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The Diachronic Development and Synchronic Distribution of Minimizers in Mandarin Chinese

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The Diachronic Development and Synchronic Distribution of Minimizers in Mandarin Chinese

By

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Abstract

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This study deals with the historical development of Mandarin minimizers through examining their synchronic distribution. The main source of Mandarin minimizers, a distinct class of negative polarity items (NPIs), is 'one'-phrases which are composed of the numeral 'one', a unit word, and a noun. The development of 'one'-phrases as minimizers from Old Chinese, Middle Chinese, Early Mandarin, to Modern Mandarin makes strong links among important linguistic issues such as NPI licensing, word order, numeral-classifier phrases, and focus constructions.

The diachronic development of the 'one'-phrases as minimizers is analyzed from a constructional approach. The present study shows that the unit of these diachronic changes is the whole 'one'-phrase construction instead of merely the lexical items. This constructional approach reflects both compositionality and non-compositionality of Mandarin 'one'-phrases as minimizers at different stages of development. Each component of the 'one'-phrases contributes its semantics to the whole construction, while the syntactic, semantic, and pragmatic relations among the three elements have changed over time. The various functions of the 'one'-phrases, including as a numeral phrase, a modifier phrase, and a referential phrase, are the result of 'one'-phrases being associated with extant constructions in Mandarin Chinese, forming a constructional network. The hierarchical network accounts for how 'one'-phrases have developed their polysemous model.

Results of corpus/text analyses show that, in general, Mandarin minimizers have gradually developed the tendency of appearing in a preverbal object position. However, when Mandarin existential construction is involved, they tend to stay in the postverbal position. I argue that the distribution of minimizers has been shaped by the information structure of VO and OV word orders. The skewed distribution of minimizers in different construals reflects how focus is structured in Mandarin. The Mandarin OV construction has an obligatory preverbal object focus, while the existential construction profiles the postverbal object. When 'one'-phrases under negation appear in the OV construction, they must be interpreted as minimizers. This combination guarantees a scalar reading, which provides the environment for the additive particle 也 *yě* and the exhaustive operator 都 *dōu* to develop their scalar interpretation. It also accounts for why minimizers in the Modern Mandarin OV construction require the accompanying scalar particles.

The requirement of focus-sensitive scalar particles for ‘one’-phrases as minimizers is also observed in other numeral classifier languages such as Japanese, Korean, and Malay. A typological comparison of these languages shows that focus is a crucial condition for licensing ‘one’-phrases as minimizers. Moreover, the ordering of the components of ‘one’-phrases combined with the position of the focus-sensitive particles results in different scopes of focus-imposed minimizers. The difference in scope determines how scalar inferences of the minimizer in question are structured. The inferences from minimizers can be construed by either a type or a quantity contrast. This analysis shows that the scalar particles associated with minimizers in these languages come from the same source, an additive particle, which is associated with alternatives for scalar inferences.

To summarize, the constructional account employed in this study provides a quantitative treatment of how language change originates in language use with particular attention paid to numeral phrases, word order, focus, and negation. The development of ‘one’-phrases as minimizers exemplifies the incremental process of diachronic changes within a construction network. The analysis of ‘one’-phrases as minimizers provides an answer to why they are crosslinguistically recognized as strong NPIs by integrating focal construals, referentiality of numeral phrases, and scalarity.

Contents

List of Abbreviations

3	third person
ACC	accusative
ADJ	adjective
ADV	adverb
AFF	affix
ANT	anteriority
ASP	aspect
CAT	lexical category
CLF	classifier
CONJ	conjunction
CONN	connective
COP	copula
CT	contrastive topic
DECL	declarative
DIM	diminutive
DUR	durative
EMP	emphatic
EXP	experiential aspect marker
EXT	existential predicate
FE	frame element
FOC	focus
FUT	future
GEN	genitive
gf	grammatical function
IMP	imperative
INDIC	indicative
INS	instrumental
LFORM	lexical form
LOC	locative
MOD	modal
MW	measure word
NEG	negation, negative
NOM	nominative
NUM	numeral
OBJ	object
PASS	passive
PFV	perfective
PG	pragmatics
PH	phonology
PHON	phonological
PL	plural
POSS	possessive
pr	pragmatic relation
PRAG	pragmatic
PRED	predicate
PRF	perfect
PST	past
PTC	particle
Q	question particle/ marker
QUANT	quantifier
RED	reduplicate
REL	Relative
RES	resultative
SBJ	subject
SG	singular
SM	semantics
SY	syntax
TOP	topic
UW	unit word
VAL	valence

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Chapter 1

Introduction

This study deals with synchronic variation through a diachronic lens. Mismatches between syntactic and semantic properties are usually rooted in diachronic development. This study addresses this layer of synchronic-diachronic association through the analysis of how numeral phrases referring to a small quantity have developed as polarity sensitive items in Mandarin Chinese. The analysis will show how the meanings of a polysemous construal gain more saliency and full distinction by being associated with semantically and syntactically relevant constructions. In order to capture the tendencies of language change, a longitudinal corpus study is conducted to examine how constructions have developed internally and how that development has been conditioned by linguistic factors external to the constructions in question.

The linguistic phenomenon concerned in the diachronic study is the development of Mandarin Chinese 'one'-phrases, which have three components: the numeral 'one', the unit word, and a noun. 'One'-phrases have a special status in East Asian numeral classifier languages, such as Mandarin Chinese, Japanese, and Korean due to their multiple functions. Although the basic function of 'one'-phrases is to count or to measure, they are often recruited for a wider range of purposes, such as to serve as an indefinite referential expression, as an attenuating downtoner, and as a polarity sensitive item for pragmatic enhancement. The concept of 'one' can be shaped into different functions when it is profiled against different scale settings. Among these functions, I will particularly focus on the function of polarity items because 'one'-phrases as polarity items exhibit various kinds of distributional variation. The distribution of 'one'-phrases as polarity items is conditioned by multiple related factors, such as specificity, quantification, scalarity, negation, and focus. The study aims to incorporate these factors from a diachronic perspective with an account of how the synchronic variation of 'one'-phrases reflects a series of syntactic and semantic changes in the history of Chinese.

The following subsections will introduce the linguistic issues and phenomena concerned in this study. When 'one'-phrases are used as negative polarity items (NPIs), they belong to the category of minimizers. The sanction of NPIs has received considerable attention from linguists. The issues regarding the licensing conditions and the properties of minimizers is summarized in Section 1.1. Section 1.2 offers an overview of how numeral phrases are formed in numeral classifier languages, and how 'one'-phrases are used for a wide array of functions. 'One'-phrases as a subcategory of numeral phrases are the main source of minimizers in numeral classifier languages.

The analysis of the diachronic development of 'one'-phrases as polarity items in this study is based on a constructional approach. The constructional analysis of incremental changes is discussed in Section 1.3. Section 1.4 introduces Mandarin word order patterns and their influence on the interpretations of 'one'-phrases. Section 1.5 provides a summary of the topics covered in each chapter and of the research questions regarding the 'one'-phrases as minimizers.

1.1 Licensing of NPIs and Types of NPIs

Polarity phenomena, such as positive polarity items (PPIs) and negative polarity items (NPIs), have been cross-linguistically observed. According to Haspelmath (1997)'s typological survey of indefinites, NPIs are common in languages. They are famous for their exclusion from positive assertions with simple past (Giannaidou 2011), as exemplified by English *any*, French *rien* 'anything' (< Latin *rem* 'thing'), and Greek *tipota* 'anything'. The examples in (1)-(3) show that these elements cause ungrammaticality in affirmative environments but go well with negation.

(1) English *any*
a. He didn't eat any oranges.
b. *He ate any oranges.

(2) French *rien* 'anything'
Je ne vois rien
I NEG see anything
'I don't see anything'

(3) Greek *tipota* 'anything' [from Giannaidou 2011: 1664]
a. dhen idhe tipota o Janis
NEG saw anything the John
'John didn't see anything.'

b. *idhe tipota o Janis
saw anything the John
Intended reading: 'John saw anything.'

This specific constraint has directed linguists' attention to the issue of NPI licensing. Since Klima's (1964) analysis of English negation, NPI licensing has received great attention in English in crosslinguistic studies. Studies on NPIs started with a focus on negation, since negation has been considered a typical condition required for NPIs. Therefore, NPIs are claimed to be licensed or triggered by negation (Ladusaw 1980). However, NPIs can also be licensed in other conditions, such as conditionals and questions. The issue of how to delimit a coherent category characterizing the environments has become a central one in NPI studies. The licensing requirements of NPIs arouse the debate regarding their grammatical representation and their relations to the constraints on polarity items. In the following sections, I will briefly summarize the syntactic, semantic, and pragmatic approaches to the sanction of NPIs.[1]

1.1.1 Syntactic perspectives

Syntactically, the concept of licensing is generally translated as structural constraints. This approach manifests the relation between polarity items and their licensors in a structural representation. Specifically, negation is regarded as the primary licensor, and NPIs must be within the scope of negation. An overt or covert c-command relation is often used to account for

[1] For a more elaborated and detailed overview of the licensing debates and different approaches toward polarity items, please refer to Giannakidou (2011) and Israel (2011).

the scope relation. The treatment of negation as the primary licensor in this approach captures the fact that negation is a prototypical licensor and that certain types of NPIs are legitimate only under negation. However, the assumption also implies that non-negative licensors receive less coverage in this approach.

The licensing condition is an interesting topic in generative approaches because it exhibits a strong structural dependency. In the generative framework, the licensing condition can be formulated at the level of logical form (LF), at the level of S-structure, or at both levels (Linebarger 1980, Progovac 1994, Uribe-Etxebarria 1994). Since negation is the primary licensor, non-negative conditions often resort to additional mechanisms (Baker 1970) or an overt operator (Progovac 1994). For example, the principle of Binding Theory is applied to the licensing conditions by Progovac (1994). NPIs have to be bound to negation or other functional operators in their governing category, as in (4).

(4) He **did** not say *anything*.

The null operator is posited to account for the non-negative licensing conditions in terms of the locality relations between NPIs and their licensors. Besides the narrow focus on syntactic dependency, the scope relation between NPIs and their licensors is another important topic in this approach. For instance, Linebarger (1987) proposes a scope constraint, stating that NPIs are acceptable in a sentence S if in the LF of S the NPIs are in the immediate scope of the negation operator. The scope constraint successfully explains the licensing of negation, but non-negative licensors, such as adversative predicates *doubt, be surprised*, as in (5), need a secondary mechanism. The NPI "lift a finger" in (5) is licensed although the sentence has no negator.

(5) I'd be surprised if he **lifted a finger** to help.

Hence negative implicatures are required to account for these situations. When NPIs occur in the immediate scope of negative implicature at the LF level, they are well licensed. Although the device of negative implicature may lead to some problems, such as the issue regarding how it is generated (Horn 1996), this analysis points out that structural dependency is not the whole story. Pragmatic factors should also play a role in the sanctioning of NPIs.

Syntactic approaches admittedly have their explanatory limits in non-negative licensing conditions, but they reveal the important fact that NPIs favor certain syntactic constructions.

1.1.2 Semantic perspectives

Semantic approaches originate from research into the relation between polarity sensitivity and monotonicity in Ladusaw (1980). The relation has been further developed for a variety of semantic constraints (Dowty 1994, Zwarts 1996, von Fintel 1999, Giannakidou 2002, 2006, and many others). Logical monotonicity is the basic reasoning of polarity sensitivity. Particularly, NPIs must be licensed under the scope of downward entailing (DE) operators. Entailments in neutral contexts generally go from relatively specific cases to relatively general cases, as shown in (6).

(6) a. Chris ate carrots.
→ b. Chris ate vegetables.

Negation is a typical DE operator, and therefore it runs the entailment from the more general case *vegetables* to the more specific case *carrots*. DE operators can be viewed as polarity reversers.

(7) a. Chris didn't eat vegetables.
→ b. Chris didn't eat carrots.

In other words, NPIs are acceptable only if they are in the scope of polarity-reversing expression. In this case, both negative and non-negative conditions are accommodated. Based on the principle of monotonicity, negative contexts have a hierarchy, as shown in (8), which provides a three-way distinction for different polarity contexts as an explanation for the diversity regarding the sensitivity of NPIs.

(8) Monotonicity hierarchy

Antimorphic	**Anti-additive**	**Downward entailing**
Not	if, ever	few
strong ⟶		weak

Antimorphic operators are the strongest. Sentential negation is such an example, as shown earlier in (7). The next level is anti-additive operators, which have a relatively loosely defined standard of negation. Anti-additive operators include negative quantifiers and adverbs, such as *nothing*, *never*, and *nobody*, and contexts such as questions, conditionals, comparatives and predicates like *doubt*. For example, English *never* in (9) does not allow c. to entail d.

(9) a. Mary has never seen a bear or a lion. ↔ b. Mary has never seen a bear and a lion.
c. Mary has never seen a bear and a lion. ← d. Mary has never seen a bear or a lion.

Both antimorphic and anti-additive operators are downward entailing, but not vice versa. The group of relatively weak operators includes negative expressions such as *seldom*, *rarely*, and *few*. As shown in (10), although the operator is negative in meaning, it still allows positive exceptions to this negative proposition.

(10) a. Few students take Linguistics 100 or Linguistics 300. → (← not allowed)
b. Few students take Linguistics 100 and Linguistic 300.

The hierarchy reflects the fact that different types of polarity items require different licensing conditions.

Starting from monotonicity, the concept of non-veridicality is further proposed to unify negation, non-negative licensors, and non-DE licensors as a natural class (Giannakidou 1994, Zwarts 1995). Veridicality is defined as follows: function F is veridical if Fp entails or presupposes the truth of p. The principle determines the distribution of NPIs. NPIs are allowed in nonveridical environments such as modals, disjunctions, intensionals, generics, downward entailing forms, questions, imperatives, and conditionals, but they are prohibited in veridical environments (Giannakidou 2011). Within the veridicality hypothesis, the sanction of NPIs can be licensed or rescued. NPIs are licensed at the scope of operators with the licensing property, whereas rescuing as a secondary option happens in a non-licit context due to semantic-pragmatic

reasons. This division of licensors brings up the important issue of the existence of different types of NPIs, whether strictly-defined or broadly-defined. The varied distribution also takes the lexical semantic sources of polarity, scalarity and referential deficiency into consideration (Giannakidou 2011). However, although the veridicality hypothesis covers a wider variety of contexts than monotonicity, Israel (2011) points out its restrictions. First, the hypothesis may overgenerate. For instance, English *yet* is licensed in questions, but not in nonveridical contexts such as *want*, *perhaps*. Second, nonveridicality characterizes irrealis contexts, but irrealis is defined differently in different languages. This suggests that nonveridicality is a prototype-structured category with various extensions, rather than a necessary and sufficient condition for polarity sensitivity.

1.1.3 Pragmatic perspectives

Sections 1.1.1 and 1.1.2 have shown that pragmatics plays an important role in both syntactic and semantic approaches. For example, NPIs can be licensed by conventional or conversational implicature in environments without negation (Baker 1970, Linebarger 1991). Pragmatic inferences are observed to be a determinant of polarity licensing (Krifka 1992). Polarity sensitivity is a reflection of a special interaction between the meaning of polarity items and the constructions in which they occur, and some general pragmatic rules (Krifka 1995). Specifically, Krifka (1995) models polarity items as an ordered combination <B, F, A>, where B represents contextual background, F stands for foregrounded denotation of polarity items, and A represents a group alternatives to F. From this perspective, the sensitivity of polarity items to polarity comes from the association with a set of alternatives. Crucially, the alternatives have an ordering relation. NPIs denote the least element in the ordering, whereas PPIs denote the greatest one.

The pragmatic account has many similarities with the formal Scalar Model treatment since both involve the logic of scalar reasoning. Yet their differences are substantial, as compared in Israel (2011). How the Scalar Model accounts for the polarity phenomena will be summarized in Section 1.1.4.

1.1.4 Scalar model: a cognitive perspective

Polarity items are not the only category which is sensitive to polarity contexts. Superlative constructions can also be sensitive to polarity contexts, as pointed out by Fauconnier (1975). For instance, the expression in (11) allows a universal quantification reading *Ed can solve any problem set*. The expression in (12) has a quantificational reading as *Ed cannot solve any problem set*. When the polarity of the contexts is changed, the quantificational reading disappears and the superlative sounds less informative, as in (13) and (14) respectively.

(11) Ed can solve the most difficult problem set.

(12) Ed cannot solve even the easiest problem set.

(13) Ed cannot solve the most difficult problem set.

(14) Ed can solve even the easiest problem set.

The similar pattern between polarity items and the quantificational properties of superlative constructions suggests that polarity is not limited to the sensitivity of polarity items to negation. The context with 'polarity' can be unified as a more general category. Building upon Fauconnier's scalar reasoning and Construction Grammar (Fillmore, Kay & O'Connor 1998, Kay 1997), the scalar model proposed by Israel (2011) includes two constructs—conceptual scales, which are orderings defined by contexts, and scalar models, which are a matrix of propositions supplied by different conceptual scales.

The analysis of scales can be traced to Horn (1972), where scales are conceived as ordering of linguistic expressions based on the relationship of entailments. Examples from Horn (1989) are <5,4,3,2,1> and <all, most, many, some>, where each element outranks all elements to its right. The concept of this kind of quantitative scale is viewed as a scheme which accounts for scalar implicature. This sort of scalar reasoning is a general cognitive ability (Langacker 1987). The scalar relation between *warm* and *hot*, for instance, is a reflection of the scalar property of human thermal experience. A conceptual scale is a partially ordered set of these conceptual entities, as defined in Israel (2011: 55): "a conceptual scale is an ordered pair <Q, R>, where Q is a set of conceptual structures and R is a relation which defines a partial order on the elements of Q." With respect to a scalar model, it is structured by a set of propositions ordered based on conceptual scales. In particular, the scalar model in Fillmore, Kay, and O'Conner (1988) includes a propositional function P with one or more variables which range over the ordered entities on a scale, and a set of dimensions, D, which define the set of potential arguments for the function D. Figure 1.1 (adapted from Israel 2011: 59) illustrates a two-dimensional scalar model, where elements on both axes are ordered in a way to support inferences for satisfying the propositional function Q, 'x can solve y'. The difficulty of the problem sets is ordered from the most difficult to the least difficult in order to reflect a default assumption that if a person can solve a difficult one, the person should be able to solve the less difficult ones. In a similar vein, the other dimension is ordered from the smartest to the least smart people, to represent the relation that if a less smart person can solve a certain problem, then those smarter can do this as well. Thus pragmatic inferences are defined in the scalar model. Based on the truth of the proposition p in the model, one can infer that any proposition lower than p should be true, as indicated by the arrows surrounding T. The entailments are reversed when the proposition p has the value false. As indicated by the arrows surrounding F, any proposition higher than p should be false as well.

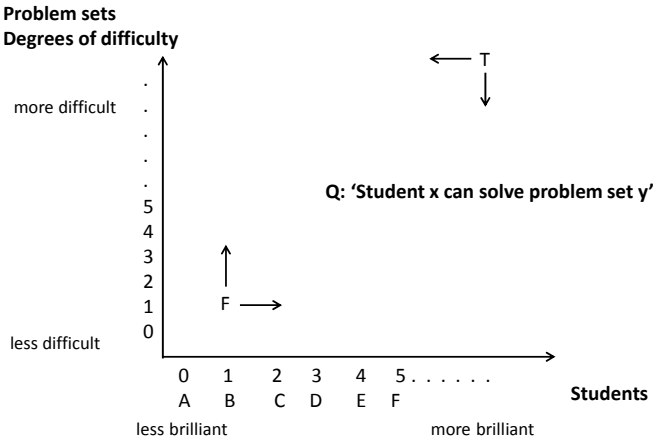


Figure 1.1: A scalar model with two dimensions (adopted from Israel 2011: 59)

The scalar model is built for defining pragmatic entailments. Given the truth of a proposition, listeners can use it to infer its relevant proposition ordered on the same dimension. For the purpose of explaining polarity, in Israel (2001) scalar inferences are divided into two types depending on the direction of how the inferences support a given proposition. For instance, with the propositional function 'x can solve y', inferences typically move from high to low values for y, from more difficult to less difficult. The reversal of direction for inferences occurs in negative or other affective contexts. When scale reversal happens, the inferences flow from less difficult ones to more difficult ones. The two types of inferences are termed as *scale preserving* and *scale reversing*, respectively, by Israel (1996), as summarized in (15).

