiers and those that measure or parcel the noun are mensural classifiers, also often called measure words.

(5) liang *(zhi) mao
two CL cat
'two cats'

(6) san *(ben) shu
three CL book
'three books'

(7) wu bei shui
five CL.glass water
'five glasses of water'

Classifiers may also appear with nouns without and overt numeral.

(8) zhi gou
CL dog
'a/any dog'

3.2.3 (In)definiteness and (non)specificity in MC

The above discussions relate to the main issue of this thesis because one of the most common features of *-men* is that it is restricted to definite expressions. Consider the following examples.

(9) wo qu zhao haizi
I go find child
'I will go find a/the/some child/children'

(10) wo qu zhao haizi-men
I go find child-MEN
'I will go find the children' (Li, 1999)

While differences in the analyses of *-men* are considerable, one consistent point in the literature is that an N-*men* must be interpreted as definite. This point is often further supported by claims that *-men* is incompatible with existential as well as generic expressions. This has led to a number of analyses that strongly associate *-men* with D, either as an element in D, moving to D, or adjoining DP (Li, 1999; Kurafuji, 2004; Kim and Meng, 2021). However, while it is very true that the majority of attested instance of N-*men* are definite, it is not entirely disallowed in indefinite contexts.

(11) Wang laoshi xiang jian (yi xie) zhengke-men
Wang teacher want meet (one some.CL) politician-MEN
Teacher Wang wants to meet (some) politicians.

(12) zai zhei-ge gongyuan li zong you (yi xie) haizi-men zai wanshua
at this-CL park in always have (one some.CL) child-MEN at play
There are always some children playing in this park.

-*Men*, we see in (12) and (11), according to my consultants, gets an indefinite interpretation in these examples. In addition, it is possible in generic expressions (Jiang, 2017a). Several analyses for N-*men* which I will describe in Chapter 5, craft their structures around the idea that they need to account for the definiteness of N-*men*. However, the claim that N-*men* is exclusively definite is too strong. In the following chapter, I will cover the issues surround classifier structure and the use of N-*men* and in chapter 5 I will provide my analysis which I believe accounts for the possible interpretations of N-*men*.

(In)definite vs (non)specific

One of the most common claims about -*men* is that it is exclusively restricted to definite expressions. I will present a discussion of the distribution and interpretation of -*men*-marked nouns in the upcoming sections, but first will discuss definite versus specific nominal expressions in MC. In the previous sections, I have made reference to MC nominal expressions as carrying definite versus indefinite interpretations. However, some have suggested that MC DP/NPs are not definite at all, but specific (Lyons, 1999; Kim, 2004). This section will briefly discuss the the possible interpretations of Mandarin nominal expressions and their possible positions.

As we have seen before, the challenge is that there are few overt morphological elements indicating whether an expression is definite/indefinite or specific/nonspecific in Mandarin Chinese. Lyons (1999) claims that MC and Korean lack DP configurations, but that notions of indefiniteness and definiteness are present, and 'specific' can only be used for those indefinites whose referents are known by the speaker. He suggests notions of definiteness in MC are not grammatical, but rather semantico-pragmatic notions. More generally, he claims that the pragmatic notion of identifiability may play a role in

all languages, but the grammaticalisation of definiteness is not necessarily found in all languages.Partee (2006) notes that Russian analogues of MC possessives similarly lack the exhaustivity presupposition, which according to her supports Lyons (1999)'s view. Kim (2004) proposes that MC and Korean nominals are 'specific' and not 'definite', in the sense that they do not carry presuppositions of uniqueness and exhaustivity as definite expressions do, but are familiar. Yang (2005) projects a DP for all nominal expressions in MC and suggests a variety of null Ds to account for their different properties.

Specific nominals in MC, as well as Korean, take wide or intermediate scope, which Kim (2004) analyses via choice functions. Since the choice function must be introduced by something, he proposes a null D. Therefore specific nominals are DPs and non-specific ones are NPs. The presence of a demonstrative explicitly marks a definite expression and the presence of a [Num-Cl] marks an indefinite expression. A [Cl-N], with no numeral, may be nonspecific, as claimed by Kim (2004) in (13).

(13) zhi gou
CL dog
'a/any dog'

Nominal expressions which appear before the verb may only be specific or generic, (14). Additionally, only specific nominals may appear preposed in a post-*ba* position, (15).

(14) gou jintian tebie tinghua
dog today very obedient
'The dog(s) was very obedient today'

*'A dog was very obedient today.'

(15) ta ba yi jian fang zu chuqu le
he/she BA one CL room lease out LE

He/She leased out a [certain] room/one of the rooms.'

These facts can be summarised by saying only specific nominals appear in positions which are landing sites for movement. This positional/structural restriction suggests that the difference between a specific and non-specific expression in MC is not simply "semantico-pragmatic".

'One' as a specific indefinite

It is widely accepted that *yi* 'one' + a classifier functions essentially as an indefinite determiner. Cross-linguistically, the numeral 'one' very commonly develops into an indefinite determiner, as in Vietnamese, Turkish, and many others. It is used in contexts that are non-referential, non-identifiable nonspecific, non-identifiable specific, and presentative, (Chen, 2003). When functioning as a true numeral, *yi* is stressed; when functioning as an indefinite determiner it is unstressed and often may be omitted. And as observed in L u 1990, *yi* + classifier, often with *yi* omitted, can introduce a definite referent, that the speaker takes to be non-identifiable to the addressee. Zhang (2019) also argues for a full DP in MC and that a classifier can raise to D to instantiate the definiteness. More importantly here, she argues for a null form of *yi*, called YI_{pro}, which is discourse licensed and is realised in the specifier a Numeral Phrase above the classifier. *Yi*, like other numerals, can get an exactly n reading or an indefinite reading and *yi* can follow specific indefinite marker *mou*. A demonstrative followed by a classifier can also have *yi* between the demonstrative and classifier and even the versions without a pronounced *yi* can only be interpreted as 'one'. Only *yi* 'one' and no other numerals may be omitted, and even when antecedent is a different numeral, the omitted element is always interpreted as 'one', therefore a null form of 'one' is posited rather than a deleted one. In addition, crosslinguistically 'one' has a null form, both bound and free forms, and generally exhibits special morphological properties different from other numerals. Aikhenvald 2000's claim

that some classifiers with demonstratives and without numerals are deictic would require separate deictic forms of each classifier and doesn't explain why such deictic expressions are exclusively singular but both deictic sense and singular meaning are captured by YI_{pro}. She concludes that the numeral must be hosted by a projection higher than ClP because a degree element, such as *da* 'big' that may occur between a numeral and a classifier never scopes over the numeral. Like a phrasal element, a numeral can be modified and can be a subject or predicate and can be the complement of a preposition, therefore she assumes numerals are phrasal in MC and base generated in a specifier position. YI_{pro} is therefore in the specifier of the NumeralP and is a nominal phrase; a subtype of *pro*. And finally, bare Cl-N are consistently interpreted as singular and without YI_{pro} that singularity would come from nowhere. In her analysis YI_{pro} is distinct from the overt *yi* 'one' that can be used as an indefinite, which she calls YI_D and claims it merges in the specifier of DP. YI_D thus c-commands YI_{pro}. YI_D does not bear stress, in contrast to the true numeral 'one', generic arguments do not allow numerals but do allow the indefinite article *yi*, and the numeral can be associated with a focus element while the article cannot, which is why she argues it is its own element, not a moved numeral.

3.2.4 Section summary

In this section, we have been introduced to the typical configurations of a simple nominal expression in Mandarin Chinese. Bare nominals are common and may function as arguments and may be interpreted as definite or indefinite, singular or plural. A classifier must appear between a numeral and a noun, but it is possible for a [Cl-N] to appear without a numeral, with both expressions being interpreted as indefinite, the later as nonspecific. The next section will talk in more depth about the different types of classifiers, the structures proposed for the [(Numeral)-Cl-N] construction, and the distribution of *-men* within such structures.

3.3 Classifier syntax

3.3.1 Types of Classifiers

The element that functions as a classifier can be further categorised into two types: classifier and measure word. Often the difference between the two is described in a fairly intuitive way, additionally there have been a number of attempts to define in a more precise way what the types of classifier are. Chao (1968) described nine kinds of classifiers and Allan (1977) described seven categories of classification. Tai and Wang (1990) as well as Jiang (2017b) describe classifiers as elements that categorise or sort nouns into classes, whereas measure words do not categorise but they name a measure or create a grouping for the noun. The general idea that classifier-elements are not all the same is fairly widespread, but beyond this there is considerable disagreement in the literature on the exxact nature of their difference and how to describe them. One type of classifiers is referred to variously as true classifiers, count classifiers, or sortal classifiers; whereas the other type have been called measure words, massifiers, group classifiers, kind classifiers, or non-sortal classifiers.

(16) a. yi ben shu (Sortal)
one CL book
one book.

b. yi xiang shu (Mensural)
one CL-box book
one box of books (Her and Hsieh, 2010)

I will here be referring to the two types as classifiers and measure words, which I will abbreviate as C and M respectively, as in Her and Hsieh (2010); Her (2012a). The structure of this chapter is as follows: section 2 discusses the ways that have been used to

distinguish the types and the method that I will adopt here; section 3 explains the syntax that I will adopt for classifiers and measure words; section 4 describes when the Mandarin modifying plural *-men* may or may not appear with the two types of classifiers; section 5 describes my analysis of the syntax of modifying plurals in classifier languages, which will be developed in detail in 5.

3.3.2 Distinguishing the types

Tests commonly applied to C/M are their (in)ability to allow *de* or an adjective to appear between the classifier and the noun. These tests, as we will see, do not yield consistent results. The tests that prove to be more reliable are numeral quantification scope, adjectival modification scope, antonym stacking, and classifier doubling, as described in Her and Hsieh (2010); Her (2012a). Generally speaking, C is regarded as a purely functional element, with no lexical content. M, on the other hand, is able to function as a noun in its own right, which may or may not take a classifier in order to count it.

Classifiers and adjectives

One of the ways that we could see differences between types of classifiers is in their acceptability with adjectives. In Mandarin there are relatively few true adjectives that can directly modify a classifier or noun, for example *xiao* "small", *da* "big", *hao* "good". Other modifiers are regarded as reduced relative clauses and require the modification marker *de*. Cheng and Sybesma (1998) claims that only M can be modified by adjectives, and not C, as shown in (17). However, not all Ms can be modified in this way, see (18).

(17) a. yi da zhang zhi
one big CL-sheet paper
one large sheet of paper.

b. *yi da zhi gou

one big CL dog (Cheng and Sybesma, 1999)

(18) yi xiao/da bang shu

one small/big pound book (Her, 2012a)

So, already this test is not enough to distinguish M from C. More importantly, there are counterexamples showing C is compatible with adjectival modification in Tang (2005) and Her and Hsieh (2010), below.

(19) a. yi da ke pingguo

one big CL apple

one big apple.

b. yi da ben shu

one big CL book

one big book

While the test fails to meaningfully separate C from M by the mere presence of an adjective, there are important differences regarding the scope of the modifier, as pointed out in Her and Hsieh (2010) and shown in (20) and (21).

(20) a. yi da xiang pingguo $\neq$ yi xiang da pingguo

one big CL-box apple one CL-box big apple

'one big box of apples' 'one box of big apples'

b. yi da ke pingguo = yi ke da pingguo

one big CL apple one CL big apple

'one big apple' 'one big apple'

In these cases, the adjective preceding C modifies the noun, not the C itself, and produces no difference in meaning from modifying the noun directly. The adjective preceding M doesn't modify the noun at all, it only modifies the M itself. Similarly, the numeral preceding C quantifies the noun, whereas the numeral preceding M quantifies the M, as can be seen in (21), in which multiple C/Ms are stacked.

(21) a. yi xiang shi ke pingguo
one CL-box ten CL apple
'one box of ten apples'

b. yi xiang shi bao pingguo
one CL-box ten CL-pack apple
'one box of ten packs of apples'

(22) a. *yi ge shi ke pingguo
one CL ten CL apple

b. *yi ge shi bao pingguo
one CL ten CL-pack apple (Her and Hsieh, 2010)

And moving back to adjectives, antonymous adjectives are possible with M, but not C. Which is to be expected if the adjective is modifying the M, but would be contradictory preceding C, where the adjectives does not modify C, but the noun.

(23) a. yi da xiang hong/xiao pingguo
one big CL-box red/small apple
'one bax of red/small apples'

b. yi da ke hong/*xiao pingguo

one big CL red/small apple

one big red/*small apple (Her and Hsieh, 2010)

Thus the presence of an adjectival modifier is not an accurate test. However, the ability of a pre-classifier adjective to scope over the noun is only available with C and is blocked by M and instead the adjective only scopes over M itself.

Classifiers and *de*

Another proposed test is the availability of *de* insertion between the classifier and the noun. The modification marker *de* is essentially like a complementiser. It appears at the end of relative and reduced relative clauses.

(24) a. [wo mama zhu de] san wan tang
I mother cook DE three CL:bowl soup
'three bowls of soup which my mother cooked'

b. ??[wo mama zhu de] san wan de tang
I mother cook DE three CL:bowl DE soup (Tang, 2005)

According to Chao (1968); Cheng and Sybesma (1998) and others, *de* is acceptable following M, but not C, as shown in (25) and (26).

(25) a. *ta mai-le san zhi de bi
he buy-LE three CL DE pen
'He bought three pens'

b. ta mai-le san xiang de bi
he buy-LE three box DE pen

'He bought three boxfulls of pens' (Cheng and Sybesma, 1998)

(26) a. ba tou (*de) niu
eight CL-head DE cow
'eight cows'

b. jiu gen (*de) weiba
nine cl DE tail
'nine tails'

c. shi zhang (*de) zhuozi
ten CL DE table
'ten tables' (Cheng and Sybesma, 1998)

Though there are some inconsistencies to this test. The sortal classifier *jian* appears with *de* in (27).

(27) a. san jian fangzi
three CL room
'three rooms' (which may or mat nor be in the same house)

b. san jian de fangzhi
three CL DE room
'a three-room house(s)' (Chao, 1968)

In (28), unlike with adjectives, we see that *de* is also acceptable with standard measurements, like *bang* "pound".

(28) a. san bang (de) rou

three CL-pound DE meat

'three pounds of meat'

b. liang xiang (de) shu

two CL-box DE book

'two boxes of books' (Cheng and Sybesma, 1998)

The unacceptability of *de* with a sortal classifier remains the same whether the noun, (29-a), or the classifier,(29-b), are modified with an adjective. And a mensural classifier remains acceptable regardless of adjectival modification, as shown in (30).

(29) a. *san ge de ren

three CL DE people

b. *san da ge ren

three big CL people (Cheng and Sybesma, 1998)

(30) a. yi qun de ren

one CL-crowd DE people

'a crowd of people'

b. yi da qun ren

one big CL-crowd people

'a big crowd of people' (Cheng and Sybesma, 1998)

However, once again there are numerous counterexamples, found in Tang (2005), Zhang (2009) and others. Below are examples of a C being followed with *de*, and they are just as acceptable as M being followed by *de* . [1]

[1]Some may not be able to accept these sentences. My informants have noted that they require a

(31) a. [liang ben] (-de) shu
two CL DE book
(lit.) 'two books/books that are sorted in accordance with two in number'

b. [san zhi] (-de) bi
three CL DE pen
(lit.) 'three pens/pens that are sorted in accordance with three in number'
(Tang, 2005)

(32) a. ta mai-le (liang bao) [wu bang]-de rou.
he buy-LE two parcel five pound-DE meat
(lit.) 'He bought (two parcels of) meat that were sorted in accordance with five pounds.'

b. rou, ta mai-le (liang bao) [wu bang]-de, bu shi (liang bao) [si bang]-de.
meat he buy-LE two parcel five pound-DE not be two parcel four pound-DE
(lit.) 'Meat, he bought (two parcels of) the kind that was sorted in accordance with five pounds, not four pounds.' (Tang, 2005)

(33) a. (rou,) ta you [wu bang] (?-de) (rou).
meat he have five pound-DE meat

b. (rou,) ta mai-le [wu bang] (-de) (rou).
meat he buy-LE five pound-DE meat

c. (rou,) ta you yi bao [wu bang] *(-de) (rou).
meat he have one box five pound-DE meat
(lit.) 'Meat, he has a box that is sorted with five pounds in weight.'

certain intonation, with emphasis on the classifier. Tang (2005) also mentions that such constructions become more acceptable with larger or more complex numerals.

d. (rou,) ta mai-le yi bao [wu bang] *(-de) (rou).
meat he buy-LE one box five pound-DE meat
(lit.) 'Meat, he bought a box that was sorted in accordance with five pounds in weight.' (Tang, 2005)

The only instance in which Tang (2005) and others accept that *de* is not compatible with a C is specifically the generic classifier *ge* and the person classifier *wei*, as shown in (34).

(34) a. [liang ge] (*-de) ren
two CL DE man
'two men'

b. [san wei] (*-de) laoshi
three CL DE teacher
'three teachers' (Tang, 1993)

In addition, Tang (2005) and Zhang (2009) notes that a [Numeral-C-*de*-N] phrase is more acceptable the higher the number and less acceptable the lower the number. Furthermore, Her and Hsieh (2010) points out that not only large numbers, but also *ban* 'half' makes for a more acceptable *de* inserted phrase, as in (35).

(35) a. ban ke de pingguo
half CL DE apple
'half an apple'

b. *yi ke de pingguo
one CL DE apple (Her, 2012a)

Thus they suggest that the absolute value of the numeral is not the most important factor, but rather its computational complexity. This seems to be born out by the fact that Adj-C-*de* is also more acceptable than C-*de*, even when the numeral is 'one'.

(36) yi da ke de gaolicai
one big CL DE cabbage
'one big cabbage' (Her, 2012a)

(37) yi da ge (de) pinguo
one big CL (DE) apple
'a/one big apple'[2]

Antonym stacking and classifier doubling

Following on from the discussion of adjectival modification is antonym stacking. Consider the following examples.

(38) *yi da ke xiao pingguo
one big C small apple

(39) yi da xiang xiao pingguo
one big M.box small apple
'one big box of small apples' (Her and Hsieh, 2010)

Here the adjectives modifying the C/M and the N are antonyms, which is unacceptable with a C and acceptable with an M. The distinction remains essentially the same in the following as well.

(40) a. yi ke da ke de pingguo

[2]It should be noted that my informants say that even the general classifier *ge*, is conpatible with *de* when a modifier is present suggesting that the more complex the Num-Cl-N phrase is, the more acceptable the presence od *de* becomes

one C big-C-DE apple

'one big apple'

b. *yi ke da xiang de pingguo

one C big-M-DE apple

(41) a. yi xiang da xiang de pingguo

one M.box big M.box-DE apple

'one big box of apples in big boxes'

b. yi xiang da ke de pingguo

one M.box big C-DE apple

a big box of big apples

These examples demonstrate that doubling C/M-N phrases is acceptable for both C and M, as long as the two elements do not conflict pragmatically. However, while an M-C sequence is fine, a C-M sequence is ill-formed.

The types, in summary

This section presented data demonstrating that both C and M are compatible with [Adj-C/M-N]/[C/M-Adj-N] phrases as well as [C/M-*de*-N] phrases, which negates any claims that these environments can be used as a diagnostic test for distinguishing classifier s and measure words. Tests that do clearly and consistently differentiate between C and M are numeral quantification scope, adjectival modification scope, antonym stacking, and classifier doubling. A [Numeral-C-N] or [Adj-C-N] phrase, the numeral or adjective will modify the noun and not the classifier, however a [Numeral-M-N] or [Adj-M-N] where the classifier is an M, the numeral or adjective will modify the classifier. A C/M-N where

each element modified by adjectives which are antonyms of each other are acceptable only in a [Adj-M-Adj-N] phrase. Finally, a phrase with double C/Ms is well-formed with the exception of a [Numeral-C-Adj-M-*de* -N]. All of these can be captured by saying that C allows modification by adjectives, quantification, and numerals to the noun, while M blocks it and instead M is modified itself.