(15) Propositional schemas

scale preserving	licensing inferences from high to low values	affirmative assertions
scale reversing	licensing inferences from low to high values	negative, affective contexts

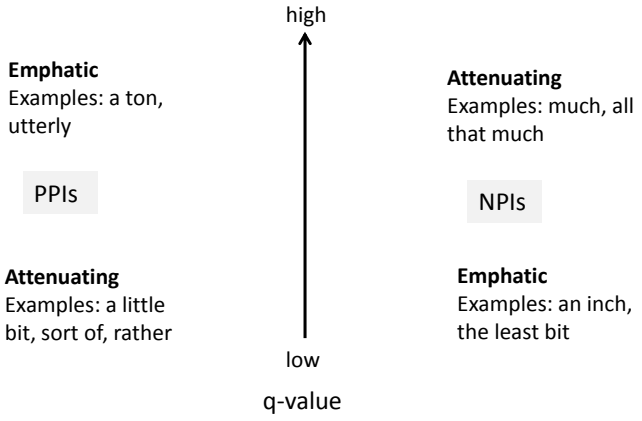
Israel (2011) further proposes that the polarity phenomenon that different polarity items appear in different scalar models is related to two semantic properties, Quantitative value (*q*-value) and Informative value (*i*-value), conventionally encoded in polarity items, as in (16). A high *i*–value is found when propositions entail the scalar norm, whereas a low *i*-value is observed in the situation where propositions are entailed by a scalar norm. Specifically, in the high *i*-value case, the assertion is informative because it goes beyond what would be generally expected to be asserted. Conversely, in the low *i*-value case, the assertion is relatively uninformative since it does not satisfy even the default standard.

(16) Two basic semantic properties of a proposition within a scalar model

Quantitative value	a proposition's position within a scalar model	If in a higher position along a scale, the proposition has a higher q-value.
Informative value	a proposition's relative informativity within a model	A proposition with more entailments has a higher *i*-value.

The two values together with the two scalar models give rise to four types of polarity items, as shown in (17) (adapted from Israel 2011: 90). The emphatic polarity items are those relatively informative, while attenuating polarity items are less informative.

(17) Four types of polarity items



The distribution of the four types of polarity items shows that q-value and *i*-value work together to position a proposition within the information lattice. Therefore, types of scalar inferencing vary with how a proposition in question is construed against the background of an ordered set of alternative propositions along a scale.

This diachronic study concerns the type of emphatic NPIs in (17). This group of NPIs normally contains a minimal q-value with a high i-value, resulting in emphatic effects. Due to the property, they are restricted to appear in the scale reversing condition where their extremely low q-value can be used to support their emphatic information value. This particular type of NPIs is generally termed *minimizers*.

1.1.5 Minimizers as a distinct class of negative polarity items: focus-sensitivity

Minimizers, expressions designating a minimal amount or referring to an endpoint of a scale, are frequently employed for emphatic functions (Fauconnier 1975, Horn 1989). They are found crosslinguistically, such as English *lift a finger*, *sleep a wink*, *hurt a fly, worth a red cent*, Greek *dhino dhekara* 'give a damn', and Hindi *zaraa-bhii* 'even a little'. They form a distinctive class due to their narrow licensing conditions. They appear in antiveridical or antimorphic contexts, such as negation, as in (18). In other words, they are not equally employed in all kinds of nonveridical environments. They tend to appear in negative environments.

(18) a. He didn't lift a finger to help.
b. *He lifted a finger to help.

These NPIs are generally labeled "strong" or "strict" NPIs, as opposed to the class of "weak" or "broad" NPIs (Giannakidou 2011). English *any* is an example of broad NPIs since it is allowed in contexts without negation.

Israel (2011) further associates different types of NPIs with the thematic hierarchy, as summarized below. Prototypical minimizers tend to be used as indefinite direct objects to measure the degree of how a predicate is instantiated, such as English *budge an inch* and *bat an eye*. They often appear in the role of a patient, a theme, or an incremental duration. What they have in common is that they are all affected by the predicate to a certain degree. In this case, they are at the bottom of an action chain (Langacker 1987).

The targeted linguistic construction in this study is minimizers in numeral classifier languages, particularly in Mandarin Chinese. The Mandarin Chinese minimizers normally appear in the form of 'one'-phases, which contain the numeral 'one', a unit word (a classifier or a measure word), and a noun, as shown in (19)-(22). The concept of numeral 'one' represents a minimal amount. Numeral classifier languages such as Mandarin, Japanese, and Korean involve classifiers in numeral phrases for quantifying the denotation of NPs. Classifiers reflect the gestalt perception of an individual object, and then extend to represent an atomic basic unit. Such a combination with a noun is used to designate a minimal unit.

(19) Mandarin Chinese [from *Chinese Gigaword*]
不浪費一粒糧食
bú làngfèi [yí lì liángshí]
NEG waste one CLF food
'(They) did not waste a bit of food.'

(20) Mandarin Chinese
一粒糧食都/也不浪費
[yí lì liángshí] dōu/ yě bú làngfèi
one CLF food FOC/ FOC NEG waste
'(They) did not waste even a bit of food.'

(21) Japanese
Rei-wa hito-tubu-no kome-mo tabe-nakat-ta
Rei-TOP one-CLF-GEN rice-FOC eat-NEG-PST
'Rei didn't eat a grain of rice. / Rei didn't eat anything.'

(22) Korean
na-nun mwul han-pangwul-to masi-ci-anh-ass-ta
I-TOP water one-drop-FOC drink-CONN-NEG-ANT-DECL
'I didn't drink even a drop of water.'

The 'one'-phrases have the characteristics of minimizers discussed so far. First, they have a narrow distribution. They normally appear in negative contexts for inducing scalar inferences in order to achieve emphatic effects. Second, they generally appear in a low position in the thematic

hierarchy. In addition to the two general properties, the 'one'-phrases in these numeral classifier languages have their own special properties. First, the three components can be arranged differently. The variations of ordering determine the focus site, which is associated with scopes of focus. As we shall see, different scopes of focus result in different sets of scalar inferences. Second, 'one'-phrases are polysemous in numeral classifier languages. They are employed for a wide range of functions, including quantity denoting and non-quantity denoting functions. The minimizer function of 'one'-phrases thus needs to be functionally distinguished from the other functions. Particularly, the NPI function has a tendency to occur in constructions which enhance its emphatic effects. Third, the use of 'one'-phrases as minimizers challenges the assumption that negation is a sufficient licensor for minimizers. Negation for minimizers in numeral classifier languages is a necessary condition, but it is not sufficient to distinguish the NPI function from the others. The 'one'-phrases as minimizers require association with focus. As shown in (20)-(22), the minimizers occur with a focus marker. The involvement of the focus markers is typical of the areal features of numeral classifier languages. The focus markers in different numeral languages originated from a similar source and cover a similar range of meanings. In this study of minimizers, I will connect how various focus construals including word orders and focus particles shape the minimizer interpretation of 'one'-phrases.

The polysemous nature of 'one'-phrases is the starting point of this study on Mandarin 'one'-phrases as minimizers. The next section will elaborate the polysemous model by introducing a variety of interpretations co-existing in 'one'-phrases in Mandarin Chinese.

1.2 Interpretational Variability of 'One'-phrases

In Modern Mandarin, numeral phrases exhibit a division between quantity-denoting and non-quantity individual-denoting functions, which can be distinguished by the involvement of scope interaction (Huang et. al 2009). The indefinite phrase of 'two students' in (23) is an individual-denoting rather than quantity-denoting expression because it expresses the fact that two individuals were involved in the event. This numeral phrase introduces existential quantification and gives rise to variable scope readings. Sentence (23) hence has two possible readings related to scope. If 'two students' has the scope over 'three bowls of rice', it results in the interpretation of six bowls in total. If not, there are only three bowls in total. In contrast, sentence (24), which contains a quantity denoting phrase 'two people', lacks a scope interaction. It has only the interpretation of three bottles of wine. Besides the difference in scope interactions, another difference is whether the requirement of specificity is imposed. Mandarin Chinese has the prohibition against an indefinite subject (Tsai 2001a, 2001b). The numeral phrase in (24) denotes quantity rather than indefinite individuals. It is therefore not subject to the specificity requirement and hence is allowed in the subject position.

(23) Individual-denoting (non-quantity denoting)
他給兩個學生吃三碗飯

tā	gěi	[liǎng	ge	xuéshēng]	chī	[sān	wǎn	fàn]
he	give	two	CLF	student	eat	three	bowl	rice

'He gave two students three bowls of rice to eat.'

(24) Quantity denoting
兩個人喝不完三瓶酒
[liǎng ge rén] hē bù wán [sān píng jiǔ]
two CLF person drink NEG finish three bottle wine
'Two people cannot finish three bottles of wine.'

The same division regarding quantity versus non-quantity can also be observed in 'one'-phrases. The 'one'-phrase in (25) refers to quantity rather than individuals. The sentence expresses the notion of the number of people finishing three bowls of rice. Since it is not a referential expression, it is permitted in the subject position (Li 1998). Conversely, the 'one'-phrase in (26) is a referential expression, which highlights a certain individual. The referential function can be illustrated by its co-referential relation with a pronoun. The pronoun 'he' and the 'one'-phrase refer to the same referent. This coindexing relation cannot be found in quantity denoting expressions (Huang et. al 2009), as shown in (27). The quantity-denoting 'one'-phrase is not allowed to coindex with the pronoun.

(25) Quantity denoting
一個人應該吃不完三碗飯
[yí ge rén] yīnggāi chī bù wán sān wǎn fàn
one CLF person probably eat NEG finish three bowl rice
'One student probably cannot finish three bowls of rice.'

(26) Individual-denoting (non-quantity denoting)
我叫一個學生去開他的車過來
wǒ jiào [yí ge xuéshēng] qù kāi **tā** de chē guòlái
I ask one CLF student go drive he POSS car come
'I asked a student to drive his car over here.'

(27) Quantity denoting
*一個人應該吃不完我給他的三碗飯
*[yí ge rén] yīnggāi chī bù wán wǒ gěi **tā** de sān wǎn fàn
one CLF person probably eat NEG finish I give he REL three bowl rice
Intended reading: 'One student probably cannot finish the three bowls of rice that I gave him.'

Numeral phrases involving the numeral 'one' are more complicated than those involving other numerals because specificity comes into play (Tsai 2002a).[2] The adjective 某 *mǒu* 'certain', which imposes a specific reading, can serve as a diagnostic to test the specificity. It can appear only with the numeral 'one', but not others (Tsai 2002a), as shown in the contrast between (28) and (29).

(28) 某一個人吃了你的蛋糕
mǒu [yí ge rén] chī le nǐde dàngāo
certain one CLF person eat PFV your cake
'A certain person ate your cake.'

[2] Tsai (2002a) suggests that numeral phrases in Chinese do not have a specific reading unless the numeral is 'one'. In other words, the parameter of specificity is not relevant when the numeral is larger than 'one'.

(29) ??某五個人來找過你
??mǒu [wǔ ge rén] lái zhǎo guò nǐ
certain five CLF person come find EXP you
Intended reading: 'Five people came to see you.'

'One'-phrases can have a nonspecific reading when they appear under irrealis tense, as shown in (30). The distinction between specific and nonspecific readings can be distinguished by the diagnostics of a secondary predicate, as proposed in Tsai (2002a). The nonspecific 'one'-phrase cannot be followed by a secondary predicate, whereas the specific 'one'-phrase allows a secondary predicate, as in (31).

(30) 他打算以後領養一隻狗，(*很可愛)
tā dǎsuàn yǐhòu lǐngyǎng [yì zhī gǒu]，(*hěn kěài)
he plan in the future adopt one CLF dog very cute
'He plans to adopt a dog in the future (*, which is very cute).'

(31) 他領養了一隻狗，很可愛
tā lǐngyǎng [yì zhī gǒu]，hěn kěài
he adopt one CLF dog very cute
'He adopted a dog which is very cute.'

In addition to the quantity-denoting and referential functions, Mandarin 'one'-phrases can function as minimizer NPIs. As shown in (32), the 'one'-phrase in the negative environment is interpreted as a minimizer with the function of inducing scalar inference for emphasizing negation.

(32) 從事賞月活動時，不留下一片垃圾 [from *Chinese Gigaword*]
cóngshì shǎng yuè huódòng shí， bù liúxià [yí piàn lèsè]
do appreciate moon activity when NEG leave one CLF trash
'When you enjoy the activity of watching the moon, don't leave behind a piece of trash.'

In sum, Modern Mandarin 'one'-phrases are polysemous. The interpretation is determined by the constructions where they appear. Among these readings, the minimizer function has the greatest distributional variation. Their variations connect the research questions to be investigated in this study, to be introduced in Section 1.4. The synchronic variation will be associated with their diachronic development, which will be mapped out based on a constructional approach. The relations between diachronic changes and constructional approaches will be discussed in Section 1.3.

1.3 Construction-based Changes

The major issues in the studies of diachronic changes are the 'mechanisms' of changes, which account for how a mental representation of a given expression shifts from one to another. (Traugott 2011). There have been different perspectives on the mechanisms of change. Harris and Campbell (1995) propose three types of mechanisms including reanalysis, extension, and borrowing. Among them, reanalysis and analogy have received significant attention. Reanalysis

is identified by Langacker (1977) as changes in the structure of an expression that do not involve any immediate modification of its surface structure. Reanalysis can be further divided into two subtypes. One is resegmentation, such as boundary loss, creation, and shift; the other is reformulation in syntax and semantics. Reanalysis is further extended to semantic changes by Eckardt (2006). Reanalysis is assumed to follow actualization, which is viewed as a gradual mapping as the consequence of reanalysis (Timberlake 1977, Harris and Campbell 1995). Analogy usually happens in the process of actualization, which is observed to intertwine with reanalysis (Hopper and Traugott 2003). Analogical extensions can be (i) semantic-pragmatic extension, (ii) syntactic expansion, and (iii) host-class expansion (Himmelmann 2004). The grammaticalization of *be going to* is elaborated in Traugott (2011) to exemplify the three types: (i) the phrase has a future-orientation reading from the original purposive motion reading; (ii) the phrase is available in a wider range of syntactic uses, such as with inanimate *it* subject, and (iii) the phrase has expanded its collocation to occur with stative verbs. In addition to reanalysis and analogy, mechanisms of change also include repetition or frequency, which is derived primarily from speaker production (Bybee 2003). Particularly, diachronic changes with respect to semantic development involve multiple notions, such as pragmatic inferences, conventionalized implicature, metaphorical and metonymic extension, and context-induced reinterpretation (Brinton and Traugott 2005, Bybee, Pagliuca, and Perkins 1994, Sweetser 1990). Granted the diverse types of diachronic changes, the question is what types of units are subject to the diachronic changes.

As pointed out in Gisborne and Patten (2011), studies of grammaticalization often presuppose the existence of 'construction' as the context where grammaticalization occurs, as in the case study of the context of how *be going to* has grammaticalized as *be gonna* in Hopper and Traugott (2003). Since then, context has been recognized as a crucial condition constraining the direction of development. In particular, grammaticalization is thought to affect constructions instead of individual lexical items (Bybee 2003). Himmelmann (2004) defines grammaticalization as a process of expanding contexts, so that the construction in question can accommodate a wider variety of components. The concept of 'construction' used in diachronic developments is in line with the notion of constructions in the framework of Construction Grammar. I will briefly review some of the literature on constructional approaches and then move on to the constructional perspective of grammaticalization.

Constructions are treated as symbolic form-meaning pairings in the constructional approaches (among others Goldberg 2006, Langacker 2008). Constructional approaches treat all constructions as part of a lexicon-syntax continuum instead of presupposing a clear division of lexemes and syntax (Fillmore 1988, Goldberg 2003). The varieties of constructional approaches (Croft and Cruse 2004, Fillmore, Key, and O'Connor 1988, Goldberg 2006, Langacker 2005) adhere to a set of tenets. As identified by Goldberg (2003), they share the following four tenets. First, a construction is a conventional pairing of form and meaning as the basic unit of grammar, as defined by Lakoff (1987), Fillmore, Key, and O'Connor (1988), and Goldberg (1995, 2006). Second, constructional approaches are constraint-based rather than rule-based because semantics is directly mapped onto syntax without derivation (Goldberg 2006, Culicover and Jackendoff 2005). Third, constructional approaches assume a network of inheritance. The hierarchical relationships reflect the fact that lower (more specific) level constructions inherit the properties from higher (more general) constructions. Fourth, there exist generalizations and crosslinguistic variability. The former is captured by domain-general cognitive processes and the latter by the

functions of specific constructions (Croft 2001, Haspelmath 2008, Evans and Levinson 2009). Most constructional approaches follow the usage-based principle. Although this principle is not shared by all the existing approaches, it reflects the fact that language structure is shaped by language use (Bybee 2010, Goldberg 2006, Tomasello 2003). Constructional approaches are generally coherent with tenets of cognitive linguistics, as indicated in Goldberg (2013). For instance, first, interpretations are based on the construal in question instead of truth conditions (Langacker 1987, Goldberg 1995). Second, with respect to linguistic function, syntax, semantics, and pragmatics are interrelated as part of a conceptual system. Third, the hierarchical taxonomy of constructions reflects a non-classical categorization, which is structured with prototypical cases and conventionalized extensions.

The summaries of constructional approaches and grammaticalization above are coherent in several ways. First, the default inheritance of construction grammar can model the relations between the extant constructions and the creation of constructions in grammaticalization. For instance, the default inheritance captures how the novel exemplars extended by speakers from the prototypes override inheritance from the more basic construction (Gisborne and Patten 2011). The default inheritance can account for relations between newly created and extant categories. Second, the majority of the variants of constructional approaches such as Cognitive Construction Grammar (Lakoff 1987, Goldberg 2006), Radical Construction Grammar (Croft 2001), and Cognitive Grammar (Langacker 1991) are usage-based. Being useage-based captures how the diachronic developments are shaped by language use. Based on this assumption, language changes come from language use, which is the same as general cognitive processes such as generalization and categorization. Language users can generalize over examples to construct schemas which still obey the default system. The analysis of the *way*-construction in Israel (1996) is cited in Croft and Cruse (2004) as an example of how constructional changes happen and is further related to grammaticalization analysis by Gisborne and Patten (2011) and Traugott and Trousdale (2013). This famous example is discussed below to show the compatibility of grammaticalization and constructional approaches.

A typical *way*-construction example is shown in (33), where the intransitive verb *laughed* occurs with a direct object. Although *laugh* is intrinsically not a motion verb, the motion of (33) is from the construction and *laugh* is interpreted as its accompanying manner. These properties come from the *way*-construction, where a lexeme can acquire distinct functions (Goldberg 1995).

(33) She *laughed* her way into the room.

Gisborne and Patten (2011) indicate six similarities between grammaticalization and constructional changes, illustrated by the constructional changes of the *way*-construction. First, a construction becoming more schematic and productive is an indicator of directional changes. For instance, the *way*-construction functions as a relatively abstract schema which can accommodate more specific instances over time. Second, both of them involve incremental stages. In the example of the *way*-construction, different types of verbs enter the construction at a different stage. Third, analogy plays a role in both of them. Different types of verbs, for example, enter the *way*-construction from those having similar semantics to the construction to those less similar. The process of class expansion involves the speaker's analogical reasoning of applying existing principles to newly recruited verbs. Fourth, reanalysis results in new constructions. In the case of the *way*-construction, the NP following the verb is treated as a direct object as part of the argument structure. Fifth, the two processes both involve constructional polysemy. Example (33)

can be interpreted as an incidental activity, which can be viewed as an extension from the more basic means reading. Sixth, they both more or less involve subjectification. The incidental activity use of the *way*-construction reflects the speaker's emotions or evaluations toward this motion which can be described in a simpler way. The increasing of the speaker's viewpoint is in line with the subjectificaiton normally involved in grammaticalization (Traugott 1982).