3.3.3 Numeral Classifier Structure

The literature on classifiers makes two claims about the classifier's relationship with the numeral: that the numeral and classifier constitute a single functional head and that the numeral and classifier are distinct functional heads. It should be noted that within the literature on Mandarin Chinese, the latter view is significantly more common, (Pan, 1990; Pan and Hu, 2000; Tang, 1990; Cheng and Sybesma, 1999; Li, 1999). The former occurs most frequently in literature regarding Japanese, (Kawashima and Kitahara, 1993; Muromatsu, 1998, 2003; Kurafuji, 2004), as well as Thai and Vietnamese.

As noted in Simpson (2008), there is often little justification provided for one view or the other. Particularly as numerals and classifiers surface in adjacent positions, it is not immediately apparent how to distinguish whether or not they constitute a single functional head or two. The arguments for a numeral and classifier composing a single functional head are principally that the Numeral-Cl may, in certain languages, appear separate from the noun, and that classifiers often seem appear as clitics on the numeral. Neither argument rules out the possibility that the Numeral head simply selects the ClP as its complement. In this way they would also appear adjacent, and the classifier could phonologically encliticise onto the numeral. It should be noted, that in MC, when there is no overt numeral, the classifier also phonological depends on the demonstrative, if one is present, and no one argues for the demonstrative to be a single functional head with the numeral.

Simpson (2008) goes on to make the following argument in favour of regarding numerals

and classifiers as separate functional heads. First, they are two distinct morphological elements, which one would one would assume project distinct head positions. Secondly, classifiers and numerals perform separate functions. Classifiers are functional elements that individuate or measure the denotation of the noun and the numeral has the distinct function of specifying the number value begin counted. The independent functions of numerals and classifiers may be observed in a number of ways: classifiers can appear without a numeral in Vietnamese, Hmong, and Nung; numerals can appear without a classifier when they are vague in Nung and Burmese; and in Vietnamese the classifier may be omitted when a count noun is not individualised, (42).

(42) nha ba phong
house 3 room
'a three room house' (Simpson, 2008)

Thirdly, the numeral one in Nung and any numeral in Ejagham are not adjacent to the classifier. And lastly, some languages, including MC, allow for certain adjectives to appear between the numeral and classifier, (43).

(43) san xiao zhi mao
3 small CL cat
'three small cats'

3.3.4 Structure of the types

The previous section showed how to distinguish sortal classifiers from non-sortal classifiers from an interpretational/semantic perspective. This section will examine the possible syntactic structures for classifiers. Since my main concern in this thesis is to establish the structure associated with *-men*, it will not be my goal to address all the issues associated with the syntax ans semantics of the classifier-noun phrase. There are three issues to consider, two are which are of principle importance for the purpose of this these. The first

is whether the Num-Cl constitute a single functional head or two. This issue has been, as far as I'm concerned satisfactorily addressed, and will be briefly summarised below. The other point is whether sortal and non-sortal classifiers should be given the same structure or do they each have a distinct syntax. This is the principle issue I will discuss below.

Sortal and non-sortal classifier structure

As we've seen in the preceding sections of this chapter, the elements often lumped together as classifiers fall into two distinct categories: classifiers and measure words. Those regarding C & M as both functional and lexical elements with the same syntactic structure include Li (1999); Tang (2005). The latter accounts for their differences by proposing that C & M have different features, [+CL-N] for classifiers and [+Cl+N] for measure words. Cheng and Sybesma (1998, 1999); Zhang (2009) regard only C as base-generated in CL. M is base-generated under N and moves to CL. Cheng and Sybesma (1998) claim the structure is different, primarily centring around the idea that measure words are generated in N and move to Cl, which allows relativisation, but a classifier generated in Cl doesn't[3]. It is not clear why measure words should allow relativisation and a classifier should not in their analysis. Either way, the intent is to account for classifiers being barred from *de* constructions, but I have discussed above the evidence that this is not the case, which is why I will not adopt that aspect of their structure. Also recall from the previous chapter, *de* serves as a modificational head. When a classifier or measure word appear with *de* rather than immediately preceding the noun, it is no longer a simple quantity expression. Rather the (Numeral)-Cl-*de* are modifying the N head, and are merged in the specifier of the NP. This, of course, results in a different interpretation. A typical (Numeral)-Cl-N expression is counting individuals within the extension of the noun, whereas a modificational (Numeral)-Cl-*de* indicates something more like 'N sorted

[3] Cheng and Sybesma (1998) also strongly argue for the idea that ClPs in Mandarin are essentially equivalent to a DP, in that they are the locus of (in)definiteness. I do not agree with this analysis and the reasons for this are discussed in chapter 4. Here I'll briefly note that, while their observations and data are very interesting, the analysis does not adequately motivate assigning D head functionality to a Cl head, beyond an extreme avoidance of null heads.

by threes' or 'N sorted into boxes', as we saw in some earlier examples.

A significant portion of the literature on the topic of classifiers in Mandarin regards both sortal and non-sortal classifiers as having the same structure, (Bale and Coon, 2014; Cheng and Sybesma, 1999, 2012; Cheng and Massam, 2012; Her and Hsieh, 2010; Her, 2012a; Tang, 2005; Wu and Bodomo, 2009; Peyraube, 1991). Within this analysis, are those that treat the function of individuating in classifier-languages and plural morphology in plural-marking languages to be in complementary distribution and therefore occupying the same syntactic position as each other, but also as Number and Division, (Krifka, 1995; Chierchia, 1998a,b; Borer et al., 2005; Gebhardt, 2011). Based on Rothstein (2009, 2010, 2011)'s analysis of measuring and counting in English, Zhang (2011) claims that MC individual, measuring, and partitive classifiers have distinct structures.

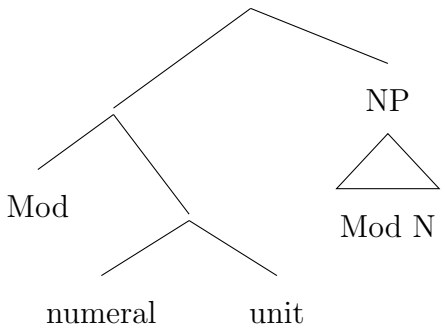
There have been several analyses that claim the numeral and classifier form a constituent, (Krifka et al., 1995; Kawashima and Kitahara, 1993; Bale and Coon, 2014; Kurafuji, 2004) while others claim that the classifier and noun form a constituent, (Gebhardt, 2009, 2011; Borer et al., 2005; Cheng and Sybesma, 2012; Simpson, 2008; Tang, 1990, 2005; Her, 2012a,b; Pan, 1990; Pan and Hu, 2000). The principle argument for claiming the numerals and classifiers form a constituent is that, following Krifka et al. (1995), the difference between a language with a robust classifier system and one with obligatory number marking lies in the differing semantics of the numerals in each type of language. In a classifier language a numeral must combine first with a classifier in order to then modify a noun. And there has been some support for this view argued based on the structure of Japanese (Watanabe, 2006). For those following Chierchia (1998b)'s nominal mapping parameter, the nouns are semantically different between a classifier language and a number-marking language, and therefore a classifier needs to combine first with a noun in order to pick out individuals from the denotation of the noun, which can then combine with a numeral.

Specifically, Zhang (2011) suggests that what she terms individual and individuating classifiers (sortal classifiers) have a left-branching structure; collective; group, and partitive

classifiers (non-sortal classifiers) have a right-branching structure, and kind classifiers have a structure in which no two of the three elements numeral, classifier, and noun form a constituent. I will largely set aside her claim that kind classifiers form their own class and have their own structure, as it is not relevant to my main question of where *-men* occurs and focus on the structure of sortal and non-sortal classifiers.

Zhang (2011) proposes two structures: left-branching and right-branching; which are meant to parallel the difference in English between counting and measuring, as described in Rothstein (2009, 2010) and 2011. But English makes use of classifiers only optionally, and the elements themselves are ordinary nouns. Whereas in MC and other classifier-languages, classifiers are typically required and form not only a lexical class, but are a functional head. As such, most who work on MC and many other classifier-languages regard the classifier projection as part of the nominal spine. She was trying to capture some of the facts that we observed above, namely that modifiers appearing before a sortal classifier are interpreted as modifying the noun, whereas modifiers before a non-sortal classifier modify the classifier. Zhang (2011) hopes to capture these scope differences by suggesting that non-sortal classifiers have a left-branching structure, in which the numeral-classifier form a unit. This allow a modifier to adjoin the phrase and modify only the non-sortal classifier, and optionally a separate modifier could adjoin to the noun, (44).

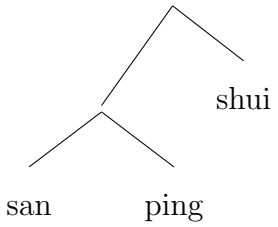
(44)



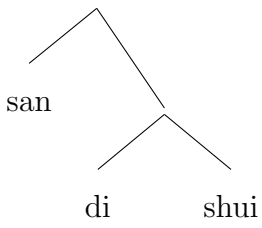
The above structure could also straightforwardly accommodate for instances in which *de* intervenes between the classifier and the noun, which she asserts is only available for non-sortal classifiers. In fact, as we already saw earlier in this chapter, *de* may occur

between a sortal classifier and a noun as well. When *de* is present, the [numeral classifier] phrase is functioning as a modifier of the noun. Sortal classifiers, on the other hand, have a right-branching structure which is similar to what is typically seen in the literature for classifier phrases. In this structure, if a modifier adjoins it scopes only over the noun. Therefore, the structures for non-sortal classifiers and sortal classifiers, respectively, would be the following.

(45) 'three bottles of water'



(46) 'three drops of water'



However, she only provides examples of the type [Adj *de* Numeral CL Adj N] for the non-sortal classifiers but it is entirely possible to have [Numeral Adj CL Adj N], as in (47).

(47) san da he xiao pingguo
three big CL.box small apple
'three big boxes of small apples.'

Not only that, but the phrase [three CL.bottle wine] in MC is ambiguous between an individuating reading and a measuring reading just as it is in English. For this and a

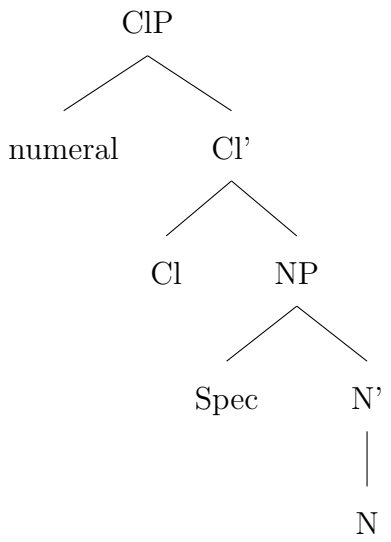
number of other reasons, Landman (2020) argues against Rothstein (2010, 2011)'s distinct structures for classifiers and measure words, claiming both have a "classifier structure" and any differences are due to semantics.

In fact, most of the literature on MC and other classifier-languages, adopts a right-branching structure for all types of classifiers, regardless of other disagreements on the potential features or movement associated with the different types of classifiers, (Tang, 1990; Pan, 1990; Cheng and Sybesma, 2012; Gebhardt, 2011). The principle difference that arises within this view is whether a non-sortal classifier is base-generated in the classifier head, or if it is generated in a nominal head and moves to CL. Tang (2005) argues for a feature based analysis of sortal and non-sortal classifiers. In her system, classifiers have the feature [±sortal] to differential sortal and non-sortal classifiers. In addition, they have the features [±N] and [±Cl]. Others, including Cheng and Sybesma (1999, 2012) claim that non-sortal classifiers, which can themselves often function as nouns, are nouns that move to classifier position. One support for this analysis is that, when such morphemes are functioning as nouns, they often appear without a classifier and appear to combine directly with the numeral.

Given that classifiers are obligatory functional elements within the nominal expression of classifier-languages, that *de* is available for all types of classifiers and simply indicates the the classifier phrase is a reduced RC modifying the noun and is not indicative of the position that classifiers typically occupy, and that noun-like non-sortal classifiers can still function as nouns, I will adopt a structure in which all classifiers are in a right-branching structure and non-sortal classifiers are generated in N and move to CL. I also follow Cheng and Sybesma (1998) in taking the numeral to be in the specifier of the classifier phrase[4].

[4]Contra Cheng and Sybesma (1998) the structure [NC [ClP noun][ClP [numeral][Cl' [CL][NP pro]]]] in unnecessary. I will assume NP moves to focus position

(48)



3.3.5 Classifiers and plural markers together

The inability of *-men* to appear with a classifier if often cited as one of its core characteristics. I will show that this is not the case, but that there are restrictions in terms of the type of classifier. In order to demonstrate this, we must first determine what the different types of classifiers are and how to distinguish them.

Classifiers exist in a variety of languages all over the world and include numeral classifiers, verb classifiers, and more. This chapter is concerned with numeral classifiers. English also has words that are very similar in meaning and use as some Mandarin classifiers. For example: *cup* in "a cup of water" is performing largely the same role as *bei* in "yi bei shui". However, English is not a classifier language and languages like Mandarin, Thai, Korean, Dyirbal, Bantu, Swahili, Navajo, and Yucatec, to name only a few, are. According to Allan (1977), what distinguishes a classifier language from a non-classifier language is that they (a) have classifiers, (b) belong to one of four types: (i) numeral classifier languages, (ii) concordial classifier languages, (iii) predicate classifier languages, and (iv) intra-locative classifier languages, and (c) they classify nouns according to some inherent characteristics. Subsequently the general understanding of the difference between classifier and non-classifier languages has come to be that in classifier languages all their nouns behave as mass nouns whereas languages like English have mostly count nouns

(Chierchia, 1998a,b). Others later described Mandarin nouns as having general number, as in (Rullmann and You, 2003), which is the view I have adopted here and will discuss further in Chapter 4.

The purpose of a classifier is to individuate or sort the noun into either atomic or plural individuals. When counting is unnecessary, the noun can be left bare and get a plural, singular, or number neutral reading. In Mandarin, Wu, and Min a [Cl-N] is a non-specific indefinite expression, while in Cantonese, Vietnamese, Hmong, and Nung, the same phrase is a definite expression(Cheng and Sybesma, 2005; Cheng et al., 2017; Dékány, 2022; Simpson, 2005). A [Num-Cl-N] is always interpreted as indefinite and may be specific or non-specific. Issues regarding (non)specificity/(in)definiteness as well as the structure of the Mandarin DP/ClP are be addressed in detail in Chapter 4. Returning to individuation, languages are generally split into plural marking languages and classifier languages, as plural markers also function to individuate nouns into countable units visible to the syntax. In plural marking languages, such as English, the majority of nouns are count nouns, meaning they are marked for number and can then combine with numerals, as can be seen in (49). In classifier languages, a classifier is required to combine with the noun in order for it to be counted, as in (50) and (51).

(49) a. one person, three people — English

b. one pen, three pens

c. one book, three books

(50) a. san ge ren — Mandarin
three CL people
'three persons'

b. san zhi bi

three CL pen

'three pens'

c. san ben shu

three CL book

'three books' (Cheng and Sybesma, 1998)

(51) a. *san ren

three person

b. *san bi

three pen

c. *san shu

three book

A classifier that does not correspond to the category of the noun may not appear with that noun. Below, (52), students may be counted as individuals, or in this case by classroom groups. However, using the classroom classifier for water is not possible.

(52) a. wu ban xuesheng Mandarin

five classroom student

(lit.) 'five classrooms of students'

b. ?*wu ban shui

five classroom water (Tang, 2005)

(53) a. san ping jiu

three CL-bottle liquor

'three bottles of liquor'

b. san ba mi
three CL-handful rice
'three handfuls of rice'

c. san wan tang
three CL-bowl soup
'three bowls of soup' (Cheng and Sybesma, 1998)

This does not mean that there is no flexibility in terms of the variety of classifiers that a noun can accept. (54) demonstrates that various classifiers are able to occur with a single noun, each yielding a different meaning. Aside from *ben*; the classifier for volumes, books, etc; the other classifiers name other units by which groups or collections of books may be counted. Wu and Bodomo (2009) uses the example below to demonstrate that classifiers do have semantic content.

(54) yi ben shu/ yi bao shu/ yi luo shu/ yi xiang shu// one CL:volume book/ one CL:bag book/ one CL:pile book/ one CL:box book// a book/ a bag of books/ a pile of books/ a box of books (Yu, 1957)

Classifier languages have been traditionally thought to lack plural morphology, which was taken to be a consequence of their use of classifiers (Krifka, 1995; Chierchia, 1998b; Borer et al., 2005). Languages require a means to individuate nouns in order to count them. Number-marking languages accomplish this via their plural markers and classifier-languages accomplish this via their classifiers. Depending on ones view of the typology of nouns, either mass noun do not combine with plurals because they have an inherent plurality, or all nouns are mass and plural markers and classifiers are performing essentially the same role and therefore do not co-occur. However, it has been observed many times,

including in chapter 2 of this thesis. The appearance of these apparent plural markers led to various proposals that CL and Num both exist as functional heads in classifier languages. Under these analyses, Num is filled with a [±plural] feature, regardless of the presence of a classifier, but an overt plural marker is only possible when CL is empty. MC is often claimed to not allow the co-occurrence of *-men* and a classifier. This is explained not by both being a Div head, but rather through movement. Li (1999) claims that definite nouns must move to D. In that process they move through CL to Num, where they acquire *-men*, and then move to D. This process is blocked when CL is filled. As all *-men*-marked nouns are definite and thus would trigger movement, it falls out of this derivation that *-men* and classifiers don't occur together. This view is continued by Niu (2015). Yang (2005) claims that *-men* is realised under *n* and and that the reason is cannot occur with a classifier is due to a semantic type mismatch. However, Iljic (1994, 2005) and others have noted that these accounts aren't sufficient, as classifiers and *-men* can occur together, as we can see in the examples below.

(55) ni-men si wei taitai xiaojie-men
you-MEN four CL lady young lady-MEN
you four, ladies and young ladies — Iljic (1994) quoting She (1979)

(56) zhe qun haizi-men
this MW.group child-MEN
this group of children — (Yu, 1957)

(57) Feng Dagou he yi qun xiao haizi-men...
Feng Dagou and one MW.group little child-MEN
Feng Dagou and the little children (in a group) — (Xing, 1960, 1965)

Above, (55) involves a *-men*-marked pronoun preceding a numeral-classifier. This is not a

problem for previous analyses as the two DP/ClPs are appositive phrases, following Yang (2001). Examples (56) and (57), however, pose a problem for the oft cited prohibition of a numeral-classifier expression preceding a *-men*-marked noun. We can see in (58-a,b) that a numeral-classifier as well as a numeral-adjective-classifier can co-occur with an N-*men*. However, (58-c,d) shows that *de* may not occur between the classifier and N-*men*.

(58) a. Liu laoshi he yi qun haizi-men....
Liu teacher and one MW.group child-MEN
Teacher Liu and a group of children...

b. Liu laoshi he yi da qun haizi-men ...
Liu teacher and one big MW.group child-MEN
Teacher Liu and a big group of children...

c. *Liu laoshi he yi qun de haizi-men...
Liu teacher and one MW.group DE child-MEN
Teacher Liu and a group of children...

d. ??Liu laoshi he yi da qun de haizi-men...
Liu teacher and one big MW.group DE child-MEN
Teacher Liu and a big group of children...