Based on the association and compatibility of grammaticalization and constructional approaches, two types of changes, constructional changes and constructionalization, are distinguished in Traugott and Trousdale (2013). In brief, constructional changes refer to changes that do not result in new constructions. In other words, the changes affect the features of existing constructions in terms of semantics, morphology, phonology and collocation. The expansion of verb classes in the *way*-construction belongs to this type. Constructionalization refers to the process of creating novel constructions. In the construction-based analysis, the inheritance network of constructions, where specific constructions inherit properties from more general constructions, accounts for the direction of change. In the domain of diachronic changes, the newly developed extensions can be viewed to inherit from their associated extant constructions. The constructions in the higher position of the hierarchical network can be viewed as more abstract schemas which have a group of more specific constructions at a lower level (Trousdale 2008a, 2008b).

In this diachronic study of 'one'-phrases, the development of 'one'-phrases into minimizers will be analyzed with a constructional approach due to their coherent features. The application of constructional approaches to the 'one'-phrases can capture the incremental stages, specify the contexts constraining the cline of changes, and integrate the interactions between semantic, syntactic, and pragmatic factors.

1.4 Asymmetric Distribution of Minimizers in Different Word Order Patterns

This study concerns how diachronic development has influenced synchronic variation of 'one'-phrases as minimizers, particularly in different word order patterns. This section will briefly overview the puzzle of asymmetric influences of word orders on 'one'-phrases as minimizers. The canonical word order of Modern Mandarin is SVO. Hence, the typical position for minimizers as a grammatical object should be the postverbal object position, as in (34). However, based on corpus data, 'one'-phrases reveal a tendency to appear in OV word order when interpreted as minimizers, as in (35).

(34) 整場會議，他沒說一個字
zhěng chǎng huìyì， tā méi shuō [yí ge zì]
whole CLF conference he NEG say one CLF word
'During the whole conference, he didn't say a word.'

(35) 整場會議，他一個字都/也沒說
zhěng chǎng huìyì， tā [yí ge zì] dōu/ yě méi shuō
whole CLF conference he one CLF word FOC/ FOC NEG say
'During the whole conference, he didn't say even a word.'

‘One’-phrases as minimizers behave asymmetrically in the two word order patterns. First, OV order allows variations in the ordering of the three components of the ‘one’-phrase, as in (36) and (37), but such variations are not allowed in VO order, as in the contrast of (38) and (39) . The variations of ordering are relevant to the scope of focus. However, they are not observed in the canonical VO order.

(36) 今天他米一粒都/也沒吃

jīntiān	tā	[mǐ	yí	lì]	dōu/ yě	méi	chī
today	he	rice	one	CLF	FOC/ FOC	NEG	eat

‘He didn’t eat even a grain of rice today.’

(37) 今天他一粒米都/也沒吃

jīntiān	tā	[yí	lì	mǐ]	dōu/ yě	méi	chī
today	he	one	CLF	rice	FOC/ FOC	NEG	eat

‘He didn’t eat even a grain of rice today.’

(38) 今天他沒吃一粒米

jīntiān	tā	méi	chī	[yí	lì	mǐ]
today	he	NEG	eat	one	CLF	rice

Intended reading: ‘He didn’t eat a grain of rice today.’

(39) *今天他沒吃米一粒

*jīntiān	tā	méi	chī	[mǐ	yí	lì]
today	he	NEG	eat	rice	one	CLF

Intended reading: ‘He didn’t eat a grain of rice today.’

Second, OV order can accommodate a wider range of ‘one’-phrases as minimizers, whereas the canonical VO order is relatively restricted, as shown in the contrast of (40) and (41). The preverbal ‘one’-phrase in (38) is unambiguously interpreted as a minimizer. The ‘one’-phrase under negation can get sufficient rhetorical force to emphasize the fact that not even a banana is eaten. Nevertheless, the ‘one’-phrase lacking such rhetorical force sounds unnatural out of context as in (40). Even though the ‘one’-phrase co-occurs with negation, the canonical licensor for NPIs, the sentence is awkward.

(40) ?他沒吃一根香蕉

?tā	méi	chī	[yì	gēn	xiāngjiāo]
he	NEG	eat	one	CLF	banana

‘He didn’t eat a banana.’

(41) 他一根香蕉也/都沒吃

tā	[yì	gēn	xiāngjiāo]	dōu/ yě	méi	chī
he	one	CLF	banana	FOC/ FOC	NEG	eat

‘He didn’t eat even a banana.’

Third, the combination of the numeral ‘one’ and the unit word refer to the minimal unit of the nominal denotatum, which is a characteristic of numeral classifier languages. They are allowed in OV order as in (42), but not in VO order, as in (43).

(42) 這些電影，他一部都/也不想看
zhèxiē diànyǐng， tā [yí bù] dōu/ yě bù xiǎng kàn
these movie he one CLF FOC/ FOC NEG want watch
'Among these movies, he doesn't want to watch even one of them.'

(43) *這些電影，他不想看一部
*zhèxiē diànyǐng，tā bù xiǎng kàn [yí bù]
these movie he NEG want watch one CLF
Intended reading: 'Among these movies, he doesn't want to watch even one of them.'

The asymmetric influence of word orders on the minimizer interpretations of 'one'-phrases is also observed in the Mandarin existential construction with the negative existential predicate 沒有 *méiyǒu*, which is normally glossed as English 'there be not'. Its corresponding positive existential predicate is 有 *yǒu*, as shown in (44)-(46).

(44) 有車！小心！
yǒu chē! xiǎoxīn！
YOU car watch out
'There are cars! Watch out!'

(45) 桌上有一枝筆
zhuō shàng **yǒu** yì zhī bǐ
desk top YOU one CLF pen
'There is a pen on the desk.'

(46) 桌上有一本書很厚
zhuō shàng **yǒu** yì běn shū hěn hòu
desk top YOU one CLF book very thick
'There is a very thick book on the desk.'

Following Huang (1987), the general form of Mandarin existential sentences is shown in (47). The grammatical subject generally appears in Position I. The NP in Position I is optional, as shown in (44) and (45). Position II is reserved for existential predicates, such as existential predicate 有 *yǒu* and its negative counterpart 沒有 *méiyǒu*. Position III is for the NP whose existence is being asserted. Position IV is filled by an expression of predication, which is a descriptive clause or phrase. The expression in Position IV has to be semantically related to the NP in Position III. Position IV is also optional as shown in (45) and (46).

(47) …(NP)…EXT.V…NP…(XP)…

Position I II III IV

The analysis of the string *zhuō shàng* 'desk top' in Position I in (45) and (46) is controversial. Chao (1968) treats the string as an NP 'desk' followed by a localizer. Li and Thompson (1981) claim that the localizer is a postposition. Huang (1987) holds a different perspective in analyzing the syntactic status of this string. He points out that the string cannot be treated as a PP except for

the way it is translated into English as a PP. If it was a postpositional phrase, it would be able to occur alone in an adjunct position and it could not occur as the object of a preposition, but this type of string cannot occur alone in an adjunct position. Instead, it can appear in a canonical NP positon. Moreover, the type of string can be preceded by the preposition 在 zài 'at', as in *zài zhuō shàng* 'at the top of the desk'. Based on its syntactic distribution, Huang (1987) analyzes the string as an NP in the subject position (Position I) in Mandarin existential sentences. However, this analysis of subject may contradict the definition of a sentential subject in Mandarin, which is the NP that has a "doing" or "being" relation with the verb, as proposed in Li and Thompson (1981). Such a relation depends on the semantics of the verb. In their analysis, the NP following the existential predicate is the subject (Li and Thompson 1981: 91).

(48) 有人在打電話給張三

yǒu	**rén**	zài	dǎdiànhuà	gěi	Zhāngsān
YOU	person	DUR	phone (v.)	to	Zhāngsān

'Someone is making a phone call to Zhangsan.'

When the relation between the subject and the verb is taken into consideration, the NP following the existential predicate in (44)-(46) can be viewed as an unaccusative subject.

'One'-phrases as minimizers in the Mandarin existential construction are also subject to the influence of different word order patterns. The canonical word order of the Mandarin existential construction with a negator is shown in (49), where the negator precedes the existential verb. The minimizer occupies the position immediately following the existential verb. When focus comes into play, the minimizer precedes the existential predicate, as shown in (50). Although the two sentences have the same truth condition, (50) is judged by native speakers to be "stronger" than (49) in emphasizing the fact that there is no rice. The subtlety comes from their difference in scope interpretation. (49) emphasizes that the quantity of rice is zero, whereas (50) has the same interpretation but it can also mean that 'there is no rice, not to mention other kinds of food.' The latter interpretation has the presupposition that rice is the most likely type of food to be seen in a bowl. The contrast in both quantity scale and type scale makes (50) even more salient in terms of scalar inferences.

(49) 碗裡沒有一粒米

wǎn	lǐ	méi	yǒu	[yí	lì	mǐ]
bowl	inside	NEG	YOU	one	CLF	rice

'There is not a grain of rice in the bowl.'

(50) 碗裡一粒米也沒有

wǎn	lǐ	[yí	lì	mǐ]	yě	méi	yǒu
bowl	inside	one	CLF	rice	FOC	NEG	YOU

'There is not even a grain of rice in the bowl.'

Interestingly, the 'one'-phrases as minimizers in the Mandarin existential construction do not show a tendency to occur in the preverbal position. The distribution is relevant to the information structure of the existential construction. How word order influences the interpretation of 'one'-phrases will be the theme throughout the remaining chapters. In order to generalize the influence of word order on minimizers with both existential and non-existential verbs, in non-existential constructions I use the label VO to refer to the construction where minimizers appear

postverbally as in (38), and the label OV to the construction where minimizers occur preverbally as in (37). In the case of the existential constructions, due to the specific syntactic form of the Mandarin existential construction, the unaccusative subject NP follows the existential predicate. This postverbal position looks like the canonical object in Mandarin. Therefore, I will also use VO and OV to refer to different word order patterns in the existential construction: VO refers to the constructions with a postverbal minimizer as in (49), while OV refers to the constructions where minimizers precede the existential verb as in (50). The VO and OV patterns have different information structures, which constrains the development of Mandarin 'one'-phrases as minimizers.

The synchronic asymmetry of 'one'-phrases as minimizers in VO and OV word orders reflects the intersection of multiple linguistic issues, including information structures of the VO and OV word order patterns, NPI licensing, focus constructions, scope interaction, and the distributional constraints of numeral phrases. These issues are chained together in the diachronic development of 'one'-phrases as minimizers.

1.5 Layout of the Study

This study starts from the puzzle of the asymmetrical distribution of 'one'-phrases as minimizers and investigates the following questions. First, 'one'-phrases are polysemous in numeral classifier languages. This polysemy can result in particular senses finding semantically appropriate niches in different larger constructions. The mechanisms of increasing salient distinction in a polysemous model will be further discussed with a focus on their collocation and association with relevant constructions. A cross-period corpus study is conducted to show that different meanings tend to be associated with their semantically and pragmatically coherent constructions. Specifically, the preferred constructions for Mandarin 'one'-phrases as minimizers can be unified as a larger category which can support the scalar inferences of minimizers. The distribution of Modern Mandarin minimizers turns out to be the result of a series of interconnected syntactic changes. An analysis of the development of minimizers will reveal the motivations of various diachronic changes in the history of Chinese, including word order shifts and the establishment of canonical numeral phrases. Chapter 2 provides a corpus analysis of 'one'-phrases as minimizers in the VO and OV orders from Old Chinese, Middle Chinese, to Early Mandarin Chinese (from 8c. B.C. to 19c. A. D.) with the aim of explaining the motivations behind the changes of their distribution.

Chapter 2 details the processes through which 'one'-phrases have been shaped as minimizers by external environments. Chapter 3 concerns internal changes including the constructional changes and the incremental development in the process of constructionalization. How the two types of construction-based diachronic changes interacted will be illustrated by a specific type of 'one'-phrases, which have their unit word fixed as *diǎn* 'dot'. This kind of 'one'-phrase has developed functions sensitive to two opposite polarities, an NPI and a PPI reading. The two opposite extensions are clearly reflected in their different pragmatic functions. The NPI one induces emphatic effects, while the PPI one causes attenuating effects. The development of this type of fixed 'one'-phrases in a polysemous model is constrained by the need for maximal distinctions among various meaning extensions. The development is a reflection of the special status of 'one' among numerals because it has the flexibility to be conceptualized as different sizes when it is placed against different scales. The different concepts of 'one' will be integrated

into the internal changes of ‘one’-phrases. The reanalysis of the relationships between the components of ‘one’-phrases will raise the issue of construction-based diachronic changes. Chapter 3 addreses the questions of why ‘one’-phrases are pervasively used as polarity items crosslinguistically, how ‘one’-phrases have developed their conventional extensions, and how diachronic changes target ‘one’-phrases as a whole rather than individual lexemes.

The employment of ‘one’-phrases as minimizers is a characteristic of numeral classifier languages. Importantly, when ‘one’-phrases are employed as minimizers, they must be accompanied by the scalar particles, as shown in Mandarin (35), Japanese (21), and Korean (22). The examples of ‘one’-phrases as minimizers all involve focus particles. However, the label as a focus marker is simply a cover term for the particles which have multiple focus-related functions. Interestingly, in numeral classifier languages, the particles have a similar semantic coverage. Japanese *mo* and Korean *to*, for instance, are generally used as an additive particle (cf. English *also*), but they are also used as a scalar particle (cf. English *even*) in negative environments. In addition to the two major functions, the particles also cover quantificational functions. These functions are divided by Modern Mandarin particles 都 *dōu* and 也 *yě*. Unlike Japanese and Korean, Mandarin ‘one’-phrases as minimizers have to co-occur with the particles only in OV order, as in (35). The occurrence of the scalar particles is a later development which began around Early Mandarin Chinese. The two particles have received much attention since they are multifunctional quantification words. The primary focus is usually on 都 *dōu*, while 也 *yě* is frequently viewed as a variant of 都 *dōu*. Each of them covers a different range of functions, but they overlap particularly in their scalar function. Although the interchangeability of the two seemingly irrelevant particles has been observed in many studies, the reasons behind it have barely been touched upon. Therefore, the two particles lack a unified account for their similarity in terms of scalar functions. Chapter 4 will approach the scalar function of two particles from a diachronic perspective. The scalar function has been shaped by OV order, which has an object focus, to be discussed in Chapter 4. What bridges the OV construction and the scalar particles is ‘one’-phrases as minimizers. This development of the two particles integrates the issue of the interchangeability of the two particles in the scalar function, the issue of how ‘one’-phrases as minimizers impart their scalarity to the OV construction, and the issue regarding asymmetry of how minimizers behave in VO and OV orders. The diachronic analysis will offer a unified account for the scalarity in minimizers and in scalar particles. Furthermore, it captures the similarity of the requirement of scalar particles for ‘one’-phrases interpreted as minimizers in numeral classifier languages, and explains how this requirement is instantiated differently in Mandarin Chinese and other numeral classifier languages such as Japanese and Korean.

The discussion of the preference of ‘one’-phrases as minimizers over certain other types of constructions in Chapter 2 and Chapter 3 and the discussion of their co-occurrence with scalar particles in Chapter 4 bring up the following issue: negation is a necessary but not a sufficient condition to fully distinguish the NPI function from the rest. It is in a focus construal that ‘one’-phrases under negation are obligatorily interpreted as minimizers, as shown in Mandarin (35), Japanese (21), and Korean (22). This observation challenges the assumption that negation is a sufficient licensor for minimizers. Chapter 5 will provide a comparison of ‘one’-phrases as minimizers in a number of numeral classifier languages to show how focus comes into play in the licensing of minimizers. The sources of the focus-sensitive particles among these languages will be compared to show the similarities of their development. The similar development typologically characterizes this areal feature. It is not uncommon to observe ‘one’-phrases used

as minimizers crosslinguistically. What makes 'one'-phrases as minimizers in numeral classifier languages special is the variation of word order. 'One'-phrases in these numeral classifier languages consist of three components, and hence they have a wider variety in combinations. The orderings of the components along with the position of the focus particle in 'one'-phrases result in different scopes of focus imposed minimizers, which can be observed, for instance, in Japanese and Korean. The scope differences can be regarded as the differences in induced scalar inferences. As a numeral classifier language, Mandarin Chinese also has variations in the orderings. The orderings determine the location of focus, which in turn determines how scalar inferences are structured. However, orderings can only be observed in OV word order. This phenomenon again brings up the issue of the asymmetry between VO and OV orders, which will be discussed in Chapter 6.

Chapter 6 presents a corpus analysis of how 'one'-phrases as minimizers behave in VO and OV word order patterns in Modern Mandarin. The distribution is conditioned by the properties of negation. The feature of existentiality can divide Modern Mandarin negation into two types, existential and non-existential negation. Under non-existential negation, the majority of 'one'-phrases as minimizers appear in OV order, which follows the general tendency observed in the minimizers in earlier stages of Chinese. On the contrary, in existential negation, most 'one'-phrases as minimizers stay in VO word order rather than in OV order. The difference is associated with how focus is structured in existential constructions and in the OV constructions. Since 'one'-phrases as minimizers in Mandarin Chinese are necessarily focused, they tend to stay where they can acquire sufficient focal prominence. This chapter will investigate the relations between the existential constructions and their information structure in order to explain how minimizers are constrained by different types of negation. The discussion will be broadened to include the interaction between 'one'-phrases and relative clauses and also the occurrences of variants of 'one'-phrases to show that 'one'-phrases tend to be the unit which attracts the most focal prominence in a sentence.

Chapter 7 summarizes the diachronic developments underlying the synchronic variations of 'one'-phrases as minimizers in Mandarin Chinese. The study starts from the investigation of minimizers to connect seemingly irrelevant but related linguistic issues such as NPI licensing, focus constructions, word orders, numeral phrases, and polysemy. The synchronic variations are structured as the output of a series of diachronic changes which form a complex network.

Chapter 2

The Development of 'One'-phrases as Minimizers in Chinese

This chapter is devoted to the development of Mandarin Chinese 'one'-phrases, which are the main source of Mandarin minimizer NPIs. The data covered span the periods from Old Chinese, to Middle Chinese, to Early Mandarin. In modern Mandarin, the form of a 'one'-phrase has multiple functions, including serving to count, indicating an indefinite amount, referring to an indefinite referent, and behaving as a minimizer NPI, as shown in (1)-(4)[1]. The 'one'-phrase in (1) shows the quantity of the objects. The example in (2) does not refer to a precise quantity. As a downtoner, the 'one'-phrase is naturally non-focal. In (3), the 'one'-phrase is a referential expression for a specific but indefinite referent. The 'one'-phrase in (4) does not refer to an existent one unit. Instead, it has a strong pragmatic emphasis on zero. The different functions are all realized in a 'one'-phrase, making this form polysemous.

(1) [counting] 還了一把斧頭、一個蘿筐 [from *ASBCMC*]

huán	le	[yì	bǎ	fǔtóu]、	[yí	ge	luókuāng]
return	PRF	one	CLF	axe	one	CLF	basket

'returned one axe and one basket'

(2) [indefinite amount] 給他一點折扣[from *ASBCMC*]

gěi	tā	[yì	diǎn	zhékòu]
give	him	one	dot	discount

'give him a bit of discount'

(3) [indefinite referent] 有一回一個朋友打電話來[from *ASBCMC*]

yǒu	yì	huí	[yí	ge	péngyǒu]	dǎ	diànhuà	lái
have	one	round	one	CLF	friend	call	telephone	come

'once a friend called me…'

(4) [minimizer NPI] 沒一滴水的大沙漠[from *ASBCMC*]

méi	[yì	dī	shuǐ]	de	dà	shāmò
NEG	one	drop	water	REL	big	desert

'a big desert without a drop of water'

Among these functions, the function of a minimizer NPI deserves special attention for a couple of reasons. First, the NPI reading of 'one'-phrases occurs in specific conditions, such as negation and focus. Second, although the meaning of a 'one'-phrase is compositional when interpreted as counting or referencing, a minimizer NPI is not merely an expression designating one unit. Instead, it induces scalar inferences and reinforces negation. Since a 'one'-phrase has various functions, how this NPI function is distinguished from the other functions becomes an interesting issue. Negation cannot fully distinguish the minimizer function from the others because the

[1] The modern Mandarin examples are gathered from *Academia Sinica Balanced Corpus of Modern Chinese* (ASBCMC).

counting function and the referential function can also appear under the scope of negation. In the case of modern Mandarin, the variation in word order serves as a way to distinguish the minimizer interpretation from the other interpretations of 'one'-phrases. Mandarin canonical word order is SVO, with the typical position of a 'one'-phrase as an object being in the postverbal position, as shown in (5). However, a minimizer tends to appear as an object in the preverbal position and normally with a focus marker in addition to occurring under the scope of negation, a necessary condition, as shown in (6). These additional conditions can successfully secure an NPI reading in a 'one'-phrase.

(5) 不說一個字

bù	shuō	[yí	ge	zì]
NEG	say	one	CLF	word

'did not do a thing'

(6) 一個字也不說

[yí	ge	zì]	yě	bù	shuō
one	CLF	word	FOC	NEG	say

'did not even do a thing'

This chapter provides an answer to the issue of distinguishing the minimizer function by presenting how a minimizer is associated with specific types of constructions in different periods of Chinese and how syntactic changes have shaped these associations. A diachronic analysis can account for the synchronic polysemy of 'one'-phrases, which allows us to explain the way how minimizers behave in modern Mandarin.

In the following sections, I will define the type of 'one'-phrases in question in the discussion of Mandarin minimizers in Section 2.1 and present the data sources for this diachronic analysis in Section 2.2. Then I will explain how the function of NPI minimizers interacts with different constructions in different periods of Chinese in Section 2.3. A cross-period comparison of 'one'-phrases as minimizers will be offered in Section 2.4.

2.1 Two Types of Chinese 'One'-phrases

Mandarin 'one'-phrases can be divided into two major types, non-fixed and fixed 'one'-phrases, based on the relationship between the measure words/classifiers (CLFs hereafter) and the NPs associated with them. The two types are distinguished based on whether the slot between *yi* 'one' and the NP can be freely occupied by different unit words (UWs hereafter), including various classifiers and measure words. The fixed type allows only *dian* 'dot' in the UW position, whereas the non-fixed type can accommodate different UWs. The sequences of the two types of 'one'-phrases are shown in (7). Based on the corpus data, the fixed ones are a later development than the non-fixed ones, and they are both highly productive in modern Mandarin.

(7) a. non-fixed 'one'-phrase: *yi* 'one'-UW[2]-noun
b. fixed 'one'-phrase: *yi* 'one'- *dian* 'dot'-noun

The UW slot between 'one' is determined by its following NP as in (8), where the NP 'paper' selects *zhang*, a classifier for a thin, flat, two-dimensional object. As in the case of a fixed 'one'-phrase, the NPs it is used with are mainly abstract nouns, such as 'sincerity', 'confidence', and 'sadness' as well as mass nouns such as 'water', 'gas', and 'wind', as in (9). In Mandarin, these two categories of nouns do not have classifiers. However, mass nouns are compatible with measure words to specify the amount, such as 'a cup of water' and 'a tank of gas'. The use of *dian* 'dot' instead of other measure words in the UW slot specifically suggests the smallest amount. The development of *dian* 'dot' as unit word will be presented later.

(8) 他一張紙都沒帶

tā	[yì	zhāng	zhǐ]	dōu	méi	dài
he	one	CLF	paper	all	NEG	bring

'He did not bring even one piece of paper.'

(9) 他一點誠意都沒有

tā	[yì	diǎn	chéngyì]	dōu	méi	yǒu
he	one	dot	sincerity	all	NEG	have

'He does not have the least bit of sincerity.'

Each of the two types of 'one'-phrases has more than one function. These functions of both types of 'one'-phrases have developed in different periods of Chinese, interacting notably with changes in word order, the occurrence of classifiers, and the development of focus constructions. These three phenomena have received significant attention in the field of Chinese linguistics as they are important indicators of transitions between different stages of Chinese. I will discuss how these two types of 'one'-phrases have developed as minimizer NPIs and what the roles the three phenomena have played in the process are. The diachronic developments of the two types of 'one'-phrases will be compared in order to reveal how different functions, such as counting phrases and minimizer NPIs, have been shaped by constructions.

The diachronic analysis of non-fixed 'one'-phrases lays out the related syntactic changes in Chinese, while the analysis of fixed 'one'-phrases shows the internal changes of a numeral phrase, such as the relationship among its components and the realignment of semantic and syntactic properties. The two types of 'one'-phrases will thus be discussed in order. The discussion of minimizers starts from non-fixed 'one'-phrases since they appeared earlier than fixed ones and since their development is a microcosm of a number of significant developments in Chinese which have greatly influenced the development of numeral phrases. Unless specified, the 'one'-phrases discussed in Section 2.3 are all non-fixed 'one'-phrases. After clarifying the external factors of the changes of the numeral phrase, the discussion will focus on the internal constructional changes, which appeared in the development of fixed 'one'-phrases. A detailed discussion of fixed 'one'-phrases is presented in Chapter 3. The data for this diachronic analysis

[2] This position can be filled by various unit words. According to Zhang (2013), all types of CLFs and measure words are treated as unit words (UW). UW represents the ensemble of classifiers and measure words in this discussion unless otherwise specified.

are gathered from texts ranging from 8c. B.C. to 19c. A.D. How this time span of Chinese is divided and the source for each stage will be introduced in Section 2.3.

2.2 Sources of Data from Different Periods of Chinese

In order to provide a thorough study of both synchronic variation and diachronic development of 'one'-phrases, this study includes data in the *Academia Sinica Ancient Chinese Corpus* (*ASACC*).[3] The corpus contains subcorpora for various periods of Chinese such as the *Corpus of Old Chinese*, the *Corpus of Middle Chinese*, and the *Corpus of Early Mandarin Chinese*. The time periods covered by each of these subcorpora and the numbers of characters contained in each subcorpus are listed in (10).

(10) Old Chinese: Pre-Qin Dynasty through West Han Dynasty 8c. – 1c. B.C.
Total number of characters: 5,657,039
Middle Chinese: East Han Dynasty through Wei-Jing Dynasty 1c. – 6c. A.D.
Total number of characters: 19,737,152
Early Mandarin Chinese: Tang Dynasty through Qing Dynasty 7c. – 19c. A.D.
Total number of characters: 36,159,860

The division into three periods of Chinese is based on their syntactic, phonological, and morphological characteristics, making maximal distinction between each time period.[4] For instance, the distinction between Old Chinese and Middle Chinese is defined by the loss of case markers on pronouns, the emergence of compound nouns, and changes in word order in Middle Chinese (Wei 2000, 2003).

Early Mandarin Chinese covers the longest period, spanning 13 centuries. To better capture the gradual changes of Chinese 'one'-phrases during this period, I further divide this period into two stages, Early Mandarin I, from 7c. A.D. to 12c. A.D., and Early Mandarin II, from 13c. A.D. to 19c. A.D. The split is made at the transition from the Song Dynasty to the Yuan Dynasty, an empire established by the Mongols with a great influence on Chinese culture as well as Chinese.

The *Academia Sinica Ancient Chinese Corpus* contains a complete collection of Chinese texts from different periods. For instance, the *Corpus of Old Chinese* and the *Corpus of Middle Chinese* include Chinese classic literature, such as *Analects* (ca. 400 B.C.), Buddhist texts, *Shijing* (classical poetry: 1111-771 B.C.), *Zuo Zhuan* (narrative history: 722-468 B.C.), etc. The *Corpus of Early Mandarin Chinese* includes written literature *Si Da Ming Zhu* (Four Great Classical Novels: ca. 1300 A.D.) and texts of Chinese opera, which are commonly thought to reflect spoken Chinese of the said period.

[3] The institute-internal version of the corpus is not yet released to the public. I gratefully acknowledge Academia Sinica for allowing me to access the corpus.
[4] The periodization of Chinese has been a controversial issue (cf. Mei 1997, Norman 1988, Pan 1982, Peyraube 1996). The division of subcorpora in *Academia Sinica Ancient Chinese Corpus*, such as Old Chinese, Middle Chinese and Early Mandarin, follows the classification of Wei (2000, 2003).

How non-fixed ‘one’-phrases behave across their stages of development based on the data collected from these corpora will be examined in Section 2.3. The discussion will center on how the functions of minimizer NPIs interact with different constructional constraints.

2.3 The Development of Non-fixed ‘One’-phrases across Three Periods of Chinese

This section is intended to show how the minimizer NPI function of non-fixed ‘one’-phrases is distinguished from other functions, such as counting and expression of an indefinite referent, by being associated with different types of constructions. It has been well known that expressions of a small quantity tend to occur with negation and negative polarity since Meillet (1912) first commented on negation reinforcers. Mandarin minimizers are no exceptions to this generalization. The most important condition for a ‘one’-phrase to be interpreted as a minimizer is negation, but other functions of a ‘one’-phrase are also allowed to appear under negation. In addition to negation, another salient property of non-fixed ‘one’-phrases in Modern Mandarin is its strong tendency to appear in a preverbal position. The preverbal object position is considered to be associated with focus (Tsai 2004a, N. Zhang 2000). As seen in (11), the focus particle marks the preverbal position as a focus associate, and therefore the ‘one’-phrase in this position has focal prominence. As demonstrated by the contrast in (11) and (12), both sentences can be used to state the fact ‘he did not say anything’ as an answer to the question ‘did he say anything about…’, but (11) carries an emphatic tone.

(11) 他一個字都不說

tā	[yí	ge	zì]	dōu	bù	shuō
he	one	CLF	word	FOC	NEG	say

‘He did not say even a word.’

(12) 他不說

tā	bù	shuō
he	NEG	say

‘He did not speak.’

Minimizers are known to attract focal prominence (Israel 2011), and this preverbal object position only allows only the minimizer interpretation of a ‘one’-phrase. Then the question is how this association is formed and what kind of focal prominence it is. To capture the process of how the connection between minimizer NPIs and the preverbal position has evolved, the link between the preverbal position and the non-fixed ‘one’-phrases as minimizer NPIs will be examined across different stages.

The discussion of minimizers mainly focuses on the minimizers in an object position. The ‘one’-phrases as minimizers in the subject position is not included in this analysis because ‘one’-phrases as indefinite phrases seldom appear in the subject position of SVO due to the violation of the requirement of definiteness in Mandarin subject position. How word order determines the interpretation of ‘one’-phrases diachronically will be the main topic in the rest of the discussion in this chapter. Below I will introduce the negators used from Old Chinese to Early Mandarin Chinese, and their relevant word order patterns.

Two major negators in Mandarin, 不 *bù* and 無 *wú*, are considered in the corpus analysis of 'one'-phrases as minimizers. *Bù* as a generic or stative negator precedes verb phrases. When *bù* is involved, 'one'-phrases as minimizers appear in either VO or OV word order, as shown in (5) and (6). The other negator *wú* is pervasively used from Old Chinese to Early Mandarin Chinese, equivalent to Modern Mandarin 沒 *méi* for non-instantiation events and negative existential verb 沒有 *méi yǒu*[5]. 無 *wú* is used when the main verb of the sentence is 有 *yǒu*, as shown in (13). 有 *yǒu* has a number of different meanings, such as existential, possessive, perfective, presentational, and assertive (Cheng 1978, Huang 1987, Tsai 2004b), as discussed in Chapter 1. The verb 有 *yǒu* can be optionally omitted when the negator 無 *wú* appears. The negator 無 *wú* has two major functions in the data. First, it negates the realization of a situation, as shown in (14), where the instantiation of the destroying event is negated. The other function of the negator 無 *wú* is the negation of the existential verb 有 *yǒu*, as shown in (13), where 有 *yǒu* is an existential predicate.[6]

(13) 無有一物不可聞 [from *ASACC*]

wú	yǒu	yí	wù	bù	kě	wén
NEG	EXT.V	one	thing	NEG	be able to	hear

'There is nothing that I am not able to hear.'

(14) 無毀於一人 [from *ASACC*]

wú	huǐ	yú	yì	rén
NEG	destroy	to	one	person

'It was not destroyed by one person.'

The general form of Mandarin existential sentences proposed by Huang (1987) has been discussed in Section 1.4, which is repeated in (15). Position II is reserved for existential verbs, such as existential predicate 有 *yǒu* and its negative counterpart 無 *wú*. Position III is for the NP whose existence is asserted, which is normally the unaccusative subject of the existential predicates. When a focus construction is involved, this NP occurs preverbally. Hence there are two types of word order patterns of the negative existential construction, *wú*- postverbal NP and preverbal NP- *wú*, from Old Chinese to Early Mandarin Chinese.

(15) …(NP)…EXT.V…NP…(XP)…

Position	**I**	**II**	**III**	**IV**

The arrangement of the existential predicate and the 'one'-phrases makes 'one'-phrases pattern like objects in the canonical VO order, and therefore they are included in this broader definition of VO versus OV order. In order to capture the generalization of the interpretation of 'one'-phrases in preverbal and postverbal positions, the labels VO and OV are also used to refer the variation of word order in the negative existential construction. VO refers to the order where

[5] *Méi* and *méi yǒu* can be used as either adverbs or verbs. They serve as the negative forms of 'have' when used as verbs and the verb *yǒu* can only be negated by *méi* (Xiao and McEnery 2008). *Méi* appeared earlier than *méi yǒu*, but *méi* and *méi yǒu* are mostly interchangeable in modern Mandarin.

[6] In order to distinguish the two types of 無 *wú* in glossing, the negative existential 無 *wú* is glossed as NEG.EXT, while the non-existential one is glossed as NEG.

the negative existential predicate is followed by a minimizer 'one'-phrase as in (16). If the 'one'-phrase precedes the negative existential predicate as in (17), this type of construction is labeled as OV for ease of comparison with the word order patterns of the negator *bù*.

(16) 無一人 [from *ASACC*]
wú yì rén
NEG.EXT.PRED one person
'There was not a person.'

(17) 一人也無 [from *ASACC*]
yì rén yě wú
one person FOC NEG.EXT.PRED
'There was not even a single person.'

The data of the two sequences **NEG-V-'one'-phrase** and **'one'-phrase-NEG-V** are extracted from Old Chinese, Middle Chinese, and Early Mandarin corpora. The former represents the minimizer NPIs as an object in VO word order and the latter represents the minimizer NPIs as an object in OV word order. Two sequential orders multiplying two types of negators results in four combinations. The four sequences *bù* 'NEG'…'one', 'one'… *bù* 'NEG', *wú* 'NEG'…'one', and 'one'… *wú* 'NEG' are searched from the three corpora respectively. Afterwards the 'one'-phrase with an NPI reading are manually selected from each search result. If a search result exceeds 5000 tokens, a 5000-token sample is randomly extracted from the total tokens. In this case, the minimizer NPI function is counted in each 5000-token sample, and then the numbers of the NPI function are normalized based on the total occurrences of the search results. The ratio of 'one'-phrases interpreted as minimizers in the two word order patterns is different in each period. A cross-period comparison of the ratios from different periods will reveal how the link between a focal construction and the NPI reading of 'one'-phrases has gradually formed.

2.3.1 Non-fixed 'one'-phrases in Old Chinese

Old Chinese has two important syntactic characteristics with respect to word orders. The first is the competition between SOV and SVO word order. The second is the employment of two sequential orders within a numeral sequence, NUM-(UW)-N and N-NUM-(UW). The discussion will begin with how non-fixed 'one'-phrases interact with both SVO and SOV word orders and move on to how the two orders within a numeral sequence determine different readings of a non-fixed 'one'-phrase.

2.3.1.1 Non-fixed 'one'-phrases in SVO and SOV

The word order and the change in word order in Old Chinese have been a lingering mystery. Scholars have different hypotheses with regard to unmarked word order in Old Chinese. Li and Thompson (1974) claim that Old Chinese was an SOV language and it might have shifted to SVO before shifting back to SOV again. However, Light (1979) and Sun and Givón (1985) claim that Chinese has remained an SVO language since the shift from SOV to SVO, with SOV being a marked order for contrastive focus. Peyraube (1997a) further suggests that the SVO

order is more basic than SOV in both Early (11c. – 6c. B.C.) and Late Archaic Chinese (5c. – 2c. B.C.). SOV is not regarded as basic because it requires certain concomitant contexts. For instance, SOV instead of SVO is used when an object is a pronoun in interrogative and negative sentences. Pronoun fronting can also be found when there are instrumental markers and focus markers such as 是 *shì*. Aldridge (2012, 2015) also supports the view that SVO is the basic word order in Old Chinese and that SOV is the result of syntactic movement. In other words, preverbal objects, such as those appearing in *wh*-phrases and focused NPs, are analyzed as having undergone syntactic movement triggered by focus. Although the scholarship on word order has not reached a consensus, it is clear that both SVO and SOV existed in Old Chinese with SOV being the more constrained order. In Chapter 4, I will show that

Granted the fact that SVO and SOV coexisted in Old Chinese, the question concerned here is whether the NPI reading of the non-fixed 'one'-phrases is associated with SVO or SOV word order in Old Chinese. The non-fixed 'one'-phrases generally did not include a classifier because the classifier system was not yet fully developed in Old Chinese. The UW slot normally serves as an indicator of two types of 'one'-phrases, fixed and non-fixed, but a vacant UW slot in Old Chinese does not cause confusion of the two types for two reasons. First, the nouns of 'one'-phrases from the Old Chinese database are countable nouns, not abstract or mass nouns. Second, fixed 'one'-phrases had its debut in Middle Chinese, when *dian* 'one' started to be used a unit word. Based on the data in the *Corpus of Old Chinese*, the NPI reading of non-fixed 'one'-phrases appear mostly in VO order, as exemplified in (18)-(20).

(18) 不敢飲一杯 [from *ASACC*]

bù	gǎn	yǐn	[yì	bēi]
NEG	dare	drink	one	cup

'…dare not drink a cup (of beverage)'

(19) 終日不獲一禽 [from *ASACC*]

zhōng	rì	bú	huò	[yì	qín]
entire	day	NEG	get	one	bird

'…did not get any bird for the whole day.'

(20) 今無一人還 [from *ASACC*]

jīn	wú	[yìrén]	huán
now	NEG.EXT	one person	return

'Now nobody has returned.'

Sentence (20) is an existential construction. The existence of *rén* 'person' is introduced by the negative existential predicate, and is followed by an expression of predication, *huán* 'return'. It is noteworthy that expressions of predication for the NP whose existence is profiled are observed only in VO order in Old Chinese. It is not found in the tokens of OV order.

Although the NPI reading of 'one'-phrases rarely appeared in SOV order, a few examples can still be found, as shown in (21) and (22). Unlike OV order in Modern Mandarin (cf. (11)), the 'one'-phrase in Old Chinese can appear in a preverbal position without a focus particle involved.