3.4 DP versus ClP

There are two main schools of thought in regards to Mandarin Chinese nominal structure. One maintains that, because there are no articles in MC, there is no need to posit a D projection and in fact the classifier head performs many of the functions associated with D, therefore the maximal projection of MC nouns is a classifier phrase, ClP. The other is

that, while the D head will typically remain phonologically empty, there is always a full DP projected by the nominal. In this section, I will examine the main arguments for each, and describe which structure I will adopt for this thesis and why. In MC, there are no articles and no regular number marking, though there are determiners. This has led some to propose that MC nominals do not necessarily project a DP. Li (1999); Huang et al. (2009); Wu (1999) and others believe Chinese always has a full DP, even when nouns appear bare. Cheng and Sybesma (1998, 1999), believe that MC nominal expressions may be a DP or ClP. Specifically that indefinite expressions are maximally classifier phrases, and only definite expressions are DPs. As discussed above, Yang (2005) claims that concept-denoting bare nouns have a maximal projection of NP, while object-denoting bare nouns have a DP; both are of type $\langle e \rangle$ and can be used as arguments. Only a full DP also has Num and Cl projections in Yang's view.

3.4.1 ClP hypothesis

An influential proposal in regards to MC nominal expression structure, is that of Cheng and Sybesma (1999). They claim that in MC, Cl performs some of the same functions as D, and thus MC nominal expressions are ClPs, not DPs.

As has been mentioned earlier, Chinese languages allow bare nouns to appear as arguments and has a rich classifier system. The typical view of MC nouns is that they are all mass, whereas nouns in plural-marking languages are, for the most part, count (Chierchia, 1998b). However, Cheng and Sybesma (1999) note that certain types of classifiers combine with conceptually count nouns, while a different type combines with conceptually mass nouns in MC, (59) and (60). Typically the type that combines with count nouns have no lexical content and serve a purely functional role. The type that combines with mass nouns has lexical content naming the unit of division. Here, (60), a classifier meaning 'glass' is used, but 'jug' or 'bucket' could be used to partition 'water' into whichever units are relevant to the context, as water has no "natural units".

(59) san zhi mao
three CL cat
'three cats'

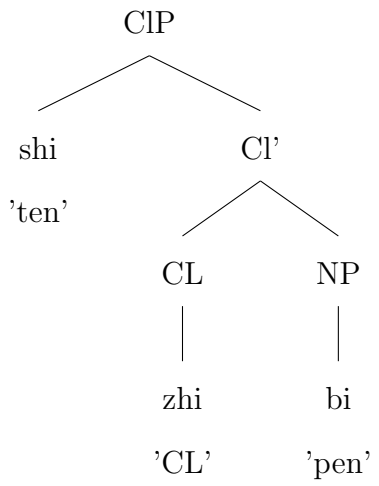
(60) san bei shui
three CL.glass water
'three glasses of water'

For this reason, they propose that the mass/count distinction exists in MC and that, while it is motivated by a property of the noun, it is morphologically reflected not at the noun-level, as in English, but at the classifier-level. They divide classifiers into two types: so-called massifiers (short for mass-classifiers), which create a unit of measurement, and count-classifiers [5], which name a natural semantic partitioning associated with the noun. [6] They argue that numerals require some syntactic marker of countability in order to combine with nouns and this function is performed by number morphology in plural-marking language s, but is performed by count-classifiers in MC, and other classifier-languages. Additionally, count-classifiers perform the individuating and singularising function, or deictic function, typically associated with D in plural-marking languages. For their analysis, Cl converting predicates into arguments and generating definite interpretation. Based on this, they propose that MC nominal expressions are ClPs, rather than DPs, (61).

[5] A number of other terms are used in the literature to refer to different types or classes of classifiers. These are covered in more detail in upcoming sections of this chapter. What C&S call massifiers, I will refer to as non-sortal classifiers, when the distinction is relevant.

[6] It should be noted that massifiers are not restricted to mass nouns. They can combine with count nouns when measuring or forming groups, rather than counting the individual "natural units" of the noun. Count-classifiers though are restricted to count nouns (Cheng and Sybesma, 1999).

(61)



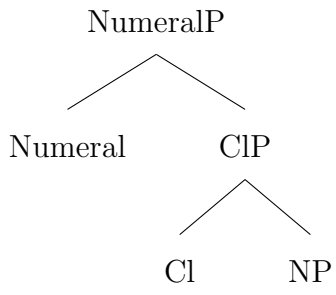
As was discussed earlier in this chapter, not only Cl-N expressions may serve as arguments, but bare nouns as well. According to Cheng and Sybesma (1999) definite bare nouns are also ClPs, not NPs. In order to appear in subject position, a definite bare noun undergoes N-to-Cl movement, following Longobardi (1994). And, following Chierchia (1998b), they propose that N-to-Cl movement is necessary because when an N moves to Cl an iota operator is triggered and thus an NP of type $\langle e, t\rangle$ can be converted to an individual of type $\langle e\rangle$; in this way the function of Cl overlaps with the function of D. Bare nouns that receive a generic interpretation also move to Cl, but Cheng and Sybesma (1999) assume, following Chierchia (1998b), that the 'down' function ($\cap$ operator) applies to shift the predicate to a kind. Indefinite bare nouns would still project a classifier phrase, however no movement is triggered as there is a null element in the classifier head, at last according to a summary in Liao and Wang (2011), but in my readings Cheng and Sybesma (1999) actually state that bare indefinite nouns have an empty numeral. Therefore, bare NPs are not inherent arguments, as Chierchia would have it, but predicates of type ¡e, t¿. This proposal has been critiqued for providing no way to derive the plural reading of bare nouns (Niu, 2015). The claim is that Cl is a singulariser and with no NumeralP there is no way for Number to be added to the ClP. While this is a problem, Niu (2015)'s critique is actually not as strong as it could be. Even assuming, unlike Cheng and Sybesma (1999), that nouns contain plural and singular individuals, once the classifier takes it as a complement, it would apply some kind of restriction to individuals. Their null Cl would

then require two different null classifiers, one selecting singular and one plural individuals. There is no structural difference between bare nouns getting an exclusively singular or exclusively plural interpretation. It begins to seem there are not real advantages to the maximal ClP proposal.

Indefinite expressions may be bare plurals as well, or [Cl-N] phrases. Both are prohibited from appearing as the subject or topic. Cheng and Sybesma (1999) proposes that both types of indefinite expressions are NumeralPs with an empty Numeral, see (62). Unlike the definite and generic ClPs, there is no ι operator and no $\cap$ operator converting the ClP to type $\langle e \rangle$, so the ClP can combine with number to generate plural indefinite readings. However, this appears to be a problem because according to everything else they said, the classifier is performing the functions of a definite determiner, meaning in the definite readings they must be assuming that the iota or up operator come part and parcel with the individuating function of the classifier. The fact that they need to make this claim, given that the evidence clearly allows for indefinite expressions with overt classifiers, but no numeral, as well as indefinite bare nouns, demonstrates the need for another projection above the noun with an iota or generic operator; why not D?.

The next section will cover the DP hypothesis, which is the view adopted by this thesis. However, well will also see that there is a case to be made that, while there generally is a full DP, there are specific structures which may be a ClP, not because the classifier is performing the functions of a determiner, but because a full DP is not required in object position.

(62)



3.4.2 DP hypothesis

One motivation behind claiming that Mandarin Chinese nominal expressions project a determiner phrase is to hold to the universal DP analysis of Abney (1987) and Longobardi (1994) (see also Borer (2005); Li (1998, 1999); Liao and Vergnaud (2010) and Liao and Wang (2011). Just as non-classifier languages with overt determiners have a DP, so too do classifier languages without determiners. Within MC, the evidence to support this claim is based on the interpretation and distribution of two types of number expressions, as well as multiple-classifier constructions

Beginning with the number expressions, there are two types, those that are referential versus quantity expressions. Even though there are no overt articles, indefinite expressions are only permitted in certain positions. MC indefinite expressions are not permitted in subject or topic positions, (63), except in the case of existential expressions, with the existential marker *you* preceding the nominal, (64).

(63) *san ge xuesheng, wo zhidao zai xuexiao shoushang le
three CL student, I know at school hurt LE

(64) you san ge xuesheng zai xuexiao shoushang le
have three CL student at school hurt LE
'There are three students that were hurt at school.'

They are also acceptable in the specific kind of topic-comment constructions which involve a comment on the quantity, as in (65). For this reason, Li (1998) distinguishes between expressions with a quantity interpretations and a non-quantity indefinite individual-denoting interpretation. Quantity-denoting indefinites may appear as subjects or topic, but non-quantity individual-denoting indefinites may not.

(65) san ge xuesheng bu gou
three CL student not enough
'Three students is not enough'

She goes on to propose that quantity indefinites are maximally NumPs, while non-quantity indefinites as DPs with a null D. It is the presence of the D projection which allows non-quantity expressions to denote individuals. Following Longobardi (1994), she claims that this accounts for the distributional difference between theses phrases. A null D needs to be properly governed and the MC topic and subject positions have no lexical governor, so we would not expect an indefinite expression to be possible there. The NumP of quantity expressions is not a true indefinite, as it has no D position and it is the determiner head which is the locus of (in)definiteness. This also accounts for the observation that non-quantity indefinite expressions may appear in existential expressions, because the existential marker, *you*, can only range over individuals. The same can also be seen with the quantifier *dou* 'all', in (66).

(66) san ge xuesheng dou lai zher le
three CL student all come here LE
'[Each of the] three students all came here.'

Moreover, quantity denoting expressions cannot bind an anaphor while non-quantity referential indefinites, as well as *wh*-elements, can (Huang et al., 2009). For these reasons, it is claimed that MC has full DPs for both indefinite and definite referential expressions and quantity expressions are NumPs. This would consequently support the assumption that D is what converts a predicative N into a referential expression, even when there is no overt element in D. It is also true that NumP-type number expressions can also occur in argument position in MC, just not in subject/topic position. According to Huang et al. (2009), it may be that MC differs from English in the types of phrases that can function as arguments. As a consequence of this analysis of MC nominal expressions as

DPs, Li (1998, 1999); Huang et al. (2009) claim that all expressions related to reference or definiteness in MC occur in D, which includes demonstratives, pronouns, proper names, and definite bare nouns[7].

3.5 Chapter summary

In this chapter, I have introduced the function and behaviour of classifiers in MC. I've discussed the various methods for distinguishing the types of classifiers. I have also provided evidence to show that *-men* is compatible with certain some classifiers in some contexts, contrary to the claim that it is completely incompatible with any and all classifiers.

I illustrated the reasoning some have for treating measure words and classifiers as distinct elements performing a similar, but not identical, function. I explain some of the ways the distinction has been formalised and show that ultimately the structure of either ClP is the same.

[7]This has consequences for their analysis of *-men*, as any element which *-men* attaches to is typically described as definite and would therefore have to be located in D. This will be addressed in Chapter 5, on the properties and of *-men*.

Chapter 4

Full Syntactic Structure of MC Nominal Expressions

Here, I provide a brief overview of nominal modification, including adjectival modification, possession, and relative clauses in Mandarin. I begin by outlining the current thinking on adjectival modification, in general, before turning to a discussion of the behaviour of adjectival modifiers and of their current analyses. I proceed to an overview of the current work on possessive constructions and how possession is realised in MC. This is followed by an overview of MC relative clauses and the status and structure of the modifying element, *de* . Each of these topics could be, and many cases have been, the subject of entire theses in their own right. My purpose here is to provide a clear but focused background for the upcoming description of *-men* and its distribution.

4.1 *De* constructions

The morpheme *de* appears between adjectives and nouns, possessor and possessee, and between a relative clause and noun, as in (1).

(1) a. honghong de pingguo
red.red DE apple
'red apple(s)'

b. Lulu de linju
Lulu DE neighbour
'Lulu's neighbour'

c. zuotian lai de jiaoshou
yesterday come DE professor
'the professor that came yesterday' (Zhang, 2010)

The particle *de* is a phonologically weak element which is a bound form, and some consider it an enclitic (Huang, 1989). Traditionally, *de* has been, and by many continues to be, considered basically the same particle whether is serves as a possessive marker, an adjectival marker, or part of a relative clause. Li and Thompson (1981) refers to *de* as an associative marker, since it links two elements with some kind of semantic relationship to each other. Following from that, in Zhang (2010) also considers *de* an associative marker and the modified element (of an adjective), relational noun (of a possessive phrase), and the head noun (of a relative clause) in *de*-constructions is the semantic "kernel" of the entire complex nominal construction; the non-kernel element functions as a major constituent of the kernel element. Others differentiate it into types performing separate functions (Yang, 2005). It has been regarded as a part of the modifier phrase or as the head of the entire modifier-modifiee complex, as in (2).

(2) [YP [ModP [Mod *de*][XP modifier]][YP modified element]]

There is disagreement as to the constituency relations of the elements within a *de*-construction. For many *de* and the element to its left are taken to form a constituent

(Cheng, 1986; Tang, 1990; Ning, 1993; Rubin, 2002; Aoun and Li, 2003). Cheng (1986) treats *de* as a complementiser and Tang (1990) as a functional category, in both cases that it takes the modifier/modifying element as its complement and surfaces to the right of that element. For Rubin (2002), *de* is the head of a a ModP adjunct of the modified element, which takes the modifier as its complement.

In comparison, Zhang (1999, 2008a, 2010); Simpson (2002, 2003); den Dikken (2006) analyse *de* as taking the modified element, or phrase containing the modified element, as its complement (Zhang, 1999, 2008a, 2010; Simpson, 2002, 2003; den Dikken, 2006; Dong and Zhong, 2022). She claims there are two different kinds of bound *de*s, following Tang (1990) based on the observation that both "kernel-first" and "kernel-final" constructions are possible, but they have different bound forms. For her, *de* is similar to coordinators in that they both occur with two syntactic constituents, and she proposes the following structures, (3).

(3) a. [YP [XP [non-kernel element][*de*]][YP kernel element]]

b. [YP [XP non-kernel element][Y'$_2$ [Y$_2$ *de*][YP$_1$ kernel element]]]

4.1.1 Possessives

The particle *de* is required to form a possessive phrase in Mandarin [1]. It takes the form of an initial possessor, followed by *de*, followed by either a bare noun, a numeral and classifier, [Numeral + Cl + N], or by a demonstrative, [Dem + (Numeral) + CL + N]. Consider the following examples, from Yang (2005).

(4) Zhangsan de maoxianyi
Zhangsan DE sweater
'Zhangsan's sweater(s)'

[1] It has been noted extensively in the literature that when the possessor is a personal pronoun and the possessee is a relational noun, such as *mother, father*, and *grandmother*, then the pronunciation of *de* is optional Chao (1968); Li and Thompson (1981); Tang (1990)

(5) Zhangsan de san jian maoxianyi
Zhangsan DE three CL sweater
'Zhangsan's three sweaters'

(6) Zhangsan de na (san) jian maoxianyi
Zhangsan DE that (three) CL sweater
'lit. Zhangsan's those (three) sweaters'[2]

The general structure of Mandarin possessive phrases is XP_1 *de* XP_2. The above examples show a possessor attaching 'high', that is before the demonstrative, numeral, classifier, and/or noun being possessed. Yang goes on to note that a possessor can also attach 'low', intervening between the classifier and noun, as in the following examples.

(7) you (san) jian [Zhangsan de] maoxianyi zai jiaoshi li
have (three) CL Zhangsan DE sweater at classroom in
'There is(are) one(three) of Zhangsan's sweaters in the classroom.'

(8) na (san) jian [Zhangsan de] maoxianyi hen piaoliang
that (three) CL Zhangsan DE sweater very pretty
'That(those) (three) sweater(s) of Zhangsan's is(are) very pretty.'

There is a difference of interpretation between "high" or "low possessor phrases, with the former behaving more like a referential or specific expressions and the latter like an indefinite expression. This is supported by the observation that nominals with "high" possessor phrases can appear in subject position and do not appear in existential constructions and the reverse is true for nominals with "low" possessor phrases (Huang, 1982; Tang, 1990; Yang, 2005). In addition, Tang (1990) notes that "low" possessors, like (8) and (7), carry a presupposition that Zhangsan has has more books, what she calls a partitive reading. Earlier, we saw that XP_2, the possessee, can be bare, a classifier-noun, or an demonstrative. XP_1 can be a proper name, a bare noun, a indefinite DP, or an definite DP, (9).

[2]This has only the literal translation because the English translation *Zhangsan's three sweater* carries a presupposition that Zhangsan has exactly three sweaters, which is the Mandarin version does not share (Yang, 2005; Partee, 2006).

(9) Zhangsan de maoxianyi zai jiaoshi li
Zhangsan DE sweater at classroom in.
'Zhangsan's sweater is in the classroom.'

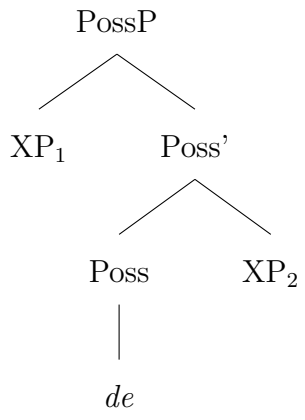
(10) mao de pimao hen ruan
cat DE fur very soft
'Cat's fur is very soft.'

(11) you san ge xuesheng de shu zai zhuozi shang
have three CL student DE book at table on
'Three student's books are on the table '

(12) na ge xuesheng de toufa hen chang
that CL student DE hair very long
'That student's hair is very long.'

Yang (2005) makes a distinction between possessive marker *de* from the the one that appears with adjectives and relative clauses. She labels the former DE_{POSS} and the latter DE_{MOD}. For DE_{POSS}, she proposes the following structure (13)

(13)



This is in contrast to the proposal for English possessive constructions by Barker (1995),

in which the Poss head forms a constituent with the possessor and the PossP is merged in the specifier of the possessee DP. Yang (2005) argues, supported by (Partee, 2004) and her analysis of argument-type and predicate-type possessives in Russian, that Mandarin possessive phrases are predicate-type. She assumes that Mandarin demonstratives undergo QR, in those cases where the demonstrative appears before the PossP.

4.1.2 Relative Clauses

Relative clauses in MC, as in other languages, are CPs and this thesis will assume the *de* is in the C head across all the uses of *de*. This will be described below, following a note on alternative analyses.

De as a linker (den Dikken, 2006) or a subordinator (Simpson, 2002)

A short note here a couple other analyses, which propose two different structures for MC *de* -constructions, but that are both in line with Kayne (1994). den Dikken and Singhapreecha (2004); den Dikken (2006) analyses *de* in terms of DP-internal Predicate inversion. He hypothesises that subject-predicate relationships are projected as a small clause. The AP or relative clause raises to the specifier of a focus phrase above the small clause (and the noun). The "linker", between the now raised AP predicate or RC and the subject of the small clause in F is *de* , (14).

(14) a. wo mai de shu
I buy DE book
'the book I bought'

b. [DP[FP [RC wo mai]$_i$ [F *de*][SC [NP shu][t_i]]]]

This analysis applies across all uses of *de* , den Dikken claims, as well as similar constructions in English, French and Thai. In this way, *de* serves the same purpose in the nominal

domain as a copula serves in the verbal domain.

According to Simpson (2001, 2002, 2003), the particle *de* should not be thought of as a relativiser at all, but as a subordinator. As we've seen above, *de* is variously referred to as a relativiser, as genitive-case marker, or the more general, modifying particle. Simpson (2002) claims that *de* is a determiner and appears to the right of the subordinate clause as a result of leftward movement to the specifier of DP in order to support *de* as an enclitic. He observes that *de* appears between the relative clause and the head noun. This means that *de* does not occur adjacent to the verb and thus cannot be analysed as an inflectional verbal suffix and therefore the only possible analysis, in light of antisymmetry, is that *de* is in D. He goes on to say that though *de* lacks the typical features associated with elements in D (i.e. definiteness), and can co-occur with demonstratives, as well as appear more than once inside a single complex NP/DP, when viewed though a more cross-linguistic lens, these facts are not true counterexamples to *de*'s determiner-hood. Multiple languages allow multiple determiners to surface within one DP, allow determiners to co-occur with proper names, or use an ordinarily definite determiner in contexts in which it does not receive definite interpretation [3].