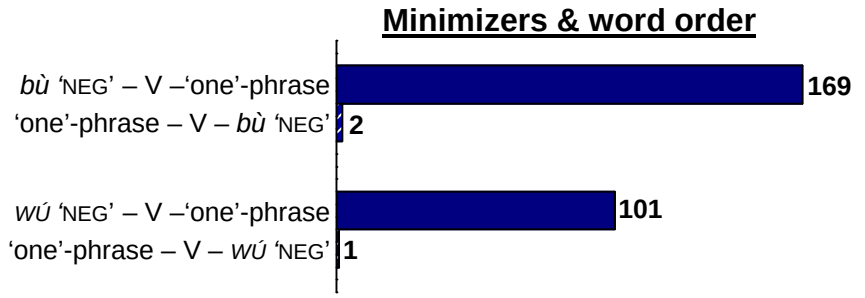
(21) 一毛不拔 [from *ASACC*]

[yì máo] bù bá[7]
one fur NEG pluck
'not willing to pluck one shred of fur'

(22) 一人無赦 [from *ASACC*]

[yì rén] wú shè
one person NEG forgive
'No one can be remitted a punishment.'

Tokens of non-fixed 'one'-phrases with an NPI reading in SVO and SOV orders in *Corpus of Old Chinese* are summarized in Figure 2.1. The majority of the NPI 'one'-phrases occur in VO order. The contrast in numbers of tokens in each pair of word orders shows that there was no obvious relationship between the NPI function of non-fixed 'one'-phrases in Old Chinese and the preverbal position.



Search results (tokens)	
bù 'NEG' …'one'	3,922
'one'… *bù* 'NEG	3,596
wú 'NEG' …'one'	1,068
'one' … *wú* 'NEG'	1,071

Figure 2.1: The tokens of the non-fixed 'one'-phrases as minimizers in VO and OV word orders in the *Corpus of Old Chinese* (total number of characters: 5,657,039)

In Old Chinese, the non-fixed 'one'-phrases in the sequence **NEG-V-'one'-N** have several functions. First, the 'one'-phrase could have a referential function, as in (23). The referent of the phrase *yi lao* is Confucius, which is literally *one old man*.

(23) 不慤遺一老 [from *ASACC*]

bù yìn yí [yì lǎo]
NEG willing keep one old
'(God) is not willing to keep the old man.'

The second function is as an NPI, emphasizing the concept of *none*, as already shown in (18)-(22). The third function is similar to English *little/few*. As shown in (24) and (25), the 'one'-phrases here are not identical with an NPI. Instead, they are used to emphasize that the amount is extremely small and nearly zero. This reading can cause inferences of the NPI reading. For instance, (24) can infer the reading of no strength, and (25) can infer that 'people received no money'.

[7] This phrase has become an idiom with the meaning 'stingy/not willing to help s.o. financially' in modern Mandarin. Its word order has remained unchanged.

(24) 不足以舉一羽 [from *ASACC*]

bù zú yǐ jǔ [yì yǔ]
NEG enough INS lift one feather
'(My strength) is not enough to lift a feather.'

(25) 不人得一錢

bù rén dé [yì qián]
NEG person receive one MW for money
'The money that each person received did not reach one penny.'

These examples show that the sequence NUM-(UW)-N in Old Chinese can be used for functions other than denoting a precise quantity of one unit. For instance, a 'one'-phrase can serve as a reference point on a scale for inducing a scalar reading, as in the case of minimizer NPIs. A 'one'-phrase can also refer to an amount short of a basic unit to emphasize the small amount. These readings are not related to a precise quantity. This phenomenon raises one issue, namely how a quantity-denoting expression such as a counting phrase is expressed in Old Chinese. There should be a way to distinguish the quantity-denoting function and the descriptive function of a 'one'-phrase.

In brief, results of the survey of 'one'-phrases in the *Corpus of Old Chinese* do not reveal any strong link between an NPI reading and the preverbal object construction, which in modern Mandarin Chinese is an important property for minimizers. This suggests that Old Chinese may rely on other forms than the VO/OV contrast to distinguish the meanings expressed by a 'one'-phrase. In fact, it is the internal order of a numeral sequence that tends to be associated with a certain type of meaning in Old Chinese. This issue will be discussed in the following section.

2.3.1.2 Non-fixed 'one'-phrases in two word order patterns in a numeral phrase

The issue of whether canonical classifiers existed in Old Chinese has received a lot of attention. Dobson (1962) and Pan (1982) believe that classifiers were already in use in Old Chinese, whereas Ōta (1958), Peyraube (1998), and Wang (1989) believe that canonical classifiers only made their debut in Han Dynasty (1c. B.C). Huang (1964), Liu (1965), and Loke (1997) claim that classifiers began to proliferate in the period of Old Chinese. Although this debate is far from settled, one consensus that can be reached is the fact that the system of classifiers was not yet fully established in Old Chinese. Therefore, the slot following 'one' of the non-fixed 'one'-phrases collected from the corpora is either occupied by a measure word or is vacant, as already shown in (18)-(22).

Numeral phrases in Old Chinese have two variants of order, NUM-(MW)-NOUN and NOUN-NUM-(MW) (Wei 2000 & 2003, Wu et al. 2006). In modern Mandarin Chinese, the form pervasively used is NUM-(MW)-NOUN, which is claimed to be a later development than NOUN-NUM-(MW) (Ōta 1987[2003]). The later form NOUN-NUM-(MW) appears only in enumerative lists. There are two opposing opinions regarding the origin of NUM-(MW)-NOUN before the classifiers emerged. One side asserts that the pattern NUM-(MW)-NOUN is derived from NOUN-NUM-(MW). In other words, NUM-(MW) has undergone movement to the position before a prenominal position (Liu 1965, Peyraube 1998). The movement hypothesis in Peyraube (1998) is summarized in (26)

and (27). The change in word order shown in (26) happened around 5c. B.C.~3c. B.C. A similar process of movement occurred again when classifiers came into play later, as in (27).

(26) NOUN-NUM-MW > NUM-MW-NOUN

(27) NOUN-NUM-CLF > NUM-CLF-NOUN

The other side, in contrast, posits that the two word orders are not necessarily historically sequential because the two patterns differ in semantics, syntax, and pragmatics (Yang-Drocourt 1993). Specifically, the form NOUN-NUM-MW expresses quantity, brings new information, and appears in enumeration. On the contrary, the form NUM-MW-NOUN is reserved for old information and the exact number is not emphasized. Ōta (1987[2003]) also distinguishes the two forms in terms of their structures and functions. Semantically, NUM-MW-NOUN in Old Chinese is for quantity only, as shown in (28). However, the form can be used for enumeration in modern Mandarin. In Old Chinese, the focus of NOUN-NUM-MW is on the quantity denoted by the numeral. Structurally, NUM-MW in (28) is used to modify the following noun, whereas NUM-MW in (29) is analyzed as a predicate.

(28) NUM-MW-NOUN:
yì-piáo-yǐn 一瓢飲‘one gourd. MW drink’; *yì-cuō-tǔ* 一撮土 ‘one pinch soil’

(29) NOUN-NUM-MW:
niú yī 牛一 ‘one cow’; *mǎ-qiān-sì* 馬千駟 ‘horse thousand MW (of horse)’

The movement hypothesis has been rejected mainly because of the following two reasons. One is the coexistence and productivity of the two orders, NUM-MW-NOUN and NOUN-NUM-MW, in Old Chinese (Ōta 1987[2003]). Wu et al. (2006), following Ōta (1987[2003]), observe that the two sequences had coexisted even in Old Chinese but were distributed in different genres of texts. Since there is no clear evidence indicating which sequence occurred earlier than the other, it is not persuasive to claim that one form is derived from the other. Moreover, phrases parallel to them, NOUN-NUM and NUM-NOUN, already coexisted and were used in different contexts before the development of measure words and classifiers (Wei 2003). The other reason is that the two sequences are claimed to differ in syntactic structures. Each of them had its own semantics. Semantically, NUM-MW-NOUN was descriptive, whereas NOUN-NUM-MW was employed for measuring and counting. The two sequences also differed in their internal structures. The sequence NOUN-NUM-MW is analyzed as a noun with a predicate, NUM-MW. One piece of evidence is the insertion of adverbs between the noun and NUM-MW, such as the time adverbial *rì* in (30) and the particle, *yě*, used to indicate a pause of an utterance in (31). The adverbials indicate that NUM-MW is not part of the NP.

(30) 賜酒日二升 [from *ASACC*]

cì	jiǔ	rì	èr	shēng
award	wine	day	two	liter

‘award two liters of wine per day’

(31) 士也三萬人 [from *ASACC*]

shì	yě	sān-wàn	rén
soldier	PTC	three-ten.thousand	people

'thirty thousands of soldiers'

Moreover, NOUN-NUM, which is considered to be the parallel form of NOUN-NUM-MW without the use of a unit word in Old Chinese, is also analyzed as an NP with a predicate, NUM, in Campbell (2004), Liu (1965), and Peyraube (1998). In this analysis, the noun of NOUN-NUM is usually the newly introduced topic of an utterance. The order of numeral sequence, NOUN-NUM-MW / NOUN-NUM, is reserved for expressing the exact quantity, mostly appearing in enumerative lists. The phrase NUM-UW as a predicate can still be found in modern Mandarin, as in (32) (canonical order cf. (33)). As Tang (1996) points out, the *shí zhī* 'ten CLF' is not a modifier for the object, *bǐ* 'pen'. Instead, *shí zhī* 'ten CLF' is predicated on the argument NP *bǐ* 'pen'.

(32) 他買了筆十枝

tā	mǎi	le	bǐ	shí	zhī
he	buy	ASP	pen	ten	CLF

' He bought pens, ten of them.'

(33) 他買了十枝筆

tā	mǎi	le	shí	zhī	bǐ
he	buy	ASP	ten	CLF	pen

'He bought ten pens.'

In brief, the sequence NOUN-NUM(-MW) in Old Chinese has its own characteristics and is a syntactic construction with its own semantic and pragmatic properties.

The other order, NUM(-MW)-NOUN, is also associated with a specific type of function in Old Chinese. The sequence can be used to depict the property of a noun in terms of the quantity of a certain dimension. The measure words in Old Chinese have two subclasses. One is a group of canonical measure words, such as 尺 *chǐ* 'foot', 丈 *zhàng* '3 and 1/3 meters', 里 *lǐ* 'half kilometer'. The other is a group of measure words specifying the type of container, such as 杯 *bèi* 'cup', 碗 *wǎn* 'bowl', and 瓢 *piáo* 'gourd' (Ōta 1987[2003]). The two major components have one salient difference when appearing in NUM(-MW)-NOUN. The difference is that the use of canonical measure words in Old Chinese requires a genitive marker 之 *zhī* (Wu et al. 2006), as shown in (34)-(36). There are a few exceptions, which are taken as a sign of the dropping of the genitive marker 之 *zhī* at a later stage in Chinese.

(34) NUM-MW-*zhi* 'GEN'-NOUN

六尺之孤 [from *ASACC*]

liù	chǐ	**zhī**	gū
six	foot	GEN	orphan

'an orphan who is six-feet tall'

(35) NUM-MW-*zhi* 'GEN'-NOUN

千里之地 [from *ASACC*]

qiān	lǐ	**zhī**	dì
thousand	half kilometer	GEN	land

'a land that is a five-hundred kilometer in size'

(36) NUM-MW-*zhi* 'GEN'-NOUN

百石之官 [from *ASACC*]

bǎi	shí	**zhī**	guān
hundred	a unit equal to 31 kilos	GEN	government official

'a government official whose salary weighs 31 hundreds of kilos '

If the slot of the measure word is filled by a noun from a type of container, the genitive marker 之 *zhī* is not required, as in (37)-(38).

(37) NUM-MW-NOUN

一簞食，一瓢飲 [from *ASACC*]

yì	dān	shì,	yì	piáo	yǐn
one	small bamboo utensil	food,	one	gourd	drink

'one small spoon of food; one gourd of drink'

(38) NUM-MW-NOUN

猶一杯水救一車薪之火 [from *ASACC*]

yóu	yì	bēi	shuǐ	jiù	yì	chē	xīn	zhī	huǒ
be.like	one	cup	water	save	one	wagon	wood	GEN	fire

'It is like using a cup of water to put out the fire over a cartful of wood'

The sequence NUM-MW(-*zhī* 'GEN')-NOUN differs greatly from the sequence NOUN-NUM-MW in both syntax and semantics. NUM-MW(-*zhī* 'GEN')-NOUN does not highlight the precise amount denoted by the numeral. Instead, the function of this numeral sequence is to describe a certain property of the noun (Liu 1965). For instance, (34) in the contexts does not refer to the exact height. The height is used to infer that the person is still a child.[8] The phrase in (35) describes the property of a land in the dimension of its size. The expression in (36) refers to the rank of a government official instead of a person's exact weight. The requirement of the genitive marker 之 *zhī* is thus claimed to be a marker delimiting the descriptive function (Wu et al. 2006). This descriptive function is even more prominent in cases where measure words are extensions from container nouns. For instance, (37) refers to the small portion of food, not the real amount.[9] Similarly, the measure words in (38) are used to emphasize the contrast of the two amounts, implying the impossibility to extinguish the fire. It is noteworthy that the numeral slot is not equally welcome to all numerals. The most productive filler is the numeral 'one'. There are some instances with higher numerals such as 百 *bǎi* 'hundred' and 千 *qiān* 'thousand', but other numerals rarely appear in this sequence (Wu et al. 2006). This constraint also supports the

[8] This example is taken from *Analects*. The expression is interpreted as 'a young orphan' in the annotation of *Analects* in later dynasties.

[9] The phrase is from *Analects*. The contexts are that a Confucius's disciple enjoys his spiritual life even though he can only afford a small portion of food.

hypothesis that NUM(-MW)-NOUN is used to describe a property in measurement, rather than being used for precise counting and measuring.

The NUM(-MW)-NOUN order stands for a descriptive function, which is significantly different from the enumerative function of NOUN-NUM-MW. In addition to semantic differences, the two sequences also differ in their syntactic structures. The NUM-MW in NUM-MW(-*zhī* 'GEN')-NOUN is a modifier to its following noun (Ōta 1987[2003]), whereas NUM-MW is considered to be a predicate in the sequence NOUN-NUM-MW (Wei 2003). In brief, the above discussion of how the two co-coexisting numeral sequences in Old Chinese behave differently shows that the two numeral sequences are associated with different functions.

The distinction of the two numeral sequences serves as criteria to examine the properties of the 'one'-phrases in question. When 'one'-phrases function exclusively as minimizer NPIs in Old Chinese, they appear in the sequence NUM-NOUN, as in (39)-(41). Negating the possibility of seeing a single person in (39) implies seeing nobody. The same logic is also observed in (40), where the possibility that 'a person died' is negated. Similarly, the concept of *seeing nothing* in (41) is formed by negating the possibility of *seeing* the smallest unit.

(39) 不見一人 [from *ASACC*]
bú jiàn [yì rén]
NEG see one person
'does not see even a single person'

(40) 無一人死 [from *ASACC*]
wú [yì rén] sǐ
EXT.NEG.V one person die
'There is not even a single person who died.

(41) 處明者不見暗中一物 [from *ASACC*]
chù míng zhě bú jiàn àn zhōng [yí wù]
locate bright -er/-or NEG see dark middle one thing
'Those who are in the brightness cannot see even a single thing in the darkness.'

The fact that minimizer NPIs is compatible with only the sequence NUM-MW-NOUN shows that 'one'-phrases as NPIs do not emphasize the precise quantity of one unit. Instead, the 'one'-phrases pick up one unit to refer to the smallest amount. It is also worth noting that the numeral 'one' cannot be replaced by higher numerals because when 'one'-MW-NOUN is used as an NPI, it refers to the smallest basic unit. Thus the NPI function of 'one'-phrases can be treated as an expression referring to a tiny amount.

Another descriptive function of 'one'-phrases without referring to the exact quantity is the interpretation of *few/little*, as in (42) and (43). The 'one'-phrase in (42) refers to the tiny amount of grain by pointing out the amount is less than one measure unit. This meaning of *few* is different from an NPI reading, which infers *zero*. Similarly, in (43), the contrast of two time spans implies the period of joy is extremely short. The 'one'-phrase in (43) can also be extended to an NPI reading. Furthermore, the insertion of the genitive marker 之 *zhī* between 'one'-MW and the noun in (43) also indicates the descriptive function of the 'one'-phrase.

(42) 不人得一升粟 [from *ASACC*]

bù rén de [yì shēng sù]
NEG person receive one liter grain
'The grain that people can receive did not even reach one liter.'

(43) 有終身之憂無一日之樂 [from *ASACC*]

yǒu zhōng shēn zhī yōu wú [yí rì zhī lè]
have whole life GEN worry NEG.V one day GEN joy
'(The saint) has a life-long anxiety and not one-day joy.'

In Old Chinese, 'one'-phrases exhibit several functions, including counting/listing 'one', referring to a near-zero amount as *few/little*, and serving as a minimizer NPI. These different readings are each associated with one of the two numeral sequences NUM-MW-NOUN and NOUN-NUM-MW. NOUN-NUM-MW highlights the precise amount, whereas NUM-MW-NOUN describes properties of the quantity. Different meanings expressed by 'one'-phrases can be classified by the distinction in numeral sequences. NOUN-'one'(-MW) is restricted to counting and listing only, where 'one' refers to a single unit. All the tokens of the NPI function and the *few/little* interpretation in the corpus consistently appear in the form 'one'(-MW)-NOUN, with no exceptions.

To summarize, the interpretation of 'one'-phrases in Old Chinese rely on the forms of two distinct sequences of numeral sequence to tease apart a quantity-denoting reading and a descriptive reading. A strong link between forms and meanings can be observed from the usage of 'one'-phrases.

2.3.2 Non-fixed 'one'-phrases as minimizers in Middle Chinese

Middle Chinese is a crucial period in the development of Chinese because major syntactic changes occurred in the transition between Old Chinese and Early Mandarin Chinese. It is also the incipient stage when the syntactic structures used in Modern Mandarin started to be shaped. Grammatical variations from Old Chinese to Middle Chinese are remarkable with respect to morphology and syntax. In general, Old Chinese relied on morphology more than Middle Chinese did. For example, pronouns in Old Chinese required case markers as well as affixation and inflexion to differentiate meanings expressed by the same noun (Wei 2003). Constituents of a sentence in Middle Chinese are arranged differently from those in Old Chinese (Wei 2000). Middle Chinese has two syntactic characteristics relevant to the discussion of non-fixed 'one'-phrases behaving as minimizers. One is that SVO was established as the canonical word order in this period. The other is that the sequence, NUM-MW-NOUN, became the dominant sequence, covering all the functions which used to be divided by NUM-MW-NOUN and NOUN-NUM-MW in Old Chinese.

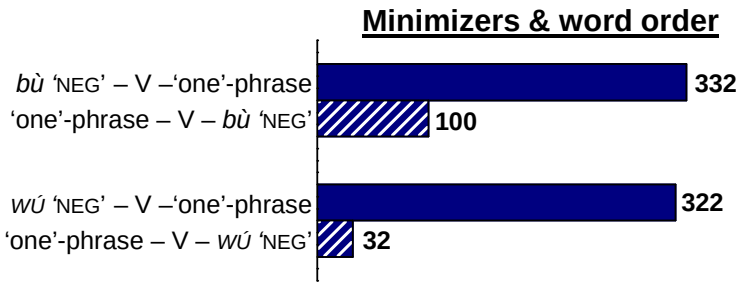
With respect to the issue of unmarked word order, Middle Chinese is the period when the SVO order was recognized as canonical. The SVO order took over the functions used to be covered by the SOV order. For example, in Old Chinese, the SOV order was employed when the object was a pronoun in negative sentences or was a *wh*-phrase in interrogative sentences. This change was completed no later than 1c. B.C.. The motivation of the word order change is related to the case system. In Old Chinese, adjacent subject and object in SOV could be distinguished by case markers on pronouns. However, case markers were dropped around Middle Chinese, which

implies the mechanism used to tease apart two adjacent pronouns disappeared. The later adoption of the SVO order for those cases used to appear in SOV is thus viewed as a strategy to distinguish subject and object due to the loss of case markers on pronouns (Peyraube 1997a, 1997b, and Wei 2000).

The other significant change is that all of the functions of numeral phrases shared by NUM-UW-NOUN and NOUN-NUM-UW in Old Chinese converged in the sequential order NUM-UW-NOUN in Middle Chinese. In other words, NUM-UW-NOUN in Middle Chinese became the unmarked order of a numeral phrase and it covered the function of both NUM-MW-NOUN and NOUN-NUM-MW in Old Chinese. The claim that NUM-UW-NOUN matured in Middle Chinese is made based on the productivity of classifiers occurring in the UW slot of this sequence. NUM-CLF-NOUN was not productive in Old Chinese due to the lack of a fully developed classifier system (Wei 2000). In brief, a clear division of labor between NUM-UW-NOUN and NOUN-NUM-UW disappeared in Middle Chinese, and both the descriptive function and the quantity-denoting function of numeral phrases have been expressed solely by the sequence NUM-UW-NOUN since Middle Chinese.

Given the two striking syntactic changes, the question concerned here is how 'one'-phrases as minimizer NPIs behaved in Middle Chinese with these two syntactic changes in terms of word order. With respect to the establishment of NUM-UW-NOUN as the unmarked order of a numeral phrase, it did not affect the 'one'-phrases functioning as minimizer NPIs. The association of the minimizer NPI function exclusively with the sequence NUM-UW-NOUN was already present in Old Chinese, and this property remained unchanged in Middle Chinese. Then an ensuing issue is how minimizer NPI function became distinguished from other functions expressed by the same numeral sequence in Middle Chinese. A likely hypothesis is that the association of minimizers with another construction became more salient and that construction eventually played a role in pinning down the reading of the polysemous sequence NUM-UW-NOUN.

Since minimizer NPIs in modern Mandarin favor the preverbal position, there is the possibility that the OV versus VO contrast served to seperate the minimizer NPI function from other readings in Middle Chinese. To test this hypothesis, the first question to be answered is whether the establishment of SVO as the canonical order in Middle Chinese affected the syntactic position where 'one'-phrases as minimizers can occur. SVO is recognized as an unmarked order in Middle Chinese (Wei 2000). Therefore, if a full NP as a direct object appears in the preverbal position, it should carry an additional function. For instance, Aldridge (2015) proposes that object fronting in Middle Chinese is triggered by focus from a generative approach. In order to answer the question whether 'one'-phrases as NPIs tended to occur in a preverbal position in Middle Chinese, four combinations of the numeral *yi* 'one' and two negators, *bù* and *wú*, are searched in the *Corpus of Middle Chinese*. The two combinations, ***wú* 'NEG'…*yi* 'one'** and ***bù* 'NEG'…*yi* 'one'**, stand for the sequence of **S-NEG-V-'one'-phrase**, whereas ***yi* 'one'… *wú* 'NEG'** and ***yi* 'one'… *bù* 'NEG'** are intended to target the sequence **S-'one'-phrase-NEG-V.** Tokens of an NPI reading are calculated from each of the four search results. The total tokens of non-fixed 'one'-phrases used as minimizer NPIs in VO and OV in the *Corpus of Middle Chinese* are summarized in Figure 2.2.



Search results (tokens)	
bù 'NEG' …'one' (Sample: 5000)	12,030
'one'… *bù* 'NEG (Sample: 5000)	11,374
wú 'NEG' …'one'	4,620
'one' … *wú* 'NEG'	4,968

Figure 2.2: Tokens of non-fixed 'one'-phrases as minimizers in VO and OV word orders in the *Corpus of Middle Chinese* (total number of characters: 19,737,152)

The bars in Figure 2.2 show that the majority of non-fixed 'one'-phrases with an NPI function appeared in VO word order in Middle Chinese, whereas there were also a fair amount of 'one'-phrases as minimizers in OV order. I will discuss how the 'one'-phrases behaved in VO order and OV order in section 2.3.2.1 and section 2.3.2.2, respectively.

2.3.2.1 Non-fixed 'one'-phrases as minimizers in VO order in Middle Chinese

In Middle Chinese, the minimizer NPI function of a 'one'-phrase occurred mainly in the VO order, as shown in (44)-(47). Examples (44) and (45) contain general negators while examples (46) and (47) have the existential negator *wú.* Examples (46) and (47) are classified into the VO group because they obey the canonical word order of the Mandarin existential construction, as defined in (15) on page 27. Notably, when the NP of which existence is concerned is followed by a predicative phrase, this type of existential construction is not found in OV word order. The 'one'-phrases in (44)-(47) all designate one single unit. The concept of one unit is considered to be the smallest atomic unit of the denotation of the noun. In these examples, the verbs designated a gradable event, and the one unit profiled the minimal extent that the event was instantiated. The negation of the smallest extent to which the predicate was instantiated inferred the failure of satisfying to any higher extent. This inference led to an emphatic function. For instance, an exchange of conversation was a gradable duration in (45). The phrase, 'one word', served as the measure unit denoting the minimal instantiation of exchanging a conversation. The failure of instantiating the least bit of the predicate implied the negation of other degrees. Interestingly, the 'one'-phrase in (47) has its unit word and NP omitted. In Middle Chinese, this kind of bare 'one', which stood for a 'one'-phrase when a definite set was specified earlier in the context, appeared in a partitive construction. For example, *sān shì* 'three things' is the definite subset and the bare 'one' refers to one unit within the set. The one unit also designated the smallest fulfillment of a gradable event.

(44) 今日目下，不睹一人 [from *ASACC*]

jīn	rì	mù	xià，	bù	dǔ	[yì	rén]
now	day	eye	under	NEG	see	one	person

'Nowadays not a single person is seen.'

(45) 客主不交一言 [from *ASACC*]

kè	zhǔ	bù	jiāo	[yì	yán]
guest	host	NEG	exchange	one	word

'The guest and the host did not exchange a single word.'

(46) 一馬之走，無一毫而不動 [from *ASACC*]

yì	mǎ	zhī	zǒu，	wú	[yì	háo]	ér	bú	dòng
one	horse	GEN	walk	NEG.EXT.V	one	hair	CONJ	NEG	move

'When a horse walks, there is not a single hair that does not move.'

(47) 三事無一成 [from *ASACC*]

sān	shì	wú	[yì]	chéng
three	thing	NEG.EXT.V	one	accomplish

'Not a single thing among the three is accomplished.'

The 'one'-phrases used as minimizers in VO order under the scope of negation in Middle Chinese have two notable features. One is that a 'one'-phrase in this environment was ambiguous between an NPI reading and a *few/little* reading if the unit word did not inherently denote a minimal amount. The other is that the sequence NEG-V-'one'-phrase attracted degree adverbials when the 'one'-phrase was interpreted as an NPI. These two features are indicators showing that the semantics encoded in VO differed significantly from that in OV order. The object position of VO order under negation accommodated multiple readings of a 'one'-phrase, not for the minimizer reading only. The two features in VO order will be discussed below.

One unit is normally transparent as the minimal unit since the denotation of the unit is conceived as a small quantity. For example, *wink* in *sleep a wink* is obviously a short duration. Similarly, Middle Chinese *háo* 'hair' in (46) is clearly a small amount. Yet, it is not necessary for a unit word to be a transparently minimal amount. The concept of a minimal quantity can be construed against a well-defined base regardless of the nature of the unit. Such examples are observed in Middle Chinese, as shown in (48) and (49). *Lǚ* is a measure word in Middle Chinese for a unit of 500 people, which is not inherently a minimal quantity. As for *rì* 'day', it is also not an intrinsically minimal unit. The duration designated by *rì* 'day' can be short or long depending on the base.

(48) 眾無一旅 [from *ASACC*]

zhòng	wú	[yì	lǚ]
crowd	NEG	one	a unit of 500 people

'The crowd does not reach a 500-people unit.'

(49) 邊境無一日之娛 [from *ASACC*]

biānjìng	wú	[yí	rì	zhī	yú]
border	NEG.EXT.V	one	day	GEN	entertainment

'(The people) at the border do not have one day's entertainment.'

The kind of one unit might cause ambiguity between an NPI reading and a *few/little* reading in the order **NEG…'one'** in Middle Chinese. For instance, two interpretations for the sentence in (48) can be found when it is paraphrased in Modern Chinese. One is the *few/little* interpretation. As

shown in (48), the 'one'-phrase under negation emphasized the small amount of people by indicating that the number failed to reach even a basic counting unit in army. The other is the NPI reading, which is understood as 'there was not even a 500-people unit'. Sentence (49) is another example demonstrating the ambiguity. It can be interpreted as either 'people have no entertainment' or 'people have little entertainment'. The ambiguity arises because the base of the measure word *ri* 'day' is not specified. Neither of the two readings denotes the exact quantity of one unit. Instead, they are both construed in a gradable scale and they profile the bottom end of the scale. Importantly, it is in the NEG-V-O order that 'one'-phrases could be ambiguous. Middle Chinese 'one'-phrases in the other order, O-NEG-V, received only an NPI reading. Unit words without an inherently small quantity were also not found in examples with the O-NEG-V order.

Another piece of evidence that supports the hypothesis that VO and OV have different semantics is shown in the contrast in (50) and (51). The 'one'-phrase, *yi ren* 'one person', under negation in the two orders had different meanings. The 'one'-phrase in (50) was a referential expression referring to a person mentioned earlier in the context, whose name is 張華 *Zhāng huá*. The identical phrase in OV order must be interpreted as a mininizer NPI used for intensifying negation, as shown in (51). The referential function was not possible in the preverbal position based on the data from *Corpus of Middle Chinese*.

(50) 不得歸罪於一人 [from *ASACC*]

bù	de	guī	zuì	yú	[yì	rén]
NEG	can	attribute	guilt	to	one	person

'The guiltiness cannot be attributed to one person.'

(51) 天下太平，一人不刑 [from *ASACC*]

tiān	xià	tàiping，	[yì	rén]	bù	xíng
sky	under	peaceful	one	person	NEG	be.punished

'The world is very peaceful and not a single person has to be punished.'

Although NEG-V-'one'-phrase in Middle Chinese had multiple interpretations, there was one feature that can successfully distinguish an NPI function from others. If the sequence was modified by a degree adverbial, the 'one'-phrase must be understood as a minimizer NPI. The degree modifiers occurred in a pre-negator position. Adverbials such as 竟 *jing* 'finally' and 殆 *dai* 'nearly/ all' bore an emphasis on the degree of the extent to which the predicate was instantiated, as shown in (52) and (53). The degree modification was not found to be compatible with other readings of a 'one'-phrase. For example, the entire 49 tokens of 'one'-phrases with the *few* reading in the corpus all lack the adverbial modification. The compatibility of the degree adverbials with a minimizer NPI reading of a 'one'-phrase rather than with other readings shows the distinct emphatic tone of minimizers.

(52) 竟無一言 [from *ASACC*]

jìng	wú	[yì	yán]
finally	NEG.V	one	word

'Finally not even a word is said.'

(53) 殆無一字空設 [from *ASACC*]

dài	wú	[yí	zì]	kōng	shè
nearly/all	NEG.EXT.V	one	word	vacant	establish

'There is not a single empty word.'

In Middle Chinese, the degree modification of VO order not only helped to make the function of a minimizer NPI distinct among others but also reflected the properties of minimizers, such as their emphatic nature and focal prominence. However, the postverbal object was not a unique position reserved for a 'one'-phrase as a minimizer only. The issues as to how 'one'-phrases as minimizers interacted with OV word order will be dicussed in the next section.

2.3.2.2 Non-fixed 'one'-phrases as minimizers in OV order in Middle Chinese

Despite the fact that the majority of 'one'-phrases as minimizer NPIs appeared in VO order in Middle Chinese, a considerable portion of 'one'-phrases as minimizer NPIs is still found in OV order in the corpus, as shown in (54)-(57). The negation of 'reading one line' in example (54) induced the inference that no reading was done. The emphasis of the truth condition that no fish was caught in (55) was manifested by negating catching 'a scale of fish', the minimal unit and also a metonymy for fish. The 'one'-phrases as minimizers in the preverbal position tended to be the minimal atomic unit. For example, both *yí zì* 'one word' in (56) and *yì háo* 'one MW.money' in (57) cannot be further divided into a smaller unit.

(54) 一行書不讀 [from *ASACC*]

[yì	háng	shū]	bù	dú
one	line	book	NEG	read

'not read even one line in a book'

(55) 一鱗不獲 [from *ASACC*]

[yì	lín]	bú	huò
one	scale.of.fish	NEG	get

'not catch even a scale of fish'

(56) 一字無遺 [from *ASACC*]

[yí	zì]	wú	yí
one	word	NEG	miss

'not miss even a word'

(57) 凡諸貲物一毫無犯 [from *ASACC*]

fán	zhū	zī	wù	[yì	háo]	wú	fàn
all	every	money	thing	one	MW.money	NEG	invade

'Not even a single item is taken from the fortune.'

These examples show that minimizers were compatible with the preverbal position in Middle Chinese since they both tended to feature a rhetorical property of emphasis. A 'one'-phrase appearing as the object of the O-NEG-V order in Middle Chinese was strictly limited to an NPI reading. No examples of other functions of a 'one'-phrase such as enumeration and reference are found in the O-NEG-V sequence. In contrast, the NEG-V-O order can tolerate multiple

interpretations of a ‘one’-phrase. Thus, the specific association between the preverbal position and an NPI began to emerge in Middle Chinese. OV order can be viewed as a latter recruited way to separate the NPI reading from other readings coexisting in the form of NUM-UW-NOUN after the disappearance of the sequential contrast in a numeral phrase.

In Middle Chinese, the numeral ‘one’ occurring alone without any unit word and/or noun can also be understood as a minimal amount. ‘One’ behaved as an indefinite pronoun with information such as the designated noun and the unit of the noun supplied from the context. This use of a bare ‘one’ occurred in the preverbal object position. As for VO order, this usage was not present. Examples of a bare ‘one’ are shown in (58)-(60). The bare ‘one’s in (58)-(60) are the preverbal object of the predicates, *qǔ* ‘take’, *cóng* ‘obey’, and *shòu* ‘accept’ respectively. (58) describes that an upright governor did not take anything that belonged to the public on the day he left his position. ‘One’ in this example designated the atomic unit of public fortune. Similarly, the ‘one’ in (59) referred to the unit of advice and the ‘one’ in (60) meant the atomic unit of the bestowment.

(58) 去職之日，一無所取 [from *ASACC*]
qù zhí zhī rì， yì wú suǒ qǔ
leave job GEN day one NEG REL take
‘Nothing is taken on the day he left his job.’

(59) 群臣多諫，一不從 [from *ASACC*]
qún chén duō jiàn， yí bù cóng
crowd official many admonition one NEG obey
‘The officials gave much advice, but none of the advice was followed.’

(60) 贈遺一皆不受 [from *ASACC*]
zèngyí yì jiē bú shòu
bestowment one all NEG accept
‘None of the bestowment was accepted.’

The use of a pronoun ‘one’ appeared in two conditions. First, a class of entities had to be defined earlier than the occurrence of the bare ‘one’, such as ‘fortune’, ‘advice’, and ‘bestowment’. Second, the subset was a collection noun with different items, which might not be covered by the same unit word or by a classifier. In this case, the bare ‘one’ can be a conceptually smallest unit for every item in the collection. With the two conditions, the bare ‘one’ as a minimizer added an exhaustive reading to the sentence. For example, the subset in (60) was the bestowment, which might consist of various items and forms. The bare ‘one’ can be applied to each item individually, and the whole subset can thus be exhausted. The modification of *jie* ‘all’ in (60) is a piece of supporting evidence of the exhaustive reading since it was an overt marker indicating that all items within the subset were exhausted. In the data from Middle Chinese, this exhaustive reading only appeared in the OV order. The particular restriction further differentiates OV order from VO order. It is OV order that provided the environment for ‘one’-phrases as minimizers to develop a stronger emphatic function. Although the attraction of minimizers to a preverbal position began in Middle Chinese, a unique relationship of the form and the meaning was already notable in this stage.

The bare ‘one’ even developed an adverbial function, the first occurrence of which can be traced back to Middle Chinese. As shown in (61), ‘one’ was not a preverbal object of the negative existential predicate since it has a postverbal object ‘surrenderer’. The omission of ‘one’ without causing ungrammaticality also supports its status as a modifier. The modifier ‘one’ was an NPI because it was required to occur with a negator. No intervention was allowed between the adverbial ‘one’ and a negator. Moreover, the adverbial ‘one’ induced an exhaustive reading. As in (61), the modifier ‘one’ inferred all the one hundred people within a subset were exhausted.

(61) 麾下百人皆鬬死，一無降者 [from *ASACC*]

huī	xià	bǎi	rén	jiē	dòu	sǐ,	yì	wú	xiángzhě
flag	under	hundred	people	all	fight	die	one	NEG.EXT.V	surrenderer

‘The hundred people in this company all fought to death. There was not one who surrendered.’

The function of the adverbial ‘one’ was absent in Old Chinese. It was not until Middle Chinese that this function was observed. Negation and OV order were the environments that constrained the grammaticalization of ‘one’ from a numeral to an adverbial NPI.

2.3.2.3 Interim summary of the distribution of non-fixed ‘one’-phrases in Middle Chinese

Middle Chinese is the crucial period when the redistribution of different functions expressed by the form ‘ONE’-UW-NOUN took place. The two types of word order related to the development of ‘one’-phrases changed significantly from Old Chinese to Middle Chinese. First, SVO became the canonical word order. Second, the division of UM-UW-NOUN and NOUN- NUM-UW in Old Chinese disappeared and the numeral sequence NUM-UW-NOUN in Middle Chinese undertook all the functions of the ‘one’-phrases, such as the enumerative and descriptive functions. An NPI function thus cannot be distinguished from other quantity-denoting functions by the NUM-UW-NOUN sequence. However, when non-fixed ‘one’-phrases were used as minimizers, they started to be associated with the preverbal position. When ‘one’-phrases appeared in OV order, the only possible reading was a minimizer NPI. The association with OV order arose after the disappearance of the sequential contrast of a numeral phrase. The association between a preverbal position and the ‘one’-phrases as minimizer NPIs was due crucially to the shared rhetorical function of emphasis. To be more precise, the preverbal position is claimed to bear focal prominence, and the minimizer NPIs have an emphatic function on negation.

Although the majority of minimizer NPIs still stayed in VO order in Middle Chinese, the percentage of ‘one’-phrases as NPIs in OV order increased in comparison with that in Old Chinese, as shown in Table 2.1. The total tokens of the NPI function from each of the four combinations are compared in terms of percentage across the two stages. The sharp increase of an NPI function in the proportion of a preverbal position in Middle Chinese indicates the initial establishment of the connection between focus and minimizers.

Table 2.1: Percentage of the NPI function in the four sequences containing a negator and a 'one'-phrase in VO and OV orders in Old and Middle Chinese

	***bu* 'NEG'-V-O**	**O-*bu* 'NEG'-V**	***wu* 'NEG'-V-O**	**O-*wu* 'NEG'-V**
Old Chinese	61.9%	0.7%	36.9%	0.3%
Middle Chinese	42.2%	12.7%	40.9%	4%

The distribution of minimizer NPIs in Middle Chinese was constrained by the syntactic properties, unmarked SVO and NUM-UW-NOUN. Whether or not the connection of minimizers with OV order would become more prominent in the next period, namely the Early Mandarin Chinese period, will be discussed in the next section.

2.3.3 Non-fixed 'one'-phrases in Early Mandarin Chinese

The analyses of the 'one'-phrases in Old Chinese and Middle Chinese show that the significant changes of the two types of word orders, SVO versus SOV and NUM-UW-NOUN versus NOUN-NUM-UW, conditioned the development of 'one'-phrases as minimizers. The distribution of the 'one'-phrases as minimizers in these word orders in Middle Chinese also presents some features specific to an NPI reading, such as the preference of focal prominence and the compatibility with degree modifiers. The issues of whether the two properties maintained their prominence and how the 'one'-phrases behaved as minimizer NPIs constrained by the two syntactic orders will be discussed in this section.