(15) a. [wo zuo-tian mai t_i]$_j$ de nei ben [shu$_i$ [t_j]]

b. [wo]$_i$ de t_i nei ben shu

He claims that *de* never appears in the initial position of a DP is because *de* is an enclitic, similar in that way to the Romanian definite determiner *-ul*, which also triggers raising. In those instances where a demonstrative-classifier or numeral-classifier appears before the relative clause, those quantifiers are occupying a Q or SpecQ position above the DP. As for the function of *de*, it only appears when there is some modifying element present, and therefore the primary function of *de* may be the introduction of a predication relation. I would suggest that multiple CPs can also appear within a single complex nominal and

[3] Hebrew and Greek have determiners which surface on both the head noun and adjective. Italian and German, determiners to occur with proper names. English often utilises the definite determiner *the* in generic expressions (Simpson, 2002)

that if positing that an element bearing little to no resemblance to the functions typically performed by elements in D requires stronger motivation.

De as a complementizer

The previous portions of this section have shown that there are a variety of proposed structures for *de*. Taking *de* as the head of a complementiser phrase, which would be the most similar to the structure of relative clauses cross-linguistically, is the view advocated by Cheng (1986); Cheng and Sybesma (1998, 1999, 2005); Hsiao (2003); Pan and Paul (2018), and Wen (2020), as well as this thesis. The following examples are from Hsiao (2003)'s processing experiment. The structure takes *de* to be in the C head and the specifier of CP to be an empty operator.

RCs with gaps in the lower object position

(16) laotaitai yaoqiu nuhai chu chao t_i de nanhai$_i$ hen keai
old-lady ask girl go look-for DE boy very cute
'The boy who the old lady asked the girl to look for is very cute.'

RCs with resumptive pronouns in the lower object position

(17) laotaitai yaoqiu nuhai chu chao ta$_i$ de nanhai$_i$ hen keai
old-lady ask girl go look-for him DE boy very cute
'The boy who the old lady asked the girl to look for is very cute.'

RCs with gaps in the higher object position

(18) laotaitai yaoqiu t_i chu chao nuhai de nanhai$_i$ hen keai
old-lady ask go look-for girl DE boy very cute

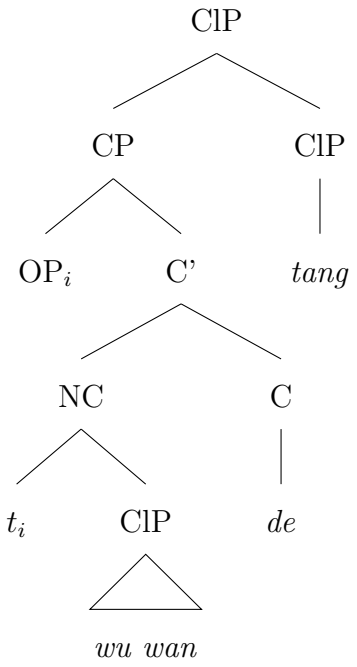
'The boy who the old lady asked to go look for the girl is very cute.'

RCs with resumptive pronouns in the higher object position

(19) laotaitai yaoqiu ta$_i$ chu chao nuhai de nanhai$_i$ hen keai
old-lady ask him go look-for girl DE boy very cute
'The boy who the old lady asked to go look for the girl is very cute.'

The structures for the above sentences, while more complex, are essentially the same as that of Cheng and Sybesma (1998, 2005), below, for a modificational classifier phrase.

(20)



And the same structure is seen again in Wen (2020), based on Ning (1993). A null operator moves from a direct object position to the specifier position of the CP.

(21) [CP Op$_i$ [C' [TP Lisi xihaun t_i] [C de]] shu$_i$]
Lisi like DE book

'the book that Lisi likes'

In this way, relative clauses and adjectival clauses modifying a nominal occupy the same type of position as adverbial phrases modifying a verbal projection, that of an adjunct (Pan and Paul, 2018). This is the structure assumed in this thesis.

4.1.3 MC adjectival modification

Adjectives in Mandarin were at one time considered to actually be verbs owing to the fact that they can be used as a predicate without the need of a copula. However, there are robust reasons for considering them to be a class unto themselves. To begin with, from Huang et al. (2009), some MC adjectives are transitive; the object of the adjective is introduced by the *dui*. The verbal form of *heshi* in (22) is *shihe* in (23), and as we can see, the verb does not require the use of *dui*.

(22) zhe-ge gongzuo dui ni hen heshi
this-CL job DUI you very suitable
'This job is suitable for you'

(23) zhe-ge gongzuo hen shihe ni
this-CL job very suit you
'This job suits you [well]'

Not only do verbs and adjectives differ in the presence of *dui*, but also in word order. Verbal objects in MC always appear directly to the right of the verb. In a *dui* construction, the object follows *dui* and precedes the adjective. Mandarin adjectives can also not be considered nouns, as evidenced by the fact that a nominal predicate typically requires a copula, while an adjectival predicate is completely incompatible with a copula. For my purposes, this is sufficient justification for adjectives as a word class in MC. More

important for the upcoming description for *-men* are the structures associated with different types of adjectives.

Adjectival modification with and without *de*

Mandarin adjectives always precede the noun. What varies is the presence or absence of *de* , which can affect how the adjective modifies the noun. Some adjectives require *de* , while others don't, and many may appear with or without *de* .

(24) yi tiao hong qunzi
one CL red dress
'a red dress'

(25) yi tiao piaoliang de qunzi
one CL beautiful DE dress
'a beautiful dress'

(26) yi ge congming (de) ren
one CL intelligent (DE) person
'an intelligent person' (Niu, 2015)

The *de* and *de*-less modification has been described as roughly analogous to indirect and direct modification Sproat and Shih (1988, 1991) propose that for direct modification the adjective and noun form a nominal compound, while for indirect modification the adjective is part of a reduced relative clause. Part of the reason this analysis is appealing, is the the element *de* performs more than one function in MC. It appears between an adjective and a noun, it appears between a possessor and possessee, and it appears between a relative clause and its head noun. In addition, they claim that *de* -modification may only contain predicative adjectives. On the contrary, Paul (2005, 2010) note that some non-predicative adjectives can appear with *de* , that a great many adjectives are equally acceptable with and without *de* , and that adjectives alone cannot function as predicates in MC anyway.

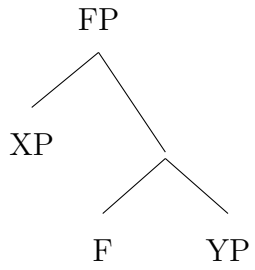
It is true that predicative adjectives do not require a copula; what they do require are degree adverbs, seen here in (27).

(27) a. *zhe ge ren congming [4]
this CL person intelligent

b. zhe ge ren hen congming
this CL person very intelligent
'This person is very intelligent.' (Paul, 2005)

Following Paul (2010); Cinque (2010), Yang (2005) analyses *de*-modification as *de* being a functional head within the nominal projection, taking an NP/DP complement and AP specifier.

(28)



On the other hand, Niu (2015) points out that A-*de* does not have to appear directly preceding the noun, but can also appear preceding D, (29). This is a problem for Yang's view, as there is no way for a head and its specifier to move while leaving its complement behind.

(29) a. na yi ben xin de shu
that one CL new DE book
'that new book'

[4] Niu (2015) notes that this sentence is acceptable in a contrastive context, in which case the demonstrative *zhe* is stressed

b. xin de na yi ben shu
new DE that one CL book
'that new book'

Niu therefore argues that *de* is not a functional head of the nominal projection, but rather some part of the AP. In this view, the adjective is a phrasal element merged in some specifier position above the noun and *de* is inside that phrase. This fits with the view already assumed in the section on relative clauses, it suits the data above, and also is compatible with the [Numeral-Cl-DE-N] structures that we saw in Chapter 3.

In summary, Yang (2005) claims *de* is a functional projection of the noun that takes AP specifiers, whereas Zhang (2006, 2015a) and Niu (2015) suggest that adjectives with *de* are merged above the NP in a specifier and that *de* is the functional head of that phrase[5].

Analysis of modification

Adjectives may appear in two possible positions in relation to the head noun they modify, and this position is subject to crosslinguistic variation. In some languages, adjectives precede the noun, in others they follow the noun, and in others both positions are possible in certain contexts. In English and Greek adjectives appear before the noun, in Spanish, French and Italian, as a rule, they appear following the noun, though even within languages there may be some variation. Consider the following examples:

(30) a. the grey cat (English)
the beautiful girl

b. i griza gata (Greek)
the grey cat

[5]As a slight aside, Tang et al. (2007) claims that demonstratives in MC are also modifier-like and merged in a specifier position, licensed via a Spec-head agreement relation.

to ormorfi kortisi

the beautiful girl

c. el gato gris (Spanish)

the cat grey

una chica hermosa

a girl beautiful

la hermosa chica

the beautiful girl

d. le chat gris (French)

the cat grey

la belle fille

the beautiful girl

e. il gatto grigio (Italian)

the cat grey

la bella ragazza

the beautiful girl

It appears that adjectives can be generally be considered prenominal or postnominal. However, that is not entirely accurate. Consider (31) below. English adjectives typically appear preceding the noun, but some do appear following the noun.

(31) a. a proud student

b. a student proud of her work

Adjectives have two main uses: the first, as adnominal modifiers (either prenominal or

postnominal) and the second, as a complement of a copula. The adjective in (a) is the attributive type and in (b) is predicative.

There are several approaches to partitioning the types of adjectives and deriving their structure. Adjectives have traditionally been treated as elements that adjoin the NP of the N head they modify, just as an adverb adjoins a VP. Where the adjective appears to follow the noun, it has been suggested that the N undergoes some movement leftward to a higher functional head, resulting the the N-A surface form (Longobardi, 1994; Bernstein, 1993). Others have posited that adjective phrases are specifiers of functional projections and, again, N undergoes leftward movement in those cases where the noun surfaces following the noun (Cinque, 1993; Cinque et al., 1994). Kayne (1994)'s antisymmetry approach assumes all adjectives have a predicative source and prenominal adjective positions are derived via predicate fronting of the AP. Another approach is to distinguish between adjectives as attributive and predicative, which very broadly correlate to prenominal and postnominal. Within this approach, attributive adjectives are generated inside the DP, directly modifying the N while predicative adjectives are generated inside a reduced relative clause to the right of the noun (Alexiadou, 2001, 2008). Cinque (2010) proposes the following types: direct modification adjectives and indirect modification adjectives, which correspond to the attributive and predicative adjectives from earlier. The difference between the types can be summarised as follows (from Cinque (2014)):

(32)

Direct modification source	specific reading
non-restrictive reading	individual-level reading
non-intersective reading	literal or idiomatic reading
modal reading of 'possible'	**Reduced RC (indirect) source**
absolute reading	restrictive reading
absolute reading (of superlatives)	intersective reading
evaluative reading of 'unknown'	implicit RC reading with ACD of 'pos-
NP-dependent reading of 'different'	sible'

relative (to a comparison class) reading	specific or nonspecific reading
comparative reading (of superlatives)	stage-level or individual-level reading
epistemic reading of 'unknown'	literal reading
discourse anaphoric reading of 'different'	

The intricacies of the various analyses will be left to the side for now. What is important for the purposes of this work is that the few AP modifiers that can occur without *de* modify the noun directly via adjunction, and AP modifiers with *de* are merged in a specifier position above the NP.

4.2 Nominal Coordination

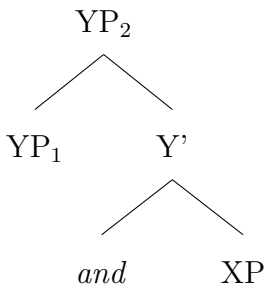
There are several coordinators in Mandarin, and they can be divided by what elements they coordinate: *ke(shi)*, 'but'; *dan(shi)*, 'but'; *haishi*, 'or' (in interrogatives only); *huozhe*, 'or' (in declaratives only); *yihuo*, 'or'; and many others. There are exclusively nominal coordinators: *he*, 'and'; *gen* 'and'; *ji*, 'and'; *yu*, 'and thus'; ones that cannot coordinate nominals: *erqie*, 'and/but'; *you*, 'and'; *yaome*, 'but'; as well as ones that only coordinate clauses: *yushi*, 'and'. What is most relevant for this thesis, is the structure associated with nominal coordination, so I will set the others aside and focus on a sample of nominal coordinators.

The coordinate construction constraint (CSC), from Ross (1967), has two parts: no single conjunct may be moved (Conjunct Constraint), and no element may be extracted from single conjuncts (Element Constraint, (Grosu, 1973)). However it has been noted that there are apparent violations to the EC, including in Mandarin , (33), and that it is not plausible, within minimalism, to stipulate special instructions onto particular constructions that cannot be achieved via normal operations (Goldsmith, 1985; Lakoff et al., 1986; Postal, 1998; Zhang, 2008a).

(33) zhe jiu shi Akiu yaoqing le ranhou mang le haoji tian de na bang
this just be Akiu invite LE then busy LE several day DE that CL.group
keren
guest
'This is the group of guests that Akiu invited and then was busy for several days.'
(Zhang, 2008a)

Following Kayne (1994) and others, we will take conjuncts to be Specifiers and Complements, assuming also that Specifiers and Conjuncts must be phrasal. Zhang (2008a, 2010) argues that the entire conjunct complex forms a constituent and it is therefore not appropriate to treat coordinators as prepositions as they are not a part of either the first or the second conjunct. She also argues that coordinators do not have a special category. At the beginning of this subsection, we saw that there are different MC coordinators according to the category of phrases being coordinated. This indicates that the coordinators have categorial requirements, i.e. c-selection restrictions, just like any other head element. Furthermore, the fact that coordinators in other languages, such as English *and* or Russian *i*, may occur with any category, this suggests that coordinators themselves have no intrinsic categorial features of their own[6]. She suggests the following structure for MC coordination complexes.

(34)



In her analysis, YP_1 is the categorial-feature provider of the entire complex so it may not move and the coordinator itself may not be stranded. In addition, MC allows a series of

[6] Zhang (2010) does not accept the idea of there being a coordination phrase (CoordP) and I am inclined to agree. Given the varieties of other head elements that would necessarily be expected to optionally select CoordP, it seems to require fewer additional rules or exceptions to simply posit that the coordinating head gets its features from the phrases it coordinates.

nominals to be coordinated without an overt coordinator, (35). In fact Chao (1968) notes that the "most frequent marker of coordination is zero."

(35) ta xihuan yinyue (he) meishu
He/She like music (and) art
'He/She likes music and art.' (Yu, 1993)

(36) wo de shubao li you caise bi: hong de, lan de, lü de,
I DE bookbag in have multicoloured pen: red DE, blue DE, green DE,
dengdeng
etc.
'There are many multicoloured pens in my bookbag: red ones, blue ones, green ones, etc.'

Constructions like these may involve nominal, verbal, or clausal conjuncts. Importantly, each conjunct in the series must be the same category as the others, suggesting there is a null coordinator. Not only coordinators, but also subordinators and prepositions/postpositions may also be dropped in certain contexts (Yu, 1993).

4.3 MC quantifiers

Mandarin Chinese quantifiers and quantifier-like elements constitute an incredibly dense area of study, both from the point of view of syntax as well as semantics. I will confine myself to a brief description of the various quantifiers and their analyses. The quantifiers *mei*, 'every' and *dou* 'all' are special cases, which very frequently appear together, but may also exist apart. They are often treated not simply as quantifiers, but as existential or distributive operators. The majority of quantifiers, exemplified by *henduo* 'many', occur in some position above the noun, without a numeral (approximate or explicit), without a classifier, but which may or may not appear with *de* between the quantifier and noun. Also *yi-xie*, glossed as 'some', is made up of the numeral/indefinite marker *yi* and the plural element *xie*, which is itself the subject of considerable study and is sometimes called

a plural classifier and sometimes an element in the Num head, but which is taken by other and this thesis as a type of quantifier phrase.

	prenominal	postnominal
classifier required	*ji-ge,* *ge-ge* (& other reduplicated Cls)	reduplicated Cls
classifier optional	*mei, xuduo, henduo, daduo,*	*dou, jie*
classifier disallowed	*yi-xie, fanshi, quanbu,* *suoyou, dabufen, duoshu*	*quanbu, duoshu*

Table 4.1: MC quantifiers

MC quantifiers fall into three broad types characterised by their complements. Numeral-type quantifiers may take a ClP-NP complement, [*(yi)xie*]-type quantifiers take an NP complement, and *xuduo*-type quantifier may or may not take a classifier. And classifiers themselves, when reduplicated, can indicate an abundant plural reading, but may also indicate distributivity.

4.3.1 *-Xie*

-Men is not the only element that indicates plurality in Mandarin Chinese. The bound morpheme *-xie* also indicates plurality of the nominal expression. However, unlike *-men* it does not attach to the nominal, instead it attaches to either: indefinite *yi* 'one', demonstratives *zhe* 'this' and *na* 'that', or existential *you*.

The element *xie* is typically translated as 'some'. It must take the numeral *yi* 'one'. *Xie* is sometimes taken to be a classifier, primarily because it occurs following a numeral and preceding a noun. However, as it cannot occur with any other numeral, it would be quite a singular type of classifier. Tang et al. (2007) treats *yi xie* together as a unitary QP that is located in the specifier of a Num(eral)P.

(37) a. zhe/na yi xie bi
this/that one some pen

'these/those pens'

b. *zhe/ne liang/san xie bi
this/that two/three some pen

This NumP than takes an NP complement, rather than a ClP-NP one.

(38) ta mai-le yi xie (*ben/xiang) shu
he buy-LE one some (CL/CL) book

In addition to modification, the status of *-men*'s compatibility or lack of compatibility with most quantifiers forms an aspect of the way in which it has been analysed. To facilitate further discussion of this topic, I present here a brief discussion of nominal quantification in MC. This will conclude the portion of this chapter devoted to familiarising the reader with the structure of particular constructions within the nominal expression of MC.

4.3.2 Other MC quantifiers

There are a great many nominal quantifiers and quantificational expressions in Mandarin , the principle distinction between them being ones that require a classifier to intervene between the quantifier and the noun (or from another point of view, include a classifier within themselves) and those that do not. Table 4.1 is far from exhaustive, but presents some of the most common quantifiers and quantificational expressions in MC. Most occur prenominally, some may be both prenominal or postnominal (not including cases where they are the main predicate or comment). Only *dou* exclusively occurs postnominally and very frequently cooccurs with another quantificational element.

(39) you yi-xie xuesheng lai le
have one-XIE student come LE

'There are some students who came.'/'Some students came.'

(40) henduo xuesheng (dou) mai le shu
many student (all) buy LE book
'Many students bought books.'

(41) xuesheng ge-ge dou hen yonggong
student CL-CL all very work.hard
'Students all work very hard.'

Many prenominal quantifiers may optionally appear with *dou*, but *mei* most frequently does. In fact the use of *mei* sometimes requires *dou*, as in (42)[7]. However in (43), *dou* is optional, according to Cheng et al. (2009), due to the object being indefinite. On the other hand, *dou* is entirely acceptable on its own, without a preceding quantifier or quantificational element, (42).

(42) xuesheng dou yiqi lai le
student all together come LE
'The students all came together.'

The quantifier *mei*, which may or may not appear with *dou*, must occur with a classifier.

(43) mei-(yi)-ge xuesheng (dou) lai le
every (one)-CL student (all) come LE
'Every student came.'

[7]In addition to *mei*, Cheng et al. (2009) notes that also *dabufen* 'most' and *suoyou* 'all' typically require *dou*.