The syntactic structure of Early Mandarin Chinese was not different from that of Middle Chinese with respect to the general word order and numeral phrases. Early Mandarin had SVO as the unmarked word order and the sequence NUM-UW-NOUN as the canonical numeral-phrase word order (Wei 2003). With respect to numeral phrases, the most salient difference between Middle Chinese and Early Mandarin is that the classifier system reached its maturity and the use of the classifier became obligatory. To figure out the influences of the two types of orders on minimizers, the four combinations, ***wú* 'NEG'…*yi* 'one'**, ***bù* 'NEG'…*yi* 'one'**, ***yi* 'one'… *wú* 'NEG'**, and ***yi* 'one'… *bù* 'NEG'** were searched in the *Corpus of Early Mandarin Chinese*. The search results of the ***bù*** pair returned more than 80,000 results, and the ***wú*** pair more than 20,000 results. The analysis here is done based on a random 5000-token sample extracted from each of the four search results. The bars in Figure 2.3 represent the normalized numbers of use of the minimizer NPI function in each of the 5000-token sample based on the total number of occurrences of the search result. Figure 2.3 shows a crucial change in the distribution of Early Mandarin minimizers, which behaved differently with negators *wú* and *bù*. The 'one'-phrases as minimizers occurred more frequently in the canonical VO order than OV when the negator was *wú* 'NEG', as shown in Figure 2.3. Such a distributional pattern is not different from that in Old Chinese and Middle Chinese, where the majority of the minimizer NPIs were in VO order. Nevertheless, the number of NPIs with the negator *bù* in the OV order exceeds that in the VO order. This is the first time that 'one'-phrases as minimizer NPIs have more occurrences in OV than in VO since Old Chinese. This is taken as a sign of the enhancement of the connection between the NPI function and the preverbal focus position.

Search results (tokens) [sample: 5000]	
bù 'NEG' …'one'	95,111
'one'… *bù* 'NEG	85,225
WÚ 'NEG' …'one'	21,888
'one' … *WÚ* 'NEG'	22,875

Figure 2.3: The tokens of non-fixed 'one'-phrases as minimizers in VO and OV word orders in *Corpus of Early Mandarin Chinese* (total characters: 36,159,860)

In order to better depict the incremental development of the 'one'-phrases as minimizers during the long period spanning more than 13 centuries, the data gathered from *Corpus of Early Mandarin Chinese* are divided into two groups for discussion, Early Mandarin I (7c. A.D. to 10c. A.D.) and Early Mandarin II (11c. A.D. to 19c. A.D.). Since 'one'-phrases as minimizers behaved differently under the scope of the negators *bù* and *wú*, the two groups will be examined separately. A comparison of 'one'-phrases as minimizers with negator *bù* in VO and OV order and an analysis of how they behaved across the two periods will be discussed in Section 2.3.3.1. As for 'one'-phrases with negator *wú*, their properties across the two periods will be compared in Section 2.3.3.2.

2.3.3.1 Non-fixed 'one'-phrases with negator *bù* in Early Mandarin Chinese

The tokens of the 'one'-phrases as minimizer NPIs with negator *bù* in Early Mandarin Chinese in Figure 2.3 are here divided into two groups, Early Mandarin Chinese I and Early Mandarin Chinese II. The bars in Figure 2.4 show that the number of 'one'-phrases as minimizer NPIs in VO order exceeds that in OV order in Early Mandarin I, but the relation is reversed in Early Mandarin II, where the quantity of 'one'-phrases as minimizer NPIs in OV order outnumbers that in VO order. This situation where more 'one'-phrases as minimizers appeared in OV than VO order was unprecedented and it indicates that the 'one'-phrases as minimizer NPIs favored the preverbal position. The minimizers in each of the two orders had their own characteristics. The properties and examples of these 'one'-phrases in VO and OV orders will be discussed below.

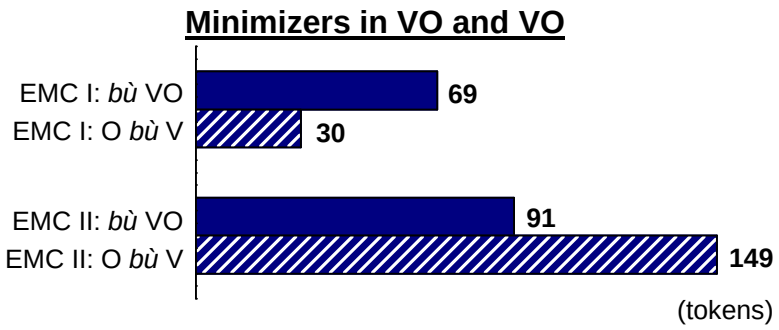


Figure 2.4: The tokens of non-fixed 'one'-phrases as minimizer NPIs with negator *bù* in VO and OV orders in Early Mandarin I & II

The 'one'-phrases with negator *bù* in Early Mandarin differ from those in Old Chinese and Middle Chinese mainly in two aspects. First, the occurrences of a classifier in the UW slot increased. Second, scalar-sensitive particles started to get involved in OV order when 'one'-phrases were interpreted as minimizers. These two features of 'one'-phrases will constitute the main discussion in this section.

Firstly, the use of classifiers became obligatory in a 'one'-phase when the phrase was used to denote an object. This phenomenon indicates the maturity of the classifier system in Early Mandarin. Measure words in the UW slot of a 'one'-phrase already appeared in Old Chinese, and classifiers came approximately in Middle Chinese. The employment of classifiers is an important areal feature in East Asian languages, whereas measure words are used pervasively across languages. The variety of classifiers in the 'one'-phrases expanded from Old Chinese to Early Mandarin. The classifiers not only describe the physical properties of an object but also infer the smallest amount of the object in question perceived as a whole. The examples of 'one'-phrases as minimizers with negator *bù* in VO order from Early Mandarin I are listed in (62)-(63). The classifiers, *lì* in (62) and *jīng* in (63), delimit the smallest individualized unit of the objects.

(62) 不曾咬一粒米 [from *ASACC*]

bù	céng	yǎo	yí	lì	mǐ
NEG	ever	bite	one	grain.CLF	rice

'never eat a grain of rice'

(63) 不種一莖菜 [from *ASACC*]

bù	zhòng	yì	jīng	cài
NEG	plant	one	stem	vegetable

'not plant a stalk of vegetable'

In the data from Early Mandarin II, it was even more common to have a classifier in a 'one'-phrase to denote the salient characteristic of the overall shape as the smallest unit. It was also the period where the general classifier, 個 *ge*, which is used for nouns that do not belong to any specialized classifier categories (Lyons 1977), had the most occurrences in the periods of Chinese discussed so far. The pervasive use of the general classifier *ge* in Early Mandarin II reflects two features of numeral phrases. One is the establishment of requiring a classifier in counting (Wei 2000). The other is that the general classifier *ge* can be used to designate the

smallest unit of the noun in question. In Early Mandarin II, 22 out of the 91 tokens of the 'one'-phrases with negator *bù* in VO order have the general classifier *ge* filled in the unit word slot, as shown in (64) and (65). In example (65), the general classifier *ge* even occurred with the noun *xìn* 'letter', which normally appeared with the more specific classifier, 封 *fēng*. The use of the general classifier *ge* in (64) and (65) shows its function of referring to the smallest atomic unit of a variety of nouns.

(64) 吐不得一個字 [from *ASACC*]

tù	bù	de	[yí	ge	zì]
spit	NEG	can	one	CLF	word

'cannot utter a word'

(65) 怎麼不捎一個信到家中 [from *ASACC*]

zěnme	bù	shāo	[yí	ge	xìn]	dào	jiā	zhōng
why	NEG	take	one	CLF	letter	arrive	home	middle

'Why didn't you send a letter home?'

The other important characteristic is the involvement of scalar particles in OV order to mark additive focus. In Early Mandarin, there were more 'one'-phrases as minimizers in OV order than in VO order. This tendency implies that the semantics of the preverbal position played a role in determining the reading of a 'one'-phrase in Early Mandarin. In Modern Mandarin, the preverbal object is claimed to be associated with a variety of focus types, such as contrastive, restrictive, and additive focus (N. Zhang 2000), as shown in the bracketed phrases in (66)-(68). Contrastive focus contrasts one referent with other alternatives, as shown in (66). Mandarin restrictive focus is similar to English *only*, which exclusively picks up a specific element of a set of alternatives as defined in Herrmann (2013).). As observed by König (1991), the contribution of *only* is marking a certain part of an utterance as exclusively relevant and more important than other possible alternatives. Mandarin restrictive focus in the preverbal object position is marked by the restrictive focus marker, as shown in (67). Additive focus expresses that the predication holds for at least one alternative of the expression in focus (Krifka 1998). In Mandarin Chinese, the preverbal object position is surrounded by *lian* 'even' and a scalar particle, as in (68).

(66) 他這本書看了，那本書還沒看。

tā	[zhè	běn	shū]	kàn	le，	[nà	běn	shū]	hái	méi	kàn
he	this	CLF	book	read	PFV	that	CLF	book	yet	NEG	read

'He read THIS BOOK, but hasn't read THAT BOOK.'

(67) 他只有紅酒才喝。

tā	zhǐyǒu	[hóng	jiǔ]	cái	hē
he	only	red	wine	only	drink

'He drinks only red wine.'

(68) 他連這部電影都看過。

tā	lián	[zhè	bù	diànyǐng]	dōu	kàn	guò
he	even	this	CLF	movie	SCALAR FOCUS	watch	EXP

'He even watched this movie.'

Additive focus highlights other alternatives included as a variable of the sentence proposition (N. Zhang 2000), which is similar to English *even*. Since minimizers are claimed to have a scalar reading on alternatives (Israel 2011), the focus compatible with 'one'-phrases as minimizers in the preverbal position should be the additive type. The crucial evidence for the connection between minimizers and the additive focus is the occurrence of the focus-sensitive particles. In Early Mandarin, a focus-sensitive scalar particle could be inserted between a preverbal 'one'-phrase and a negator, which is not observed in the data of Old and Middle Chinese. The involvement of the particles also increased during the period of Early Mandarin Chinese. In Early Mandarin I, 23 % of the 'one'-phrases as minimizers with negator *bù* in OV order had a focus-sensitive particle involved, and the percentage increased to 44 % in Early Mandarin II.

In the data of Early Mandarin I, there are 7 out of 30 'one'-phrases with a focus-sensitive particle in O-*bù* 'NEG'-V order. Examples are shown in (69)-(71), where the bolded elements 也 *yě*, 亦 *yì*, and 都 *dōu* preceding the negator are focus-sensitive particles with an emphasis on the failure of a predicate to be satisfied.

(69) 一字也無 [from *ASACC*]
[yí zì] **yě** wú
one word YE NEG.have
'does not have even a word'

(70) 一滴亦不得飲 [from *ASACC*]
[yì dī] **yì** bù dé yǐn
one drop YI NEG can drink
'could not drink even a drop'

(71) 一點紅塵都不染 [from *ASACC*]
[yì diǎn hóngchén] **dōu** bù rǎn
one dot the world of mortals DOU NEG dye
'does not get involved in the world of mortals at all'

The particles can be divided into two types based on their similarities. One type includes *yě* and *yì*, which can function as focus-sensitive additive particles (cf. *too*, *also*) and as focus-sensitive scalar particles (cf. *even*) (Kobuchi-Philip 2009, Szabolcsi et. al 2014). *Yě* is the form pervasively used in modern Mandarin, whereas *yì* is considered to be an archaic form of *yě*. The other type is *dōu*, which can serve as a focus-sensitive scalar particle, a universal quantifier, and a distributive operator in modern Chinese (Szabolcsi et. al 2014). Although each of the two groups of particles covers a different range of functions, they are both understood as focus-sensitive scalar particles when attached to those 'one'-phrases expressing a minimal amount. In the environment where both negation and minimizers co-occurred, the particles amounted to the equivalent of *not even* in English. In Early Mandarin, the particles induced focus-sensitive presupposition from the contexts. As exemplified in (69)-(71), the particles marked the 'one'-phrase as the minimal amount that satisfied the predicate. The failure of obtaining the minimum entails the denial of higher degrees, resulting in emphatic total negation.

The involvement of a focus-sensitive scalar particle in OV order increased from Early Mandarin I to Early Mandarin II. In Early Mandarin II, 64 out of the total 149 tokens in O-NEG-V order have a scalar particle between the negator *bù* and a minimizer. The total 64 tokens consist of 61 cases of 也 *yě*, 3 cases of 都 *dōu*, and 1 case of 全 *quán*. The scalar particles appeared in the position immediately preceding the negator, as shown in (72)-(75). The two particles, 也 *yě* and 都 *dōu*, already appeared earlier in Early Mandarin I as scalar markers in the OV order. The other particle, 全 *quán*, which is translated as *all*, can be treated as a variant of 都 *dōu*. In addition to these focus-sensitive scalar particles, a prenominal focus marker, 連 *lian* 'even', is also observed in Early Mandarin II, as shown in (73). In Modern Mandarin, the marker *lian* is required to co-occur with another focus marker 也 *yě* or 都 *dōu* (N. Zhang 2000). *Lian* 'even' explicitly indicated additive focus in Early Mandarin.

(72) 一釐也不肯讓 [from *ASACC*]

[yì lí] **yě** bù kěn rang
one one-third millimeter also NEG be willing to yield
'is not willing to yield even a third of a millimeter'

(73) 連一個大錢也摸不著 [from *ASACC*]

lián [yí ge dà qián] **yě** mō bù zháo
even one CLF big coin also find NEG ASP
'could not find even a big coin'

(74) 一句話都說不出 [from *ASACC*]

[yí jù huà] **dōu** shuō bù chū
one CLF speech all speak NEG out
'could not utter even a sentence'

(75) 一字全無 [from *ASACC*]

yí zì **quán** wú
oneword all NEG.EXT.V
'There is not even a word.'

The involvement of the scalar particles in the preverbal focus position did not happen until Early Mandarin I, but the employment of the marker then increased rapidly. In modern Mandarin, they are treated as obligatory focus markers of a preverbal object with an additive reading (cf. *even*) (N. Zhang 2000). The occurrence of the focus-sensitive particles in OV order carries two important messages. First, it supports the fact that the preverbal object is a focus associate. The differences between OV and VO order in terms of semantics can be overtly distinguished. As in Old Chinese and Middle Chinese, a 'one'-phrase can only be interpreted as a minimizer NPI when appearing in OV order but not in VO order. In Early Mandarin, the particles clearly indicate the preverbal position was a focal position. The connection between minimizers and focus clearly emerged. Second, the focus associated with minimizers is of an additive type. Different types of focus in preverbal position were not specified by particles in Old and Middle Chinese. It was in Early Mandarin that the additive type of focus started to get marked by scalar particles. The use of scalar particles to mark the additive type of focus became obligatory in Modern Mandarin. Furthermore, the involvement of scalar particles reflects the ongoing

tendency for Chinese syntax to gradually recruit more particles to distinguish different functions originally realized in the same form. For example, the 'one'-phrases as minimizers are inherently scalar regardless of the presence of a scalar particle. The scalar particles do not merely differentiate the additive focus from others but also overtly express the scalar characteristic of minimizers.

In summary, this section covers the properties of 'one'-phrases as minimizers under the scope of negator *bù* in Early Mandarin. The distribution of 'one'-phrases as minimizers in Early Mandarin underwent a dramatic change, with more 'one'-phrases as minimizers occurring in OV than in VO order. The connection between the preverbal position and minimizers became salient. The 'one'-phrases in Early Mandarin differ from those in Old Chinese and Middle Chinese in two ways. First, the proportion of classifiers as a unit word in a 'one'-phrase increased; the classifiers designated the overall perceived shape of an object and inferred the smallest unit. Second, focus-sensitive scalar particles began to be involved in OV order to specify the type of focus in the preverbal position. The participation of the particles not only distinguished the function of OV order from that of VO but also overtly revealed the scalar property encoded within 'one'-phrases as minimizers. How 'one'-phrases as minimizers behaved under the scope of the other negator *wú* in Early Mandarin is a different story. The interaction between minimizers under the scope of *wú* and the two word orders will be discussed in the next section.

2.3.3.2 Non-fixed 'one'-phrases with negator *wú* in Early Mandarin Chinese

When the 'one'-phrases as minimizer NPIs occurred under the scope of the negator *wú* in Early Mandarin, the majority of them still remained in the object position of the VO order. The number of 'one'-phrases as minimizers in OV order is less than that in VO order in both Early Mandarin I and Early Mandarin II, as shown in Figure 2.5.

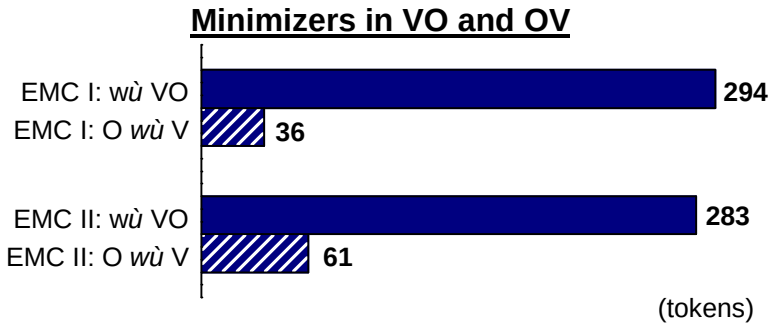


Figure 2.5: The tokens of non-fixed 'one'-phrases as minimizer NPIs with negator *wú* in VO and OV orders in Early Mandarin I & II

The higher frequency of minimizers in VO than in OV with negator *wú* is related to the meaning of this negator, which is a combination of negation and the existential verb 'there is'. The negator *wú* heads an existential construction, where the postverbal noun of this particular negator is new information and is profiled in the information structure, which will be discussed later in Section 2.4.2.

Although the ‘one’-phrases with negator *wú* did not have the same dramatic change as that of the ‘one’-phrases with negator *bù* in Early Mandarin, they possessed four characteristics closely related to the semantics of minimizers. First, similar to the ‘one’-phrases with negator *bù* in Early Mandarin, there were more numeral classifiers used as a unit word of a ‘one’-phrase in comparison with previous stages of Chinese. Second, there was a tendency of involving adverbials in VO order. Third, focus-sensitive scalar particles began to appear in O-*wu* ‘NEG’-V order. Fourth, ‘one’ alone could be an NPI adverbial modifying negator *wú*. These four points will be discussed below.

Firstly, the frequency of the classifiers occupying the position of a unit word in a ‘one’-phrase increased in Early Mandarin when compared to previous stages of Chinese. Classifiers have been used to describe the overall perception of objects, and thus have served as unit words. The combination of the numeral ‘one’ and a classifier is therefore used to mean the smallest gestalt unit of an object. In Early Mandarin, such a combination was enough to express the minimal unit of its referent. For instance, 箇 *ge* as a general classifier in (76) was used for the counting unit of human being, which also inferred the smallest counting unit of human being. The noun of a ‘one’-phrase in this case was omitted but the information about the objects was able to be supplied by the classifier and the contexts. The numeral classifier 莖 *jīng* in example (77) was used to describe a long, thin object. The combination of the numeral ‘one’ and the classifier literally meant one unit of beard, inferring its minimal unit.

(76) 無一箇有智慧 [from *ASACC*]

wú	[yí	ge]	yǒu	zhìhuì
NEG.EXT.V	one	CLF	have	wisdom

‘There is no one who has wisdom.’

(77) 白鬚無一莖 [from *ASACC*]

bái	xū	wú	[yì	jīng]
white	beard	NEG.EXT	one	CLF

‘There is not a strand of white beard.’