(44) mei-(yi)-ge chushi (dou) zuo yi-dao cai
every (one)-CL chef (all) make one-CL dish
'Every chef makes a dish'

There has been a considerable amount of literature written on the topic of *dou*, in which it is analysed as an existential quantifier, a distributive marker, an e-argument constrainer, a maximality operator, and a domain restrictor (Lin, 1996, 1998; Huang, 1996; Giannakidou and Cheng, 2006; Cheng et al., 2009). Structurally speaking, this has lead to analyses in which *dou* is an element in Num or D, or a DP-external restrictor adjoined to the VP/AspP.

Let us now turn to *mei*. It appears prenominally, as most quantifiers do, but it is unlike other MC quantifiers in that it often requires *duo*. It has been suggested that *mei* realises a D head, that it can realise either Num or D, or that it is a quantifier realising a Q head and denoting a pure quantity (Li, 1999; Hsieh, 2008; Luo, 2011; Sui and Hu, 2017; Kim and Zheng, 2021; Huang, 1996; Cheng et al., 2009; Yuan, 2018).

Finally, let us briefly look at *henduo* of MC quantifiers that do not require classifiers. It occurs before the noun and optionally occurs with *dou*, but gets a partitive reading in that case Liu (2021). This type of quantifier may or may not occur with *de* occurring between it and the noun it modifies. Structurally, then, it is like any other nominal modifier, adjoining the NP.

(45) ta you henduo pengyou
he/she have many friend
'He/She has many friends.'

4.4 Appositive expressions

In Mandarin, pronouns and proper names can precede a DP. Sentences like (46) may get an appositive or a possessive reading. If possessive, then we shall assume a similar structure to what we have already seen earlier for possession.

(46) (wo/ni/ta/Zhangsan) zhe (yi) ge ren
(I/you/he/Zhangsan) this (one) CL person
'(I/you/(s)he/Zhnagsan), this person'

(47) Zhangsan ta-men zhe san ge xuesheng
Zhangsan he-MEN this three CL student
'Zhangsan and his fellow students, as a group of three'

The appositve readings are a result of DP-to-DP adjunction Hong et al. (2012). In the case of a proper name and pronoun stacked before a DP, Hsu (2019) proposes the following structure, (48), in which the proper name and pronoun adjoin forming a larger DP complex. An operator in the pronoun DP associates the pronoun with the proper name. This larger DP then adjoins the final DP.

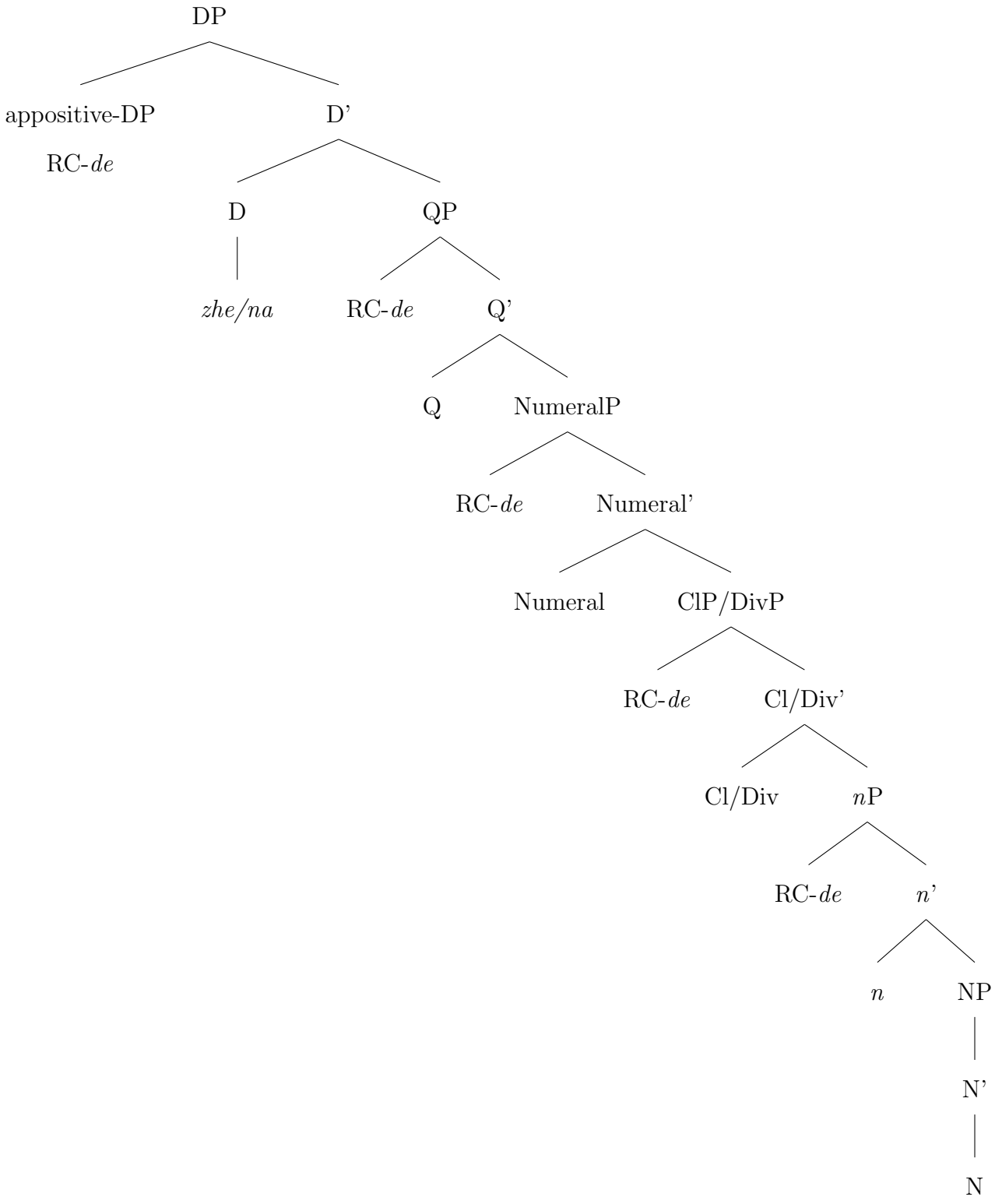
(48) [DP [DP-Appositive [DP$_i$ Zhangsan] [DP Op$_i$ tamen]][DP zhe san ge xuesheng]]

4.5 Summary

Carrying over from Chapter 3, we will assume that MC nominal expressions are maximally DPs and incorporate what we have seen in this chapter about modification, *de*-constructions, and appositives. RC modifying phrases may merge in the specifier of DP, QP, ClP, or NP. Adjectival phrases with *de* may merge in the specifier of the NP

or ClP. Appositive DP proper names and pronouns adjoin to the DP. Nominal coordination involves a coordinator head, which selects nominal expressions, since Mandarin coordinators are category specific. The conjuncts are the specifier and complement of the coordinator.

(49)


DP
appositive-DP
RC-*de*
D'
D
zhe/na
QP
RC-*de*
Q'
Q
NumeralP
RC-*de*
Numeral'
Numeral
ClP/DivP
RC-*de*
Cl/Div'
Cl/Div
*n*P
RC-*de*
n'
n
NP
N'
N

Chapter 5

The distribution of *-men*

5.1 Introduction

The existence of an apparent plural marker in Mandarin Chinese, a language with a robust classifier system, has presented a bit of a puzzle, because classifier languages are not meant to have plural morphology. Of course, this thesis far from the first to point out that the idea that the neat dichotomy between plural-marking languages and classifier-languages does not reflect the complex reality that can be observed in the expression of quantity and number values. Nonetheless, the general distinction between plural-marking and classifier- languages has proven useful and there have been various attempts to reconcile the existence of *-men* with the classifier structure of MC by either claiming that MC in fact does impart number features to its nouns and that *-men* is an ordinary plural marker, that *-men* is a plural cum definiteness marker, or that it is not principally plural at all, but an associative marker (Chao, 1968; Li and Thompson, 1981; Cook, 2019; Iljic, 1994, 2005; Li, 1999; Zhang, 2014).

The previous chapters have established the relevant background on Mandarin nouns, the structure of classifier phrases, and of MC nominal expressions. This chapter develops a description of the distribution and interpretation of the plural marker *-men* . We will

begin with the most basic description from the literature, and then build up from there by re-examining each of the environments in which *-men* appears and where it is is claimed not to appear. The chapter will conclude with a full description of the properties and distribution of *-men*

5.1.1 Base description of *-men*

The most foundational distribution of *-men*, and subsequently commonly repeated in the literature is that of Li (1999), summarised in (1).

a *-Men* attaches only to pronouns, proper names, and some common nouns.

b Common nouns with *-men* must be interpreted as definite.

c A proper name suffixed with *-men* may get either a plural or a collective reading.

d A pronoun/proper name with *-men* may be be followed, but not preceded, by a quantity expression. When a proper name with *-men* is followed by a quantity expression, it only gets the 'collective' reading. Common nouns with *-men* cannot occur with any quantity expression (Li, 1999).

The use of *-men* is highly restricted. It attaches only to pronouns, proper names, and some common nouns. Its use is typically optional, only being required on plural pronouns. On common nouns (CN), *-men* is disallowed in a number circumstances, which we will see, but rarely if ever obligatory. The following sections will re-examine each aspect of *-men*.

5.2 What elements does *-men* attach to

This may be very basic, but we are covering all the claims about *-men*. The *-men* marker is a bound morpheme which attaches to pronouns, proper names, and some common nouns, see (1).

(1) a. wo-men/ta-men
I-MEN/he-MEN
we/they

b. Zhangsan-men
Zhangsan-MEN
Zhangsan and others

c. Tongshi-men
colleague-MEN
colleagues

5.2.1 Types of Common Nouns with *-men*

The claim is that when attaching to a common noun, that *-men* exclusively attaches to human nouns. It is accurate that *-men* most commonly attaches to human nouns, as in (2).

(2) ni pengyou-men lai-le
you friend-MEN come-ASP
'Your friends have arrived.'

Non-human animates with *-men*

However, it does sometimes attach to non-human animate nouns.

(3) ta gei xiaogou-men xi le ge zao
she give puppy-MEN wash LE CL bath

She gave the puppies a bath.

(4) xiaoji he xiaoya-men zhongyu huandiao le maorongrong de jiu yifu
chick and duckling-MEN finally change ASP furry DE old clothes
The chick and ducklings finally changed their old furry clothes.

Inanimate nouns with *men*

Below are some examples of inanimate nouns suffixed with *-men*. Note that in these instances, the noun does not get a straightforward plural interpretation. When an inanimate noun appears with *-men* it is in a context in which that noun is being described or imbued with some human-like quality or the speaker is expressing some emotional affinity with the object.

(5) naobu bei paoqi de zuozi yizimen zai kongdangdang de
imagine PASS abandon DE table chair -MEN in absolutely
fangjian li kuqi de yangzi
empty DE room inside weep DE appearance
Imagine the mournful appearance of the abandoned desks and chairs in completely empty rooms.

When the object is just an object, with no anthropomorphic attributes, then *-men* become less acceptable, (6).

(6) ?qing ba zhuozi-men wei cheng yi ge quan
please BA table-MEN encircle become one CL circle
Please put the tables in a circle.

Thus, we can see that it is not accurate to completely disallow the possibility of a typically inanimate noun to appear with *-men*. However, the fact that only objects being viewed in a human-like way are acceptable with *-men* only reinforces rather than weakens the claim that *men* is associated with a [+human] feature on the nouns it suffixes.

5.2.2 Pronouns with *-men*

We have already observed that *-men* attaches to pronouns. It is in fact the standard way or forming plural pronouns. PN-*men* is by far the most common use of *-men* and the apparently only obligatory use of it.

person	singular	plural
1st	wo	wo-men
2nd	ni	ni-men
3rd	ta	ta-men

Table 5.1: Mandarin pronouns

The claim regarding the [+human] requirements of *-men* has been extended to pronouns, with some claiming that the inanimate third person pronoun *ta*. Iljic suggests that *-men* is not compatible with pronouns whose antecedent is inanimate, based on (7).

(7) zhe-xie cai wo chi-bu-liao, ni ba ta chi ba!
this-XIE dish I eat-NEG-finish, you BA it eat BA.PRT
I can't finish these dishes, you eat them!

However, this is simply inaccurate. However, any Chinese grammar book or study guide will tell you that inanimate *ta-men* is entirely standard. Numerous examples are available, just like (8).

(8) mei yidao peiliao weidao jiongyi. zheshi xuyao yi gen zhu xian
each together ingredient flavour distinct now need one basis bead string

chuanlian ta-men.
connect it-MEN
Each condiment has a distinct flavour. The only thing missing now is a medium to link them together. (Chen, 2020)

In fact, the third person pronoun *ta*, in spoken MC, is entirely homophonous between the masculine, feminine, or neuter; animate or inanimate forms. It certainly could be argued that it does not actually encode such features[1].

One important thing to note here is that while we saw that non-human animate and inanimate common nouns with *-men* were either anthropomorphized and sympathetic. Pronouns with inanimate referents have no such quality when pluralised with *-men*. They receive a straightforwardly plural interpretation.

5.2.3 Proper Names with *-men*

A proper name may be suffixed with *-men*. According to Iljic (1994); Li (1999), (9) can receive a collective interpretation (others associated with the named individual) or a plural interpretation (others sharing the same name or characteristics). However, Niu (2015) does not accept the collective reading here.

(9) XiaoQiang-men shenme shihou lai?
XiaoQiang-MEN what time come
?'When will XiaoQiang and other people come?'

'When will all the XiaoQiangs come?'

Proper names may also be followed, but not preceded, by a quantity expression, as in

[1]There are different forms for masculine, feminine, and neuter in writing in modern Mandarin, but it is debatable whether or not this distinction holds a reality in the mental grammar of speakers. It is variable, at best

(10). A proper name may also be followed by a pronoun-*men* and in such cases, only the collective reading of a group containing the person denoted by the proper name and others associated with them is available, (11).

(10) wo qing XiaoQiang-men san ge (ren) chifan
I invite XiaoQiang-MEN three CL (person) eat
'I invited XiaoQiang and two other to a meal.'

*'I invited the three XiaoQiangs to a meal'

(11) XiaoQiang ta-men shenme shihou lai?
XiaoQiang he-MEN what time come
'When will Xiaoqiang and other people come?'

*'When will the XiaoQiangs come?'

5.2.4 Summary of hosts for *-men*

-*Men* affixes to the following elements:

- Pronouns: both animate and inanimate, with no difference in meaning or interpretation
- Proper names: a plural reading or collective reading are available depending on the context
- Common nouns: human nouns can be suffixed with -*men*; non-human animates and even inanimates are not entirely disallowed, but typically in contexts in which they are given human qualities

5.3 N-*men* and (in)definite interpretation

-*Men*-marked nouns, it is claimed, are always interpreted as definite. This is evidenced not only by the minimal contrast of (12) and (13), but also their incompatibility with existential *you* constructions, in (14-a).

(12) wo qu zhao haizi
I go find child
'I will go find a/the/some child/children'

(13) wo qu zhao haizi-men
I go find child-MEN
'I will go find the children' (Li, 1999)

(14) a. *you ren-men
have person-MEN

b. you ren
have person
'There is/are somebody/some people.'

c. *mei you ren-men
not have person-MEN

d. mei you ren
not have person
'There is nobody.' (Iljic (1994) quoting Rygaloff (1973) and Yorifuji (1976))

(15) yiyuan jiang guyong hushi
hospital will hire nurse

'The hospital will hire (a/some) nurse(s)'

(16) #yiyuan jiang guyong hushi-men
hospital will hire nurse-MEN
'The hospital will hire the nurses'

(17) ba haizi-men dai qu gongyuan
BA child-MEN take go park
'Take the children to the park.'

(18) ba haizi dai qu gongyuan
BA child take go park
'Take the child/children to the park.'

(19) dai haizi-men shang xue
take child-MEN attend school
'take the children to school'

(20) dai haizi shang xue
take child attend school
'take the child/children to school'

An N-*men* cannot be generic nor occur with a kind-taking predicate (Rygaloff, 1973; Yorifuji, 1976; Iljic, 1994; Li, 1999; Nakanishi and Tomioka, 2004).

(21) *Xiaofangyuan-men dou hen shuai
firefighter-MEN all very handsome

(22) *Nv jianchaguan-men hen shao-you
female prosecutor-MEN very rare

Ren-men 'people', in sentences such as (23) may appear to be generic, however it should not be interpreted as 'people, in general' but rather 'particular, contextually given people'.

Additionally, a noun with *-men* cannot serve as a predicate, it must be an argument, (24).

(23) ren-men zhengzai yilai-zhe wo-men
person-MEN currently depend-ZHE I-MEN
'People/Everyone are/is depending on us'

(24) ta-men shi laoshi(*-men)
he/she-MEN is teacher(*-MEN)
'They are teachers.' (Iljic, 1994)

And finally, consider (25) and (26). When appearing with an intensional verb, an N-*men* necessarily takes wide scope. A bare noun in that same position favours narrow scope.

(25) wo xuyao xuesheng-men lai bang wo ban-jia
I need student-MEN come help I move-house
*need > student-MEN 'I need (some) students to come help me move.

student-MEN > need 'There are some [certain] students such that I need them to come help me move'

(26) wo xuyao xuesheng lai bang wo ban-jia
I need student come help I move-house
need > student-MEN 'I need (some) students to come help me move.

*student-MEN > need 'There are some [certain] students such that I need them to come help me move'

All of the above examples strongly establish that N-*men* prefers a definite interpretation. It indeed is most commonly found in definite expressions and favours such as reading. However, favouring a definite interpretation does not necessarily rule out the availability of other readings, which we'll consider next.

5.3.1 *-Men* and demonstratives

Despite the fact that Li (1999); Huang et al. (2009), and others claim N-*men* must be definite, they also claim it cannot appear with a demonstrative preceding it. Others, including Yang (2005), have already noted that this is not the case. It can occur with a demonstrative with or without the plural element *xie*[2]. There is some variation here between speakers, with some noting that N-*men* with *xie* sounds redundant, while other indicating it is preferred to have both a plural demonstrative plural noun.

(27) na ren-men
that person-MEN
'those people'

(28) *zhe-ge/na-ge ren-men
this-CL/that-CL person-MEN

(29) zhe/na-xie ren-men
this/that-XIE person-MEN
'These/those people'

[2] *Xie* is sometimes taken to instantiate the plural feature, when *-men* is not available in that position and is sometimes taken to be a plural classifier. However, the latter explanation is complicated by the fact that *xie* can occur with the general classifier *ge*.

5.3.2 *-men* with indefinite interpretation

Consider both (30) and (31). They both can get indefinite interpretations, and for my informants, the indefinite reading are available with or without the indefinite quantifier *yi xie*.

(30) Wang laoshi xiang jian (yi xie) zhengke-men
Wang teacher want meet (one some.CL) politician-MEN
Teacher Wang wants to meet (some) politicians.

(31) zai zhei-ge gongyuan li zong you (yi xie) haizi-men zai wanshua
at this-CL park in always have (one some.CL) child-MEN at play
There are always some children playing in this park.

-*Men* is not able to appear in existential constructions, with *you*, and it may initially appear that the above is a counterexample. However, Tsai (2003) describes three different types of existential quantification in Mandarin : a. presentational e.g. *you ren...*; b. partitive e.g. *you de ren...*; and c. specific plural e.g. *you (yi) xie ren....* *-men* is compatible with b. and c., but not a.

(32) zai zhe ge gongyuan li zong you (yi xie) haizi-men zai wanshua
at this CL park in always have (one some) child-MEN at play
There are always (some) children playing in the park

definite and indefinite readings available based on context

(33) weishenme you-xie haizi-men geng xihuan wan youxi er bu xihuan
why exist-some.CL student-MEN more like play game yet not like
xuexi
study
Why do some [of the] students prefer to play games rather than study

5.4 *-men* and quantity expressions

A principal claim about, *-men* is its incompatible with a quantity expression of the type [numeral-CL], (34) and (35). Examples like these

(34) xuesheng-men
student-MEN
the students

(35) *san ge xuesheng-men
three CL student-MEN
(Li, 1999)

For Iljic (1994, 2005), the above examples support his view that *-men* is a collective marker on common nouns. If a quantity expression quantifies over individuals, then it's incompatibility with *-men* suggests that *-men* is group-forming, in his view. However, Li (1999) points out that the picture is not so simple. An N-*men* cannot appear with a quantity expression, (36), but a pronoun-*men* may precede a quantity expression, (37).

(36) *pengyou-men san ge (ren)
friend-MEN three CL (person)

(37) ta-men san ge (ren)
he/she-MEN three CL (person)
'them three (people)'

5.4.1 *-men* and classifiers

An individual classifier can appear with N-*men* when the preceding numeral is approxiate, as in (38) and (39), from Yang (2005).

(38) zai shi ji ge tongxue-men de
at ten a.few/how.many Cl classmate-MEN DE
qianhuhouyong xia, Yan Yuhong zou le chiqu
have.a.retinue.before.and.behind Yan Yuhong walk ASP out
'With ten-odd classmates crowding around, Yan Yuhong walked out.'

(39) jijian-jiaolian Liu Yuling zhengzai zhidao qishi duo ge
fencing-instructor Liu Yuling PROG guide seventy many/which Cl
xuesheng-men lianxi
student-MEN practice
'The fencing intsructor Liu Yuling is giving seventy-some students directions to practice fencing.'

(40) ruguo keyi gei wo xuan, wo hai shi xiang hui dao guoqu,
if can give 1.sg choose 1.sg still be want return arrive past
ji bai ge tongshi-men yiqi zuo-hua, te you
a.few/how.many hundred Cl colleague-MEN together make-painting very have
ganjue
feeling
'If I could choose, I still would like to go back to the past, painting with several-hundred colleagues; that really feels good.' [(BLCU Corpus, from Yangcheng Evening News)]

The examples below also show the *-men* may co-occur with a [Numeral-Cl]. (41) and (42) both contain the same measure word-type classifier, *qun*, with the addition in the second one of a modifier to the classifier. Both are completely grammatical. The next two, (43) and (44) include (Adj)-CL-*de* modification of the N-*men* , which is not acceptable. The notable point here is that the only acceptable numeral is *yi* 'one'. With any other numeral they become unacceptable.

(41) Liu laoshi he yi qun haizi-men....
Liu teacher and one MW.group child-MEN
'Teacher Liu and a group of children...'

(42) Liu laoshi he yi da qun haizi-men ...
Liu teacher and one big MW.group child-MEN
'Teacher Liu and a big group of children...'

(43) *Liu laoshi he yi qun de haizi-men...
Liu teacher and one MW.group DE child-MEN
intended: 'Teacher Liu and a group of children...'

(44) ??Liu laoshi he yi da qun de haizi-men...
Liu teacher and one big MW.group DE child-MEN
'Teacher Liu and a big group of children...'

5.4.2 *-men* and quantifiers

Often, *-men* is described as generally incompatible with quantifiers of all kinds, but few examples are provided. The essence of the arguments is that *-men* is structurally barred from appearing with Cl. It is semantically incompatible with an individuating classifier, but is compatible with a collective or group-forming measure word. An N-*men* is compatible, and often preferred with the distributive element, *dou* 'all'. It is also acceptable with *yi-xie* 'some'.

(45) xuesheng-men dou zou-le
student-MEN all leave-LE
'[The] students have all gone'

(46) yi-xie haizi-men hai ziji dongshou
one-XIE child-MEN yet oneself do things
'Some children do things themselves.'

(47) you yi-xie xuesheng lai le
have one-XIE student come LE
'There are some students who came.'/'Some students came.'

(48) henduo xuesheng (dou) mai le shu
many student (all) buy LE book
'Many students bought books.'

(49) xuesheng ge-ge dou hen yonggong
student CL-CL all very work.hard
'Students all work very hard.'

Many prenominal quantifiers may optionally appear with *dou*, but *mei* most frequently does. In fact the use of *mei* sometimes requires *dou*, as in (50)[3]. However in (51), *dou* is optional, according to Cheng et al. (2009), due to the object being indefinite. On the other hand, *dou* is entirely acceptable on its own, without a preceding quantifier or quantificational element, (52).

(50) mei-(yi)-ge xuesheng *(dou) lai le
every (one)-CL student *(all) come LE
'Every student came.'

[3]In addition to *mei*, Cheng et al. (2009) notes that also *dabufen* 'most' and *suoyou* 'all' typically require *dou*.

(51) mei-(yi)-ge chushi (dou) zuo yi-dao cai
every (one)-CL chef (all) make one-CL dish
'Every chef makes a dish'

(52) xuesheng dou yiqi lai le
student all together come LE
'The students all came together.'

There has been a considerable amount of literature written on the topic of *dou*, in which it is analysed as an existential quantifier, a distributive marker, an e-argument constrainer, a maximality operator, and a domain restrictor (Lin, 1996, 1998; Huang, 1996; Giannakidou and Cheng, 2006; Cheng et al., 2009). Structurally speaking, this has lead to analyses in which *dou* is an element in Num or D, or a DP-external restrictor adjoined to the VP/AspP.

Let us now turn to *mei*. It appears prenominally, as most quantifiers do, but it is unlike other MC quantifiers in that it often requires *duo*. It has been suggested that *mei* realises a D head, that it can realise either Num or D, or that it is a quantifier realising a Q head and denoting a pure quantity (Li, 1999; Hsieh, 2008; Luo, 2011; Sui and Hu, 2017; Kim and Zheng, 2021; Huang, 1996; Cheng et al., 2009; Yuan, 2018).

Finally, let us briefly look at *henduo* as a representative of the majority of MC quantifiers. It occurs before the noun and does not co-occur with *dou*.

(53) ta you henduo pengyou
he/she have many friend
'He/She has many friends.'

The following examples show *-men* co-occurring with several quantifiers, including 'many', 'most', and 'all', as well at the distributive *dou* 'all/each'.

(54) suoyou haizi-men shui le
all child-MEN sleep LE
'All the children are sleeping'

(55) haizi-men quanbu shui le
child-MEN all sleep LE
'The children are all sleeping'

It is worth noting that the definite interpretation of the N-*men* in these contexts remains, and results in a partitive reading for the quantifiers.

(56) xuduo de laoshi-men dou you yi-zhong gongtong ganshou
many DE teacher-MEN all have one-kind of common feeling
Many [of the] teachers share a common feeling.

(57) ...daduo xuesheng-men dou shi ziji zai jiazhong fuxi de
most student-MEN all are oneself at home revise DE
'...most [of the] students are revising in their own at homes.'

(58) daduoshu de haizi-men sihu xiangchu de hen hao...
majority DE child-MEN seem get along DE very well
'The majority [of the] children seem to get along very well...'

(59) suiran gaokao yijing luomu, dan xie-bu-wan
although university-entrance-exam already curtain-drop, but write-not-finish
de gaokao shijuan, yijiu rang henduo xuesheng-men
DE university-entrance-exam paper, still make many student-MEN
houpa!
lingering-fear
Although the curtain has fallen on the university entrance exams, the many unfinished university entrance exam papers are still causing many [of the] students

anxiety!

Quantifiers may occur with or without *de* , and (59) and (58) show that both are possible with N-*men*.

According to Li (1999), it is not acceptable with *ji-ge* 'some/a few'.

(60) *ji-ge haizi-men
a.few-CL student-MEN

But we already saw in the previous section on classifiers that this construction can be acceptable.

5.5 -*men* and modification

The other types of modification in MC include a relatively small set of adjectives that can modify nouns directly and other adjectives which require the *de*, which are typically taken as reduced relative clauses, and relative clauses. Some claim that N-*men* is not compatible with modification, typically linked to its definiteness, thought that should not bar modification and the topic is not explained well in the literature that mentions it. (61) is an example of the Adj-*de* modifying a -*men*-marked noun. And (62) shows a RC-*de* co-occurring with -*men*.

(61) meidang huopo keai de haizi-men cong wo shenbian bengbengtiaotiao
whenever lively adorable DE child-MEN from my side leap
jingguo, zong hui gouqi dui tongnian wangshi de meihao huiyi
leap jump jump pass, always will evoke to childhood past events

DE beautiful memory
Whenever my lively and lovely children dance by me, it always evokes beautiful memories of childhood.

(62) Wuhan zao qi de pengyou-men zai xibian de tiankong kan-dao wo
Wuhan early rise DE friend-MEN in west.side DE sky see-COMP I
le ma?
ASP Q
Can my early rising friends in Wuhan see me in the western sky?

The final use of *de* that was discussed in the previous chapter is in possessives, which as (63) shows, is also compatible with *-men*.

(63) Ju Linsheng de linju-men zai jieshang tan-zhe zhe jian shiqing,
Ju Linsheng DE neighbor-MEN in street.on talk-PROG this CL matter,
ta-men renwei zhe hen bu gongping
he-MEN believe this very not fair
Ju Linsheng's neighbors talked about this issue in the street, they thought is was unfair.

Far from being disallowed, nouns with *-men* can receive any and all types of modification that nouns without *-men* receive. There is no syntactic or interpretational impediment to modifying an N-*men*.

5.5.1 *-men* and nominal coordination

Here we can see that ways in which *-men* interacts with coordination. In (64), *-men* affixes to one of the coordinated nouns, and only that directly modified noun is interpreted as plural.

(64) xiaoji he xiaoya-men zhongyu huandiao le maorongrong de jiu yifu
chick and duckling-MEN finally change ASP furry DE old clothes

The chick and ducklings finally changed their old furry clothes.

However, (65) and (66) show *-men* attached only to the final conjunct, while the plural interpretation is distributed to both conjuncts.

(65) funü xiao haizi-men
woman small child-MEN
'the women and children' (Iljic (2005) quoting Kaden (1964))

(66) xiansheng gen xuesheng-men
teacher with student-MEN
'the teachers and students' (Iljic (2005) quoting Chao (1968))

This distribution of the interpretation of *-men* is possible both when there is an overt coordinator and when the coordinator is omitted.

(67) ta gaosu le xuesheng laoshi (he) jiazhang-men ...
(s)he tell LE student teacher (and) parent-MEN
(S)he told the students, teachers, and parents...

In addition, there are coordinated individuals, with *-men* appearing only on the final person, but getting a cumulative interpretation. The marker does not mean that each individual should be interpreted as plural or that the final *-men*marked person should get a plural interpretation, but rather the the three named individuals make up the group together.

(68) Yanwang yu Niutou Mamian-men
King.of.hell and Ox.head Horse.face-MEN

'The King of Hell and [his associates] Ox-head and Horse-face' (She, 1979)

5.6 Other uses of *-men*

Aside from the list of typical features of *-men* that we saw at the start of this chapter. There are some occurrences of *-men* that were not addressed there.

5.6.1 Vocative N-*men*

A not often touched upon use of *-men* is in allocution. It is mentioned repeatedly by Iljic as part of his argument for treating *-men* as a collective marker Iljic (1994, 2001b,a, 2005). This section is not concerned yet with an explanation, but it is an interesting and frequently overlooked part of the features of *-men*. Iljic notes that while *-men* is obligatory on pronouns, it is optional in nearly all other contexts, except in (69). When addressing an audience or group, it would be inappropriate not to use *-men*.

(69) pengyou-men!
friend-MEN
'[Dear] friends!' Iljic (1994)

N-*men* is the typical way to address a group of people, (70), and it is accurate to say this same phrase would not be contextually appropriate without *-men*.

(70) nvshi-men xiansheng-men
lady-MEN gentleman-MEN
'ladies and gentlemen'

There are, of course, other options for addressing groups of people, such as (71), so perhaps it is too strong to call *-men* obligatory. What is potentially obligatory is that at least some indicator of perhaps explicit plurality, perhaps associativity, or collectivity, perhaps affection, is required when addressing groups, and *-men* is one of those elements.

(71) ge-wei tongshi
everybody colleague
'dear colleagues'

(72) tongshi-men
colleague-MEN
'colleagues'

'dear colleagues'

5.6.2 *-Men*-marked nouns with less clear plurality

Given that *-men*, whether taken to be an instantiation of number or some kind of associative or collective marker, it is always assumed to at least indicate some kind of plurality, the following examples may be a bit surprising. In (73) and (74) we see two utterances in which the referent of the *-men*-marked noun is singular.

(73) jiayou jie-men, ni neng xing
come.on sister-MEN, you can do
'Come on sis, you can do it!'

(74) kan budao hongdeng, ge-menr?
see not red.light, brother-MEN
'Don't you see the red light, buddy?

The following sentence, (75), could potentially get a plural interpretation of the noun or

not.

(75) ge-menr, manman zou zhe
brother-MEN, slow go ZHE
Buddy, take it slow Center for Chinese Linguistics (2003)

A potentially relevant consideration of the above examples and that of (76), is that the contexts are very casual. These utterances are tinged with either affection or disrespect.

(76) ba ni-men ge-menr ye jiao guolai, beng li ta,
BA you-MEN brother-MEN also call come, no.need pay.attention.to him,
rang ta yi ge ren dui zhe qiang shuo qu, ta na maobing dou
let him one CL person toward ASP wall talk go, he that shortcoming all
shi ni-men guan chulai de
is you-MEN indulge come.out DE
'Call your buddy over, don't pay attention to him, let him talk to the wall alone, he has those bad habits because you guys have been indulging him.' Center for Chinese Linguistics (2003)

5.7 Revised description of *-men*

Considering everything presented in this chapter, the features of *-men* that will inform the analysis if this thesis are the following. Table 5.2 indicates the phrases and structures that can co-occur with *-men*, and specifically which can occur with a common noun, a proper name, and a pronoun affixed with *-men*.

Additionally, to bookend the list of interpretations and features of *-men* with which this chapter begin, below is the revised list of features this thesis has identified[4].

[4]In addition, there is an oft mentioned phonological constraint on the use of *-men* . When attaching to common nouns, monosyllabic nouns are dispreferred (Iljic (1994, 2005); Guo and Zhou (2003); Cook (2019) and others)

	N-*men*	**PN-*men***	**Pro-*men***
demonstrative	only following	only preceding	only preceding
#-CL	generally no, following in some cases	only preceding	only preceding
AP w/o *de*	yes	no	no
AP-*de*	yes	no	no
reduced RC-*de*	yes	no	no
RC-*de*	yes	no	no

Table 5.2: Structures compatible with *-men*

(77) a.*-men* attaches to pronouns, proper names, and some common nouns.

b.Common nouns with *-men* are most often but not obligatorily interpreted as definite; indefinite interpretation is possible in certain contexts.

c.A proper name suffixed with *-men* may get either a plural or a collective reading.

d.When a proper name with *-men* is followed by a quantity expression, the 'collective' reading is more available. A proper name followed by a pronoun with *-men* forces the collective interpretation.

e.Common nouns with *-men* cannot be preceded by [Numeral-CL] quantity expressions, but can occur with a classifier as long as that expression is preceded only by *yi* 'a/one' or an approximate number.

f.*-Men* may modify a coordinated complex and be interpreted only on the directly suffixed conjunct, or it may be interpreted distributively or cumulatively over the coordinated complex.

g.*-Men*, in relevant contexts, may carry an implication of familiarity, affection, intimacy, diminutivity, etc; but can be interpreted as simple plurality.

h.In some contexts, the *-men*-marked noun itself is not interpreted as plural

Chapter 6

Full analysis of -men

6.1 Previous analyses of *-men*

-Men is typically described as either a collective marker or a plural marker, and always definite. Chao (1968) and Iljic (1994, 2005) describe *-men* as a collective marker on common nouns and a plural marker on pronouns. Li (1999); Huang et al. (2009); Nakanishi and Tomioka (2004); Cheng and Sybesma (1999); Ghomeshi (2003); Kurafuji (2004); Yang (2005) and Niu (2015) claim *-men* is a plural marker, though they differ in some of the evidence they accept as well as the syntactic structures they propose[1]. The principle modern analyses are discussed below.

6.1.1 *-men* as a plural marker

A number of researchers have claimed *-men* is a number marker, including Li (1999); Huang et al. (2009); Nakanishi and Tomioka (2004); Cheng and Sybesma (1999); Yang

[1]In addition to the more accepted analyses, Kurafuji (2004) claims *-men* is a plural definite marker, which is generated in D. It is a plural element that also marks definiteness. He claims that the numeral and classifier are part of the classifier phrase which is in Spec DP. The numeral-classifier phrase cannot precede a *-men* suffixed noun due to semantic incompatibility. In the process of forming my analysis, it will naturally fall out that this analysis cannot account for the facts surrounding *-men*. The structure associated with classifiers I have already addressed in chapter 3

(2005) and Niu (2015). Here I will discuss the analyses of Li (1999); Niu (2015); Yang (2005); Jiang (2017a) and Kim and Meng (2021).

-men as a plural in Num

Li (1999), the substance of which is repeated in Huang et al. (2009), analyses *-men* as an ordinary plural, albeit with a more restricted distributions than plural markers typically display. Li (1999) summarises the main features of *-men* as the following:

(1) a. *-Men* attaches only to pronouns, proper names, and some common nouns.

b. Common nouns with *-men* must be interpreted as definite.

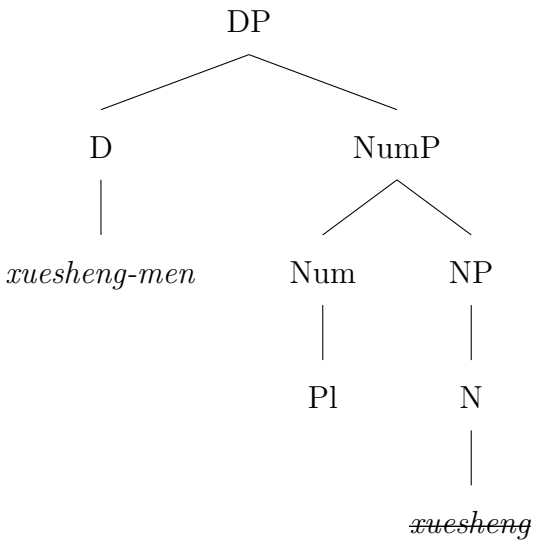
c. A proper name suffixed with *-men* may get either a plural or a collective reading.

d. A pronoun/proper name with *-men* may be be followed, but not preceded, by a quantity expression. When a proper name with *-men* is followed by a quantity expression, it only gets the 'collective' reading. Common nouns with *-men* cannot occur with any quantity expression.

First, let us establish some of her assumptions about MC nominal expressions. She, here in 1999 and in Li (1997), believes MC nominals project a full DP for definite and indefinite expressions, only quantity-denoting expressions are maximally NumPs. Definite bare nouns undergo N-to-D movement, while indefinite bare nouns had the D filled by a default null existential operator, following Longobardi (1994). Indefinite bare nouns thus do not move to D, but are not prevented from moving through CL to Num. Based on these features, Li proposes that a *-men* is a plural realised in D. Pl appears in Num and that it needs to be checked, or realised, in D. Nouns are base-generated in N and undergo N-to-D movement passing through Num and combining with Pl as they do. This allows *-men* to be realised on a noun and for *-men*, i.e. PL, to be checked in D, as seen in (2), representing (34). It also neatly explains why *-men*-marked nouns are interpreted as

definite. Because nouns are generated in N and not D, this, it is claimed, also accounts for the ungrammaticality of a common noun suffixed with *-men* to be followed by a quantity expression.

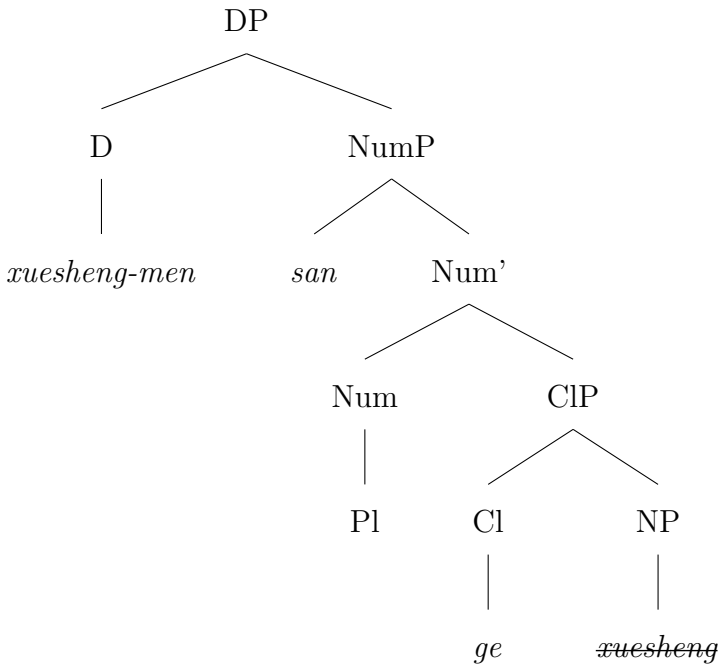
(2)



When a classifier is present, the Cl head intervenes between NP and Num, the movement is blocked. Pl cannot be realised on NP without violating the Head Movement Constrain (HMC), thus accounting for the inability for N-*men* to be preceded by a [numeral-Cl] expression, and the subsequent ungrammaticality of sentences like (35). What if there is a demonstrative is D, for example *zhe-xie xuesheng-men*[2] 'those students'? Li claims that without an intervening classifier, it is entirely possible for PL to realised in N, however it is not explicitly stated whether or not Pl moves to N or N moves to Num, but given the nominal structure she assumes, it seems to reasonable to interpret N as moving to Num when it cannot move to D, as long as Cl is empty.

[2] *Xie* is a plural element suffixed to demonstratives, which Li (1999) assumes to be in the specifier with the head being Pl which is realised on N. Or potentially *xie* has not moved but is simply part of the demonstrative *zhexie/naxie*

(3) *



In this proposal, there is a unified analysis for the appearance of *-men* on pronouns and proper names as well as common nouns. For Li, both pronouns and proper names are merged in D-position. We saw earlier, in (37), that a pronoun or proper name with *-men* may be followed by a quantity expression. In these cases Pl cannot be realised on N because movement is blocked by the presence of CL. However, there is nothing preventing Pl from moving to D and being realised on the pronoun, or proper name, there. The simultaneously accounts for grammaticality of (37), *ta-men san ge (ren)*, and the ungrammaticality of (36), *pengyou-men san ge (ren)*. Some things not captured in this analysis is the restriction of *-men* to human nouns, nor the precise mechanism motivating the movement of Pl to D when it is attaching to pronouns.

Niu (2015) critiques Huang et al. (2009), saying that (4), in which there is a pronoun followed by a noun, and optionally a plural demonstrative, with no [numeral-CL] quantity expression intervening, cannot be accounted for as there would be no reason why *-men* may only surface on the pronoun and not the noun in such cases. The explanation for Li (1999) and Huang et al. (2009) would seem to be that N-to-D movement would not be triggered for the noun, since D is already filled. Pl needs to be realised on some type of nominal, whether it is a pronoun or a noun is unimportant; and it needs to be checked in

D. Therefore, Pl moves to D and is realised on the pronoun already merged there[3].

(4) wo dui ta-men (zhe-xie) xuesheng hen (you) xinxin
I DUI (s)he-MEN (that-XIE) student very confidence
'I have confidence in those students' [4]

Otherwise, Niu (2015) accepts the core assumptions of Li (1999) and Huang et al. (2009), that there is a Pl in Num and that is is realised as *-men*, but differs in the details of the derivation of *-men*-marked nominals. She also accepts (1)(a & b), but not (1)(c &d), in place of which she proposes the following:

(5) c.Attachment of *-men* to nominals yields only a plural reading, the same as English *-s*.

d.Proper names or common nouns with *-men* can only appear alone; pronoun-*men* may be followed by a [(demonstrative)+numeral+Cl] sequence.

e.The "collective" reading is only possible when *-men* is suffixed to a pronoun; "collective" referring the meaning of "a group of people anchored by the referent of the pronoun".

We see here, that Niu does not accept the collective readings for proper names suffixed with *-men*, only for a pronoun-*men*. A proper name can occur preceding the pronoun-*men*, but a PN-*men* alone results in a plural reading only. She claims *-men* has a [+PL] feature and an uninterpretable animate feature [*u*animate], rather than a [*u*human] feature, since there are some contexts in which *-men* attaches to non-human animate nouns. For her, proper names are not merged in D, but in N and undergo N-to-D movement, following

[3]This and several other critiques Niu (2015) has of Huang et al. (2009) are based around a lack of explanation Huang et al. provides for the structures they propose. I agree that the original analysis in Li (1999) leaves out a number of details, but taken in conjunction with Li (1997), as well as the other material in earlier chapters of Huang et al. (2009), I believe the explanation of their account I have provided is accurate to their intentions

[4]The real challenge here to Li (1999) and Huang et al. (2009), is not specifically related to *-men* but is the presence of both a pronoun and a demonstrative, both of which they claim are generated in D.

Longobardi (1994), and therefore a PN-*men* cannot precede a quantity expression. She agrees that Pl, represented by *-men* and potentially *xie*, is merged in Num head position. Based on the observation that N-*men* is obligatorily interpreted as definite and animate, she proposes that *-men* carries a [+definite +animate] feature bundle. The [+def] feature ensures that Pl is realised as *-men* only on elements in D. It also ensures that PL moves to D to attach to pronouns[5]. The [+ani] feature ensures that only animate nouns and pronouns can be suffixed by *-men*. **San ge xuesheng-men*, as an indefinite expression, is ruled out not only by the CL blocking movement of the noun, but also because the D head is already filled with a null determiner. The same phrase as a quantity expression is ruled out, again due to the CL, but also because there is no D position available as quantity expressions are NumPs.

She goes on to claim that an N-*men* cannot appear with an adjective. She assumes adjectives are merged as specifiers of functional heads above the nominal within the DP, following Cinque et al. (1994); Cinque (2010); Paul (2005); Zhang (2015b), and many others. Expressions like *congming de xuesheng* 'smart student(s)' get an indefinite reading, which for her means D is null. The movement of the noun to Num is blocked by the intervening F head, consequently, *congming de xuesheng-men* cannot be derived, (6).

(6) $[_{DP}$D $[_{FP}$ $[_{AP}$ *congming de*][F' [F][$_{NP}$ N *xuesheng*]]]]

This is a problem for this analysis considering that, as I will present in the following section, modifiers of many kinds are acceptable, and in fact common with N-*men*.

-Men as a plural in *n*

Yang (2005) analyses *-men* as a suffix under little *n*. Yang accepts, like Li (1999), that

[5] Niu (2015) acknowledges in a footnote that there are expressions in which *-men* surfaces on an indefinite expression. She notes that she and her consultants do not find such expressions acceptable and that there are likely dialectal differences involved, albeit admits that it may be that her analysis with a [+def] feature for *-men* will need to be amended.

both the plural and collective readings are available for *-men*. In her analysis, *-men* is a little *n* head which picks out pluralities from the set denoted by *n*P , similar to the function of the [+PL] Num head. A noun undergoes obligatory N to little *n* movement. Then, triggered by the [+def] feature in D, undergoes movement through Num to D. This movement through Num allows *-men* to instantiate the plural feature there and then the subsequent movement to D accounts for the definiteness of *-men* suffixed nouns. For Yang, *-men* has an uninterpretable human feature [*u*human], which is why it only attaches to human nouns. She also claims that the inability of a [numeral+Cl] phrase to precede a noun with *-men* is due to semantic, rather than a syntactic, incompatibility. Yang (2005) also addresses the fact that the plural element *xie* frequently co-occurs with *-men*. She claims that when D is filled with a demonstrative and movement to D is not triggered, then *-men* does not move through Num and therefore is unable to instantiate the plural. In order to save the structure, *xie* is inserted to express the plural feature. One issue with that account is that *xie* is not obligatory between a demonstrative and N-*men*. It is permissible, and in many instances preferred, but not necessary[6].

An advantage that Yang (2005)'s analysis has over Li (1999), is accounting for sentences like (7). She claims that the nominal is not a single DP, but an appositive expression. In this way, it is much more straightforward why pronoun-*men* can precede a quantity expression. Li (1999) could possible derive a [pronoun-men+numeral+CL] phrase, but given that pronouns are assumed to merge in D, there would be no means of deriving a [pronoun-men+demonstrative+numeral+CL] expression.

(7) wo qing [DP ta-men] [DP na san ge (haizi)] chifan
I invite he-MEN that three CL (child) eat
I invited them three (children) for a meal.

[6]My own consultants do accept and often prefer a demonstrative with *xie* over one without when co-occurring with a *-men* marked noun. However, it should be noted that some have dispreferred *xie* in these contexts, describing it as redundant if *-men* is there.

Yang also notes that one of the problems with Li (1999) is that there is nothing to prevent the formation of the ungrammatical (8), if *-men* can simply attach to the closest element; the Pl could surface on the numeral vie specifier-head agreement. It is true that neither Li (1999) not Huang et al. (2009) propose any particular features for *-men* to restrict it from affixing to numerals. However, they do mention that it specifically attaches to nominal elements, meaning pronouns, proper names, or common nouns, seemingly assuming that numerals are not possible. It seems the problem is not that their analysis explicitly predicts (8) being possible, but that it fails to adequately expound the precise mechanisms that prevent it.

(8) *san-men ge xuesheng
three-MEN CL student

-*men* as an associative plural

Jiang (2017a) agrees with Li (1999) that *-men* is a plural morpheme, but unlike Yang (2005) proposes that *-men* realises the head in an associative plural phrase (AssocPlP) in order to account for the co-occurrence of classifiers and numerals with N-*men*. She also points out that group or collective classifiers are not strictly the only classifiers that can co-occur with *-men*. An individual classifier can appear with N-*men* when the preceding numeral is approxiate, as in (9) and (10).

(9) zai shi ji ge tongxue-men de qianhuhouyong
at ten a.few/how.many Cl classmate-MEN DE have.a.retinue.before.and.behind
xia, Yan Yuhong zou le chiqu
Yan Yuhong walk ASP out
'With ten-odd classmates crowding around, Yan Yuhong walked out.'

(10) jijian-jiaolian Liu Yuling zhengzai zhidao qishi duo ge
fencing-instructor Liu Yuling PROG guide seventy many/which Cl
xuesheng-men lianxi
student-MEN practice

'The fencing intsructor Liu Yuling is giving seventy-some students directions to practice fencing.'

(11) ruguo keyi gei wo xuan, wo hai shi xiang hui dao guoqu,
if can give 1.sg choose 1.sg still be want return arrive past
ji bai ge tongshi-men yiqi zuo-hua, te you
a.few/how.many hundred Cl colleague-MEN together make-painting very have
ganjue
feeling
'If I could choose, I still would like to go back to the past, painting with several-hundred colleagues; that really feels good.' [(BLCU Corpus, from Yangcheng Evening News)]

This demonstrates that the individual classifier is not prohibited from appearing with *-men*. The morphemes *ji* and *duo* here are modifiers of the numeral called 'quantitative determinatives' that are used to express relative quantities, (Chao, 1968; Lü et al., 1999). The [Numeral-duo/ji] represent a range of numbers with an upper and lower bound. Jiang notes that these types of [Num-Approx.-Cl-N-men] phrases, like N-*men* more generally, still cannot appear in existential constructions and get a unique definite interpretation. She mentions nearly all of the facts I did above, that N-*men* can appear with certain uses of *you*, that [N-*men*-Num-Cl] is an appositive construction and that it can receive a generic interpretation, but not a kind-interpretation. Based on this she proposes that *-men* is an associative plural. Unlike English *-s* which in *Johns* can only refer to multiples people named John and not a group associated with John, MC *-men* in *XiaoQiang-men* has a grouping effect. For theses reasons she proposes an associative plural projection, AssPlP which projects between the ClP and the NP. The head of this phrase indicates plurality, group, and human via te features [+pl], [group], and [+human].

6.2.2 *-Men* as a collective marker

Traditionally, *-men* was thought of as a collective marker. Iljic (1994, 2001b,a, 2005) advocates for this view. He notes that while *-men* is obligatory on pronouns, it is optional in nearly all other contexts. One notable context in which it can nearly be considered obligatory with nouns is in allocution, (12). According to Iljic, this suggests that "the boundary between the obligatory and optional use of *-men* does not coincide exactly with the division pronoun/noun" (p.79).

(12) pengyou-men!
friend-MEN
'[Dear] friends!'

The third person pronoun *ta* in spoken MC does not encode a distinction between masculine, feminine, or neuter; animate or inanimate[7]. In spite of this, Iljic notes that *-men* is not compatible with pronouns whose antecedent is inanimate, (13).

(13) zhe-xie cai wo chi-bu-liao, ni ba ta chi ba!
this-XIE dish I eat-NEG-finish, you BA it eat BA.PRT
I can't finish these dishes, you eat them!

Based primarily on the restriction of *-men* to human nouns and its optionality on human nouns, Iljic argues that *-men* is a personal collective. In his view the incompatibility between a [numeral+CL] quantity expression with *-men* is rooted in their conflicting functions, considering that quantity expression counts individuals and a collective marker takes individuals and forms a group. This is supported by the observation that there is not really a structural prohibition on the co-occurrence of N-*men* and a classifier, as long as the function of that classifier is also group forming, rather than individuating, (14)

[7]There are different forms for masculine, feminine, and neuter in writing in modern Mandarin, but it arguable whether or not this distinction holds a reality in the mental grammar of speakers. It is variable, at best (Dong et al., 2015; Gallant and Sluchinski, 2023; Kansa, 2024; Qiu et al., 2012)

and (15). Significantly, group classifiers like this are only compatible with *-men* when the numeral is *yi* 'one'. If one were to use a higher numeral, to count groups, then *-men* would no longer be appropriate, (16).

(14) Feng Dagou he yi qun xiao haizi-men...
Feng Dagou and one MW.group little child-MEN
Feng Dagou and the little children (in a group) (Xing, 1960, 1965)

(15) zhe qun haizi(-men)
this CL.group child-MEN
this group of children (Yu, 1957)

(16) san qun haizi(*-men)
three CL.group child-MEN

Another of his arguments for the collective nature of *-men* is the fact that it can appear on noun-noun compounds, (17), and on the second conjunct of a coordinated noun phrase with a null coordinator, (18). The interpretation of *-men* in these compound/conjuncts spreads over both members, so (18) is not 'one married lady and more than one young lady', it is 'a group of married ladies and young ladies.

(17) fufu-men zhengzai zheyang sui laodao-zhe chuqi,
husband.wife-MEN just so although nag-ZHE.ASP vent.anger,
laomazi najin yi feng xin lai
older.female.servant take.in one CL letter come
'Just as the couple (husband and wife) were nagging [each other] and venting their anger, the maidservant brought in a letter.' (Shu, 1988)

(18) ni-men si wei taitai xiaojie-men
you-MEN four CL married.lady young.lady-MEN

'you four, [married] ladies and young [unmarried] ladies' (She, 1979)

Particularly of interest is how that collectivity is applied in (55) versus in (19) and (20). In (19), *-men* is affixed to the proper name *Mamian*, but also applies to the previous proper name *Niutou*; and does not apply to *Yanwang*. Essentially, *-men* is interpreted as collectivising the entire coordinated complex [*Niutou Mamian*]*-men* [8]. When a single proper name is suffixed with *-men*, he claims, the interpretation is 'the named person and others', but when more than one proper name is juxtaposed, with *-men* on the final one, then the interpretation is 'the named individuals acting as a cohort'. Moreover, this specific use of *-men* exists not only in modern Mandarin, but is also attested as far back as Southern Song (1127-1279).

(19) Yanwang yu Niutou Mamian-men
King.of.hell and Ox.head Horse.face-MEN
'The King of Hell and [his associates] Ox-head and Horse-face' (She, 1979)

(20) Xiao Cui yu Sun Qi-men ye kanguan-le. Ta-men lia...
Xiao Cui and Sun Qi-MEN also see.accustomed-ASP he-MEN two
'Xiao Cui and Sun Qi have become accustomed to seeing them. Them two...'
(She, 1979)

In addition to the core meaning of group formation , he also notes that N-*men* frequently, though not necessarily, carries an implication of familiarity, affection, or sympathy. Kaden (1964) observes that N-*men* rarely appears in legal texts on marriage or labour law, even though theses deal with human beings, but frequently appears in children's literature and media and other contexts that carry a warm or affectionate tone.

[8] *Niutou* 'Ox-head' and *Mamian* 'Horse-face' are mythological guardians of *Diyu* 'the underworld' and messengers of the king of hell. They typically appear together.

(21) taiyang zai re, ye re-bu-guo zhanshi-men de xin qu
sun again hot, also hot-NEG-pass soldier-MEN heart go
'However hot the sun may be, it cannot be hotter than the hearts of [our dear] soldiers. (XHC, 1977)

Such interpretations are highly context dependent and even certainly do not prevent *-men* from appearing in less positive contexts. Iljic (1994, 2005) are descriptive works which argue strongly for the personal collective meaning of *-men*. The most interesting element, for the purposes of this thesis, is that he presents a considerable amount and variety of data that is not addressed in the literature on *-men* as a number marker and which presents a challenge to those formal analyses. He also notes that (22) is acceptable and suggests that perhaps a predicate noun with *-men* is acceptable with a sense of contrast.

(22) wo-men shi xiansheng-men, ni-men shi xuesheng-men
I-MEN be teacher-MEN, you-MEN be student-MEN
We are the teachers, you are the students. (Iljic (2005) quoting Kaden (1964))

And finally, Iljic notes that N-*men* is acceptable with the possessive and/or existential *you*.

(23) zhe jia you ge-menr san ge
this family have brother-MEN three CL
'In this family, they are three brothers.' (Iljic (2005) quoting Zhang and Sang (1986))

I would like to note however, that in the example in (23), while the English translation is existential, the Mandarin is possessive.

6.2.3 *-Men* as a modifier, not an instantiation of number

All of the previous analyses of we have seen have assumed that *-men* is either an instantiation of number or a plural element within the features imparted to the nominal root in little *n*. However, other than its plurality *-men* has seems to have little in common with typical number morphology. In this section, I will present the argument made made in Kim and Meng (2021), which is based primarily on Wiltschko (2008).

Obligatory vs optional plural

The use of *-men* is entirely optional. A bare noun is number neutral and, in context, may be interpreted as singular, plural, generic, or a kind. The contrast between a *-men*-marked noun and an unmarked one is not that of plural versus singular. The noun with *-men* must be interpreted as plural, but the one without it may also be. As noted above, the choice to use *-men* may carry an associative or collective meaning, but this is not always the case. There are instances in which the use of an N-*men* gives the impression of familiarity or affection. Equally, it may simply express plurality, in the sense of ruling out atomic individuals and selecting only non-atomic individuals. Additionally, the merger of a noun with plural, in English, creates a new linguistic object. Determiners c-select for this number marked object. No such categorial properties can be observed for *-men*. An N-*men* may be selected by a classifier, just as a bare noun can be. There is no difference in category for an N-*men*.

Those instances in which *-men* is extremely common or described as nearly obligatory are, in the first place, highly variable between speakers and/or dialects[9], and second, not structurally required and more a discourse related requirement. The absence of *-men* in those contexts is never ungrammatical but may be infelicitous.

[9]Regarding the differences in accepted and unaccepted data Jiang (2017a) included an experiment showing that Mandarin speakers accept *-men* in nearly every context that was tested. Those with a narrower range of contexts in which they accepted *-men* were bilingual speakers of other Chinese languages. Further study is required on the exact behaviour of *-men* for speakers of various MC dialects and in multilingual communities.

Agreement

In languages with obligatory plural marking, the presence of plurality also triggers plural agreement. In some languages, such as Russian, this will be expressed on an adjectives that modify the noun, as well as on the verb. In English, plural agreement is expressed on demonstratives. The presence of *-men* does not appear to trigger agreement. Of course, in MC there are no indications of number available for adjectives of verbs, but there is a plural demonstrative. The plural element *xie* follows a demonstrative to form a plural demonstrative, such as *zhe-xie* 'these' or follows an unstressed *yi* 'one', to form *yi-xie* 'some'. Kim and Meng (2021) claim that no agreement is triggered in MC. I do agree that there is not obligatory agreement, but there appears to be optional agreement.

(24) ?na xuesheng-men lai le
that student-MEN arrive LE
'those students arrived.'

(25) na-xie xuesheng-men lai le
that-XIE student-MEN arrive LE
'those students arrived.'

(26) Liu laoshi he yi qun haizi-men....
Liu teacher and one MW.group child-MEN
'Teacher Liu and a group of children...'

Li (1999) claims that N-*men* may not co-occur with a demonstrative unless that demonstrative appears with *xie*. This would appear to be, then, plural agreement. However, I must note that while some of my own informants had the same judgements, others did not. Some claimed that the presence of both *xie* and *-men* was "redundant" and only one or the other was required to express plurality. Like so many issues connected to *-men*, there may be dialectal differences at play here. But as it stands, the strongest statement that can be made is that *-men* only optionally triggers plural agreement.

6.2.4 *-Men* as a DP modifier

Assuming that there is no plural agreement and *-men* is fully optional, Kim and Meng (2021) continues by claiming that *-men* is not a functional head, but rather an adjunct. Kim and Meng do not mention this but for completeness I would like to continue the comparison to Wiltschko (2008). She makes the point that plural inflection in English cannot occur within a compound or within derivational morphology, but Halkomelem plural marking may. This formed part of her argument for Halkomelem plural being a root modifier, as such compounds are formed via root merger, (Zhang, 2007). Mandarin however patterns like English in this regard. *-Men* cannot occur inside a nominal compound, as in (27).

(27) a. fu.mu
father.mother
'parent(s)'

b. fu.mu-men
father.mother-MEN
(the) parents

c. *fu-MEN.mu
father-MEN.mother

It is also not possible for *-men* to appear inside derivational morphology, as in (28).

(28) a. ge.shou
song.hand
'singer'

b. ge.shou-men

song.hand-MEN

'(the) singers'

c. *ge-MEN.shou

song-MEN.hand

This would indicate that *-men* does not attach at the root, as the plural adjunct of Halkomelem does.

The above analyses incorporate much of the data that I presented earlier and present compelling arguments for why *-men* cannot be an ordinary instantiation of number. However, they are not adequate. My purpose here is to demonstrate that even these analyses are still missing some crucial empirical facts about the distribution of *-men* that make it impossible for it to be a realisation of *n*. And as for the associative nature of *-men*, I have already demonstrated that this interpretation is highly context dependent and in many instances N-*men* gets a straightforward plural interpretation.

Kim and Zheng (2021) claim, based entirely on the observations mentioned earlier in this section based on Wiltschko (2008), namely the optionality of *-men*, the fact that there is no semantic opposition in the interpretation of the absence of *-men*, *-men* does not trigger plural agreement, and the addition of *-men* to the noun does not form a new syntactic object because modifiers lack categorial properties. There are no notable unique data is presented. They suggest *-men* is an adjunct of the DP in order to account for its definite interpretation. They claim it is left adjoined, like other modifiers in MC. Pronouns are generated in D and definite nouns move to D, and in that position can be modified by *-men*. *-Men* instantiates both a [human] feature and a [plural] feature. They claim the third person pronoun *ta-men* is thus only possible with human reference, and inanimate *ta* cannot be suffixed with *-men*. While I agree with the principle claim that *-men* is a modifying plural adjunct, my analysis shares little other similarities with theirs and I have already presented and will reiterate below some empirical counterpoints.

I presented earlier in this chapter some examples of *-men* appearing on the second conjunct (or third in larger complexes) of coordinated nominals. Here I will examine the types of coordinated phrases and their interpretations re plurality. First, here is a coordinated noun phrase in which the plural morpheme appears on the second conjunct and is interpreted only on the second conjunct.

(29) xiaoji he xiaoya-men zhongyu huandiao le maorongrong de jiu yifu
chick and duckling-MEN finally change ASP furry DE old clothes
The chick and ducklings finally changed their old furry clothes.

The example in (29) alone is not particularly challenging for the earlier analyses. For those who claim *-men* is in D, the two DPs could be coordinated, one containing *-men* and the other without. In this second case *-men* appears on the second conjunct, but both conjuncts are interpreted as plural. That is to say, the plurality of *-men* has distributed to both members of the coordinated complex.

(30) funü xiao haizi-men
woman small child-MEN
'the women and children' (Iljic (2005) quoting Kaden (1964))

(31) xiansheng gen xuesheng-men
teacher with student-MEN
'the teachers and students' (Iljic (2005) quoting Chao (1968))

(32) ta gaosu le xuesheng laoshi (he) jiazhang-men ...
(s)he tell LE student teacher (and) parent-MEN
(S)he told the students, teachers, and parents...

One might suggest that the first instance of *-men*in these sentences has undergone some form of deletion, however this does not seem possible. While it is true in English that certain stems and (typically) independent word derived affixes can be elided, *-men* is not derived from an independent word and additionally this kind of word-part deletion in MC seems to only occur with compounds, (Chaves, 2008). Rather this seems to suggest that *-men* is phrasal and can adjoin to the coordinated complex. The attachment of *-men* to some larger phrase would account for its interpretation on both coordinated elements in the same way that 'a big house and car' can equally mean 'a big house and ordinary car', in which 'big' is only modifying 'house' or 'big' could attach higher in the complex and thus modify 'house and car' together to mean 'a big house and a big car'. The evidence above shows that *-men* modifies nouns in much the same way except rather than ascribing a physical property to the noun, it picks out pluralities from its denotation.

Thirdly, *-men* again appears on on the second conjunct, but rather than a plural interpretation of suffixed name, or an associative/collective interpretation of that name, the reading that surfaces is that the two named individuals together form a group or collective.

(33) Yanwang yu Niutou Mamian-men
King.of.hell and Ox.head Horse.face-MEN
'The King of Hell and [his associates] Ox-head and Horse-face' (She, 1979)

6.2 Issues with the analyses

6.2.1 *-Men* is not a collective marker

As we saw earlier, many traditional analyses, and some modern ones, propose that *-men* is a collective marker (Iljic, 1994). And while it does appear that the use of *-men* in certain contexts indicates a group reading of the names individuals, it wouldn't be appropriate to restrict *-men* to such meanings. It is simply compatible with collectivity.

Consider the following examples. In (34) we see N-*men* as the subject of collective predicates, 'form a circle' and 'surround'. This is not unexpected, if *-men* is a collective marker. What is a challenge to this view are (35) and (36). The mixed predicate 'write letters to each other' is compatible with *-men*, and significantly can receive both a distributive and collective interpretation. The presence of *-men* does not force either interpretation, rather the larger context influences which reading (35) receives. And finally, in (36), 'smile' is a distributive predicate and is entirely compatible with *-men*.

(34) yingmi-men wei shang lai yao ta qianming liumian
fan-MEN surround approach demand him autograph souvenir
Collective predicate

'The fans surrounded him to demand his autograph.'

(35) lianren-men huxiang xie xin
lover-MEN each-other write letter
Mixed predicate

'The lovers write letters to each other.'

(36) haizi-men zai weixiao
child-MEN ZAI.ASP smile
Distributive predicate

'The children are smiling.'

N-*men* can also co-occur with a distributive element, *ge*, meaning 'each, individually, every'. Occurring in such environments would not be predicted for a collective marker.

(37) wei fangzhi xuesheng zuobi, laoshi-men ge chu qizhao
in.order prevent student cheat, teacher-MEN each give unusual.trick

In order to prevent students from cheating, the teachers each have [their own] unique tricks.

Let us examine again a mixed predicate such as 'lift a box', in (38). *-Men* in (38-a) does not encourage a collective reading; both the collective and distributive interpretations are possible. (38-b) includes *yiqi*, 'together' to force a collective reading. (38-c) has *dou* 'all', which is argued to be a distributive element. (38-d) has *meigeren*, which means 'everyone' and is made up of *mei* 'every', followed by a classifier *ge* and *ren* 'person' as well as *fenbie* 'individually', to force a distributive reading. Each and every one of these contexts are compatible with *-men* Just like above, it is the larger context that influences the interpretation of the predicate as collective or distributive, not *-men* itself.

(38) a. ta-men juqi da xiangzi
he-MEN lift big box
'They lifted a big box.'
Both collective and distributive readings are possible.

b. ta-men yiqi juqi da xiangzi
he-MEN together lift big box
'They lifted a big box together.'

c. ta-men dou juqi da xiangzi
he-MEN all lift big box
'They all lifted a big box.'

d. ta-men meigeren fenbie juqi da xiangzi
he-MEN everyone individually lift big box
'They each lifted a big box individually.'

These examples suggest that N-*men* receives the same interpretations and occurs in the same constructions, as an ordinary plural pronoun.

6.2.7 -*Men* is not a number marker

It has been remarked upon many times before that the use of -*men* is highly restricted. For some this has formed the principle basis for arguing that -*men* is not a plural marker while for others that is no impediment, (Iljic, 2005; Kurafuji, 2004; Nakanishi and Tomioka, 2004; Niu, 2015; Li, 1999; Huang et al., 2009). It certainly seems plausible that a number distinction exists in Mandarin that is only explicitly expressed on nouns at the highest end of the animacy hierarchy: humans. However, such analyses were not able to account for the full breadth of -*men*'s features. The structural restrictions on -*men* are not as rigid as has been claimed. It can co-occur with classifiers, in a limited way, and an N-*men* may be modified in a variety of ways. Turning away from the issue of where -*men* may appear for a moment, consider where, if ever, it must appear. It is obligatory on plural pronouns, but aside from that an N-*men* is almost never necessary, at least not from a structural point of view, it may be necessary from a discourse point of view. It is far from the only way to indicate number in Mandarin; there are *xie*, *yixie*, *youxie*, 'some', as well as explicit [Numeral+Cl] quantity expressions to indicate plurality on indefinite expressions and *zhe/na-xie*, 'some', for definite expressions. Not to mention a variety of quantifiers, such as *henduo, daduo, dabufen*, 'many, most, majority', and many more.

6.3 -*Men* : a split-plural based analysis

I will analyse -*men* as a lexical plural, which is in *n*, but that is licensed by specific elements in the numeral position. The unique properties of -*men*, that it cannot appear with most quantity expressions but is not ruled out with classifiers, that it is optional, and that MC nouns are on their own number neutral suggests that -*men* is not in Num.

It is not obligatorily definite and therefore is not associated with D or the DP. *-Men* is an idiosyncratic plural that needs to be licensed by an appropriate dominating position, specifically certain elements that can occur in the usual position of numerals. I will demonstrate that this accounts for the most common occurrence of *-men* on otherwise bare nouns, its ability of to occur with classifiers, while still ruling out its inability to occur with [Numeral-Cl] quantity expression. I claim that this analysis is compatible with a unified analysis for [pronoun-*men*] and N-*men* .

Within a split-plurality approach, the little *n* head to associated with associative and collective plurals and idiosyncratic plurals (Mathieu). Even though *-men* is not an instantiation of the *n*, it still seems to be associated with it. Selection: *-men* attaches to human nouns, the noun would inherently have the feature [human], it gets its other features, including its category, in *n*. Kim and Zheng (2021) claim *-men* adjoins to DP in order in account for it obligatory definiteness. However, I showed earlier that while an N-*men* is typically definite, it is too strong a statement to claim it is always definite. It is possible in indefinite contexts. Similarly, its co-occurrence with classifiers is not usual, but it is possible. And while it is most likely to appear with a group classifier, as Jiang (2017a) pointed out, it is possible with an individual classifier as long as the numeral is approximate. I follow Wiltschko (1998) in regarding pronouns as the spell-out of feature bundles. *-Men* carries a [plural] feature, and it is the only morpheme in MC that can attach to nominal elements with that [feature]. Classical Chinese did not make use of any plural inflection but it has evolved over several thousand years, initially only attaching to personal pronouns only (Norman, 1988). The pluralisation of pronouns has over time, become standard and grammaticalised. The use of *-men* on common nouns is a relatively more recent development. Which I would posit evolved from the plural pronoun.

6.3.1 A non-unified analysis for pronouns and proper names

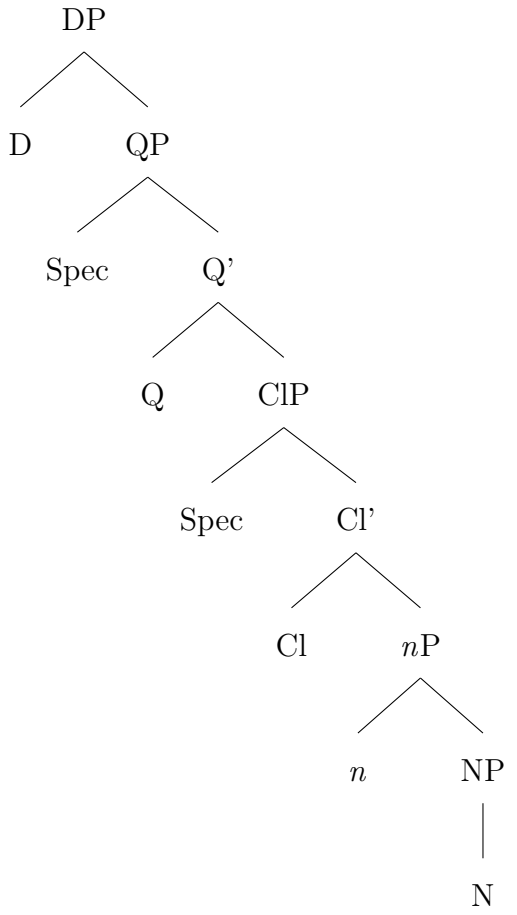
Classical Chinese did not make use of any plural inflection but it has evolved over several thousand years, initially by attaching to personal pronouns only (Norman, 1988). The

pluralisation of pronouns has over time, become standard and grammaticalised. The use of *-men* on common nouns is a relatively more recent development.

6.3.2 Syntax of *-men*

-Men is in the little *n*P, as a lexical plural. The noun undergoes obligatory N-to-*n* movement, where it combines with *-men* . When the noun is bare, then the N-*men* will move though Div/ClP and Q to D. This movement happens just as it would for any other definite expression, not due to the presence of *-men*.

(39)



This is because *-men* must be licensed by an element in the specifier of the QP. The presence of YI or an approximate numeral, which is a complex phrase, or an empty SpecQP can license *-men*, however ordinary simple numerals may not. In this way, N-*men*

most typically appears on otherwise bare nouns, but is also possible with a classifier specifically when that classifier is preceded by an approximate number of the numeral 'one', and is correctly ruled out in individual counting contexts with a simple numeral and classifier.

Lets look at how this applies to some of the specific examples we saw earlier. We can make the correct predictions for (40), (41), (42). In (40), the empty numeral specifier licenses *-men* modification, it combines with the noun, and then is free to move to D, as a definite expression. (41) is ruled out because a numeral cannot license *-men*. And for completeness, is also ruled out since not only does the numeral not license *-men*, but also as a plural in *n*, *-men* does not have any interpretable or uninterpretable definite feature motivating it to move to D; *-men*'s only feature is [+plural].

(40) xuesheng-men
student-MEN
the students

(41) *san ge xuesheng-men
three CL student-MEN

(42) *san-men ge xuesheng
three-MEN CL student

The Num head analysis of *-men* would have no means of accounting for (43), but since in my system *-men* is adjacent to the noun, the presence of a classifier does not prevent the noun combining with *-men*. The overt non-numeral 'one', which in the specifier of the QP, or optionally the null YI_{pro} when the determiner is pronounced without a numeral, can license *-men* . Similarly, the approximate numeral phrase in (45) is also able to license *-men*. However, the numeral *san* 'three' in (44) is not able to license *-men*, so it is correctly ruled out.

(43) zhe(yi) qun haizi(-men)
this(one) CL.group child-MEN
this group of children

(44) san qun haizi(*-men)
three CL.group child-MEN

(45) zai shi ji ge tongxue-men de
at ten a.few/how.many Cl classmate-MEN DE
qianhuhouyong xia, Yan Yuhong zou le chiqu
have.a.retinue.before.and.behind Yan Yuhong walk ASP out
'With ten-odd classmates crowding around, Yan Yuhong walked out.'

Both (46) and (47) involve a *-men*-marked noun coordinated with another noun. In (46), both nouns are interpreted as plural and in (47) only the noun with *-men* is plural. This can be accounted for via deletion, in the example where both nouns are interpreted as plural.

(46) ta gaosu le xuesheng laoshi (he) jiazhang-men ...
(s)he tell LE student teacher (and) parent-MEN
(S)he told the students, teachers, and parents...

(47) xiaoji he xiaoya-men zhongyu huandiao le maorongrong de jiu yifu
chick and duckling-MEN finally change ASP furry DE old clothes
The chick and ducklings finally changed their old furry clothes.

6.4 Chapter summary

Contrary to Li (1999); Huang et al. (2009); Niu (2015); Jiang (2017a) I argue that *-men* is not an instantiation of plural in Num nor its own AssocPlP projection. I agree in part with Yang (2005) that *-men* is in the little *n* head, but argue against the rest of her analysis that N-*men* then moves to D, and otherwise is only compatible with group classifiers. I argue that *-men* is a lexical plural in *n*. It is not obligatorily definite, not disallowed with classifiers, therefore I argue N-*men* does not have to move to D; though it may in the same way definite bare nouns potentially move to D. Instead *-men* is licensed by approximate numerals, non-numeral *yi* 'one', and an empty numeral position. A simple numeral does not license *-men*. In this way the contexts in which *-men* nay appear and may not appear are correctly predicted. The meaning of *-men* is plural, and any additionally meaning, such as collective or associative, depend on the element *-men* is modifying (proper names) or the discourse context.

Chapter 7

Summary and remaining issues

7.1 Main proposal

-*Men* on common nouns is a lexical plural within the noun phrase. It is a lexical plural in little n licensed by an element in the QP/#P. Only non-numeral YI, complex approximate numerals, or an empty numeral position may licence -*men*. An ordinary numeral cannot license -*men*. It is most common on bare nouns, but can appear with both sortal and non-sortal classifiers. This would predict the acceptability of [N-men], [YI-xie/CL-men], and [Approx.Numeral-CL-N-men] while still correctly ruling out [Numeral (>1)-CL-N-men]. When a coordinated complex includes two plural nominals, -*men* may be elided. Whether both elements are interpreted as plural or not depends on where the -*men* modifier adjoins, on the larger NP of the coordinated complex or on the NP of only one conjunct.

Pronouns with -*men* on the other hand, do not occur in the same environments as N-*men* and do not get as many different interpretations. A lexical plural is able to account for all the behaviours of -*men* on common nouns, however not only is it not necessary for pronouns, it would fails to capture the behaviour of Pronoun-*men*. A unified analysis of both occurrences of -*men* is not possible. Pronoun-*men* is an ordinary plural.

7.2 Problems solved

One of the issues pointed out at the start was that the existing description of the distribution and behaviour of -*men* are very contradictory and any one analysis is impaired from the start by only accounting for a portion of the relevant features of -*men*. I believe this thesis has come much closer to describing the range of uses of -*men*. Attempts at a unified analysis of N-*men* and Pronoun-*men* are understandable, but ultimately one or the other use is not able to fit.

7.3 Remaining issues

A more detailed and in depth account of the pragmatics of -*men* is required.

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