Second, the sequence of *wú* followed by a ‘one’-phrase attracted a wide variety of modifiers. In the ‘one’-phrases from Early Mandarin I, 43 out of 294 tokens of the combination had a modifier immediately preceding the negator *wú*. There was no one unified reading for these modifiers, but they all intensified the strength of negation. The top four modifiers in terms of frequency in the combination are bolded in (78)-(81). 並 *bìng* in (78) is a connective with the reading of *entirely*, which is claimed to be a negative-polarity sensitive adverbial (Hsiao 2002). 更 *gèng* in (79) is similar to English *moreover* and here it emphasizes the statement that not a single person could do it. 豈 *qǐ* in (80) is a rhetorical marker which brings the hearers’ attention to its following question. 都 *dōu* in (81) is a quantifier with the reading *all*, emphasizing all the sectors of the temple were exhausted in the searching event. It is noteworthy that the *wú* modified by the degree adverbials are the negative existential predicates, as shown in (78)-(81). The degree modification is found only in VO order and not in OV order.

(78) 並無一人肯 [from *ASACC*]

bìng wú [yì rén] kěn
entirely NEG.EXT.V one person be willing
'There is not even a person who is willing to do this.'

(79) 二公已死，更無一人能繼其學者 [from *ASACC*]

èrgong yǐ sǐ，**gèng** wú [yì rén] néng jì qí
Ergong already die moreover NEG.EXT.V one person can continue 3.sg

xué zhě
research -er/or
'Ergong already died. Moreover, not a single person can continue his research.'

(80) 豈無一有功 [from *ASACC*]

qǐ wú [yì] yǒu gōng
rhetorical marker NEG.EXT one have contribution
'Why is it that not a single person has any contribution?

(81) 應是院院搜集，寺內都無一物 [from *ASACC*]

yīngshì yuàn yuàn sōují，sì nèi **dōu** wú [yí wù]
likely sector sector collect temple inside DOU NEG.EXT one thing
'It is likely that they collected the valuable items from sector to sector, so there is nothing left in the temple.'

As for the combinations of 'one'-phrases with the negator *wú* in Early Mandarin II, the cases with adverbial modification increased. 132 out of 283 tokens in the *wú* -'one'-phrase sequence had an adverbial preceding the negator. There were 14 different kinds of modifiers found from the pool of data in Early Mandarin II. Although there is no single meaning shared by all of them, the modifiers form several groupings. One group added an exhaustive reading to a subset, such as quantifiers 全 *quán* 'all' and 都 *dōu* 'all'. As shown in (82) and (83), the adverbial 都 *dōu* 'all' exhausted all the members within the subset of children, and 全 *quán* 'all' covered all kinds of thoughts. The negation was operated on each member of a subset with the help of the quantifiers, inducing an emphatic reading on negation.

(82) 膝下半男隻女都無一個 [from *ASACC*]

xī xià bàn nán zhī nǚ **dōu** wú [yí ge]
knee under half boy CLF girl all NEG.EXT one CLF
'They don't have either a son or a daughter.'

(83) 靈臺無物謂之清，寂寂全無一念生 [from *ASACC*]

língtái wú wù wèi zhī qīng， jìjì **quán** wú [yí niàn shēng]
mind NEG thing call it clear silently all NEG one thought born
'Clarity means nothing in mind, and not a single thought is born.'

Another group consists of a handful of degree modifiers such as 竟 *jìng* 'finally', 並 *bìng* 'entirely', 絕 *jué* 'absolutely', and 毫 *háo* 'completely'. They added an emphatic rhetorical force

to an expressed proposition, which is coherent with the emphatic nature of minimizers. It is noteworthy that the three degree modifiers, 並 *bìng* 'entirely', 絕 *jué* 'absolutely', and 毫 *háo* 'completely', were negative-polarity sensitive adverbials. As exemplified in (84)-(85), the polarity sensitive adverbials in bold occurred only under negation. In these examples, both the minimizers and the adverbial NPIs served to reinforce negation.

(84) 並無一個對手 [from *ASACC*]

bìng wú [yí ge duìshǒu]
entirely NEG.EXT one CLF opponent
'And there is no opponent at all.'

(85) 果真一樹綠陰，毫無一花一蕊 [from *ASACC*]

guǒzhēn yí shù lǜ yīn， **háo** wú [yì huā yì ruǐ]
indeed one tree green shade completely NEG.EXT one flower one petal
'Indeed the tree is full of green without even a flower nor a petal.'

Yet another group includes discourse markers such as 更 *gèng* 'moreover', 卻 *què* 'however', and 豈 *qǐ* 'rhetorical marker'. The discourse markers are indicators of a transition to a clause which requires attention. For instance, the clause following 更 *gèng* 'moreover' in (86) provides further information about the fact that no one was awake described in the previous clause.

(86) 那鹽船上人正當熟睡，更無一人知覺。 [from *ASACC*]

nà yán chuán shàng rén zhèng dāng shóu shuì，
that salt boat on people now when deep sleep

gèng wú [yì rén zhījué]
moreover NEG.EXT one person conscious
'At that moment, all people on the salt boat were deep asleep. Moreover, nobody was conscious.'

Two major differences can be observed in the comparison of the adverbials from Early Mandarin I and those from Early Mandarin II. First, adverbial modification of the sequence *wú* 'NEG'-V-O where one'-phrases as minimizers became more frequent from Early Mandarin I to Early Mandarin II. 14 % of the occurrences of the sequence in Early Mandarin I had an adverbial, whereas the percentage increased to 44% in Early Mandarin II. Second, a wider variety of adverbials could be attached to this sequence in Early Mandarin II than in Early Mandarin I. 7 kinds of adverbials are observed in Early Mandarin I while 14 kinds are observed in Early Mandarin II. The attraction of the adverbials in the sequence containing a minimizer in Early Mandarin was due to the emphatic function of minimizers. These modifiers highlighted different pragmatic functions, and minimizer NPIs were intensifiers for negation. Their compatibility regarding pragmatic emphasis resulted in their frequent co-occurrence in Early Mandarin. When a 'one'-phrase occurred with the modification construction under negation, it was employed as a minimizer NPI. Therefore, the modification can be effective diagnostics for minimizers.

The third property of the 'one'-phrases in the sequence, O-*wú*-V, in Early Mandarin is that focus-sensitive scalar particles optionally appeared between the object and the negator. Early

Mandarin is the initial stage that scalar particles got involved in the sequence. The examples of 'one'-phrases in a preverbal position without the particles from Early Mandarin I are shown in (87)-(89). The noun and the classifier in a numeral phrase were omitted when the referent of the object could be recovered from the contexts, as in (88). The noun following the classifier in (89) did not appear because it was able to be recovered by the context.

(87) 照見晴空一物無 [from *ASACC*]

zhào	jiàn	qíng	kōng	[yí	wù]	wú
shine	see	clear	sky	one	thing	NEG.EXT

'(the moon) shines in the sky containing nothing else'

(88) 獵人一無所獲 [from *ASACC*]

lièrén	[yì]	wú	suǒ	huò
hunter	one	NEG	REL	catch

'The hunter did not catch anything.'

(89) 羞得花枝一朵無 [from *ASACC*]

xiū	de	huā	zhī	[yì	duǒ]	wú
shy	degree.marker	flower	branch	one	CLF	NEG.EXT

'It was so shameful not even a flower dared to appear on the branch.'

The majority of 'one'-phrases with negator *wú* still appeared in OV order without a scalar particle in Early Mandarin II. As shown in (90) and (91), a 'one'-phrase was in the preverbal position and no particle was required in the position between the negator and the 'one'-phrase.

(90) 看那地上之菜，又是好端端的，一株無損 [from *ASACC*]

kàn	nà	dì	shàng	zhī	cài，		yòu	shì	hǎoduānduānde，
look	that	ground	on	GEN	vegetable		again	COP	intact
[yì	zhū]		wú	sǔn					
one	CLF		NEG	damage					

'Look at the vegetables on the ground. They look intact without even a damaged one.'

(91) 神明之語，一字無欺 [from *ASACC*]

shénmíng	zhī	yǔ，	[yí	zì]	wú	qī
deities	GEN	speech	one	word	NEG	cheat

'There is not even a single cheating word in what the deities say.'

It was not until Early Mandarin that a focus-sensitive scalar particle was observable in the sequence of 'one'-phrase- *wú* 'NEG'- V. In Early Mandarin I, 6 out of 36 tokens in the sequence involved a focus-sensitive particle and all of them had the particle 也 *yě*. 也 *yě* was in the position preceding the negator *wú* and right after the 'one'-phrase as shown in (92) and (93). This particle, which is similar to English *even*, was introduced in the 'one'-phrases with negator *bù* in OV order in Section 2.3.3.2. The particle 也 *yě* in the examples induced a scalar reasoning in the contexts to stress that the predicate was not able to be satisfied even to the smallest extent.

(92) 不說即一字也無 [from *ASACC*]

bù shuō jí [yí zì] **yě** wú
NEG speak then one word YE NEG.EXT
'If he is not willing to speak, then he won't say even a word.'

(93) 一事也無，喝箇什麼 [from *ASACC*]

[yí shì] **yě** wú， hē ge shéme
one thing YE NEG.EXT drink CLF what
'There is not even a reason for drinking. What's the point of it?'

As for Early Mandarin II, 7 out of 61 tokens had a focus-sensitive particle involved. The 7 cases consisted of three particles, 也 *yě*, 全 *quán*, and 俱 *jù*. 全 *quán* and 俱 *jù* are variants with a meaning equivalent to English *all*. The particles here are the same as those in the combination of negator *bù* and 'one'-phrases in OV order discussed in Section 2.3.3.1. The particles of Early Mandarin I & II both came from two sources. The first source is 也 *yě*, which had the most occurrences among these particles in Early Mandarin. 也 *yě* encompasses both a focus-sensitive additive (cf. *also*) and a scalar function (cf. *even*). The second source is from the particles which can function as a universal quantifier, a distributive quantifier, and a scalar particle. 全 *quán* and 俱 *jù*, and 都 *dōu* are variants of this kind. Although the two sources cover different ranges of functions, they overlap in the function of being a focus-sensitive scalar particle. They behave as scalar particles when they attach to minimizers, implying a connection between the preverbal position and the reading of particles. The object position of OV order is claimed to be a focus associate (Tsai 2004a, N. Zhang 2000), but it does not require a scalar reading. The preverbal position can have contrastive, additive, or restrictive focus. The involvement of the scalar particles serves as a way to distinguish the additive focus from other focus functions in the preverbal position.

The earliest appearance of a focus-sensitive scalar particle involved in OV order can be traced to Early Mandarin I. However, a scalar reading was guaranteed even without a scalar particle when a 'one'-phrase as a minimizer appeared in OV order from Old Chinese to Early Mandarin. The compatibility of the focus particles and minimizer NPIs is due to the shared scalar property. The occurrence of the scalar particles explicitly indicates an additive focus in the preverbal position. This helps to explain why 'one'-phrases can only be interpreted as minimizer NPIs in OV position. Since scalar inferences are required in additive focus and minimizers have scalar properties, 'one'-phrases are understood as minimizer NPIs when they appear in a preverbal position. OV order can be treated as a construction to distinguish the minimizer function from the other functions in a 'one'-phrase.

The fourth property observed in the minimizers with negator *wú* in Early Mandarin is the adverbial NPI function of the numeral 'one'. The numeral 'one' alone can be used as an adverbial. As shown in the examples of (94) and (95), the 'one' does not have a unit word and a noun following it. 'One' is not the object since the nouns, 事 *shì* 'thing' and 差失 *chāshī* 'miss', already occupy the postverbal object position. 'One' behaved as an adverbial and it was sensitive to the negative polarity.

(94) 眼底一無事 [from *ASACC*]

yǎn	dǐ	yì	wú	shì
eye	under	one	NEG.EXT	thing

'nothing to do for now'

(95) 一無差失 [from *ASACC*]

yì	wú	chāshī
one	NEG	miss

'not miss once'

This adverbial function of 'one' only appeared with negator *wú* in the data from Early Mandarin. The adverbial 'one' intensified negation by adding a scalar reading to the sentences. The fixed combination of the adverbial 'one' and negator *wú* conveyed the meaning that even the smallest atomic unit of the object was not obtained. This adverbial function of 'one' emerged in Middle Chinese and was still in use in Early Mandarin. Scalarity and minimality became fixed semantics in the adverbial 'one.'

In summary, although the majority of the 'one'-phrases as minimizers with negator *wú* in Early Mandarin still appeared in VO order, the proportion of the 'one'-phrases in OV order increased when compared with that in Old Chinese and Middle Chinese. This section discusses four properties of the 'one'-phrases with negator *wú*. First, the occurrence of classifiers as a unit word in a 'one'-phrase increased. The classifier described an individual based on the overall perceived shape. The combination of 'one' and a classifier was therefore used to designate a single unit. They further inferred the smallest amount, and became the main source of Mandarin minimizers. Second, the 'one'-phrases as minimizers in *wú* 'NEG'-V-O order attracted a variety of adverbials and discourse markers. The co-occurrence reflected the emphatic function of minimizers. Third, the focus-sensitive markers began to appear in O- *wú* NEG -V order as an indicator of an additive focus. The scalar particles can help to specify the type of focus in preverbal position. Their occurrence also explains why 'one'-phrases had to be understood as minimizers rather than other readings in preverbal position. The scalar property of the preverbal position determined the reading of a 'one'-phrase. Fourth, the numeral 'one' developed as an adverbial NPI which maintained the properties of a minimizer such as minimality and scalarity. In Early Mandarin Chinese, the constructions which were able to distinguish the minimizer NPI function from the other functions of a 'one'-phrase became more salient with the involvement of a variety of modifications. The properties of these additional particles and modifiers can serve as supporting evidence to explain semantics encoded in minimizers, such as emphatic function and scalar reasoning.

2.3.3.3 Characteristics of non-fixed one'-phrases in Early Mandarin Chinese

The most important feature of 'one'-phrases as minimizers in Early Mandarin Chinese is that the number in OV order exceeds that in VO order. The 'one'-phrases as minimizers which occurred under the scope of negators *bù* and *wú* are examined separately here because the two groups behaved differently in VO and OV. Those with negator *bù* had a tendency to occur in OV order, while the majority of those with negator *wú* still occurred in the canonical VO order. However, in both cases the percentage of minimizers in OV order increased from Early Mandarin I to Early Mandarin II. The increase in OV order shows that the connection between minimizers and the preverbal object position became more stable. The semantics of OV order was clearly revealed by the involvement of focus-sensitive scalar particles, which began to appear in Early Mandarin. The scalar particles explicitly marked the focus carried in the preverbal position as an additive focus. The additive focus is compatible with minimizer NPIs since they both induce scalar inferences. This additive focus in the preverbal position can explain why 'one'-phrases in OV order were minimizers without exception.

It is noteworthy that a variety of particles and modifiers participated in the combinations of a negator and a 'one'-phrase in both VO and OV orders in Early Mandarin Chinese. The elements in OV and VO orders were quite distinct and can be used to characterize the two word orders. The particles inserted in OV order were all focus-sensitive scalar particles from two sources. One source was the focus-sensitive additive particles such as 也 *yě* and 亦 *yì*. Similar to English *also*, they presupposed that at least one alternative in the focus set of the sentence was established. The other source came from quantifiers such as 都 *dōu* and 全 *quán*, which function as universal or distributive quantifiers. Although the two sources of particles had highly different distributions, they both functioned as focus-sensitive scalar particles in O-NEG-V order when the preverbal object was a minimizer. This set of particles clearly distinguished the meaning of OV order from that of VO order. They marked the type of the preverbal focus as the additive type. The additive focus in the preverbal position played a crucial role in explaining why 'one'-phrases as minimizers gradually formed a link with OV order and why 'one'-phrases had to be understood as minimizers in the OV order. It was the additive focus that determined the reading of a 'one'-phrase. As for the modifiers occurring in NEG-V-O order such as 更 *gèng* 'moreover', 竟 *jìng* 'finally', and 豈 *qǐ* 'how come', their meanings were not unified and they did not promise a scalar reading. However, they all served for pragmatic emphasis. The increasing frequency in the collocation of these modifiers with 'one'-phrases as minimizers was due to their compatibility in terms of an emphatic function. In the data from *Corpus of Early Mandarin*, the 'one'-phrases occurring with the modifiers were all used as minimizers. The modification construction helped to specify the reading of a 'one'-phrase. The two word orders, VO and OV, attracted different groups of particles when they contained a minimizer. This division reflected the functions and meanings of the two word orders and the purpose of employing a minimizer.

In sum, the distribution of 'one'-phrases in Early Mandarin implies the association between minimizers and a syntactically focal position. Early Mandarin was also the initial stage where the two orders, VO and OV, were further distinguished by the newly added elements. The particles overtly marked the semantics of each order and clearly distinguished the two orders. Their participation also reflected the characteristics of 'one'-phrases as minimizers, such as scalar inferences and emphatic function. The 'one'-phrases as minimizers in Early Mandarin

behaved differently from those in Old Chinese and Middle Chinese, which will be discussed in Section 2.4.

2.4 The Comparison of the Non-fixed 'One'-phrases across Three Periods of Chinese

'One phrases' had differences as well as important similarities across Old Chinese, Middle Chinese, and Early Mandarin Chinese. A comparison of 'one'-phrases across the three periods will be provided in this section to discuss how the minimizer function of 'one'-phrases became distinguished from other functions over time. The environments where a 'one'-phrase was interpreted as a minimizer were conditioned by changes in Chinese word orders. Two significant changes in word orders are of interest to 'one'-phrases. The first one is the establishment of SVO as the canonical word order in Chinese. The second one is that the sequential order NUM-UW-N took over the functions which used to be divided between N-NUM-UW and NUM-UW-N. These two changes are the crucial factors in determining the distribution of minimizers as 'one'-phrases in Chinese.

2.4.1 Cross-period comparison of minimizers in VO and OV

The functions of a 'one'-phrase can generally be divided into two kinds. One is a quantity-denoting expression and the other is a descriptive function. An NPI function, which does not refer to a precise amount, belongs to the descriptive function. In Old Chinese, these two major categories were clearly distinguished by the sequential orders of a numeral phase. The sequence NOUN-(UW)-'one' was used for counting and expressing quantity only, while 'one'-UW-NOUN was used for descriptive functions. The NPI function of 'one'-phrases exclusively appeared in the 'one'-UW-NOUN sequence. The word orders, VO and OV, did not play a role in distinguishing the functions of a 'one'-phrase since most 'one'-phrases occurred in VO order. Middle Chinese was a crucial transition for word order changes. SVO became firmly established as the canonical order, and different functions of a numeral phrase were unanimously expressed by the NUM-UW-NOUN order. The NPI function of a 'one'-phrase at this stage still occurred in the NUM-UW-NOUN sequence, and the majority of 'one'-phrases as minimizers was in VO order. However, a small portion of the 'one'-phrases in OV order can be observed and these were all interpreted as minimizers. In Early Mandarin, the canonical order SVO and the unmarked numeral sequence NUM-UW-NOUN remained unchanged. The NPI function of a 'one'-phrase continued to stay in the NUM-UW-NOUN sequence since the sharp contrast in numeral sequences had disappeared since Middle Chinese. Nevertheless, VO order for the 'one'-phrases as minimizers lost its absolute dominance. Those 'one'-phrases as minimizers occurring with negator *bù* gained a larger proportion in OV order than in VO order.

A cross-period comparison of the distributions of 'one'-phrases as minimizers can lay out how the NPI function of 'one'-phrases built up a connection with a specific syntactic construction. Since the minimizer function of 'one'-phrases was consistently in the NUM-UW-NOUN sequence, the discussion of the distributions of minimizers will focus on their distinctions in VO and OV. Four combinations of the two elements, the numeral 'one' and negator *bù*/*wú*, were extracted from the corpus of each of the three periods. Among them, the two sequences, 'one'… *bù* and 'one'… *wú* are in OV order, while *bù*… 'one' and *wú*…'one' are in VO order.

Tokens of the minimizer function of a 'one'-phrase were manually selected from each of the four search results. When the search result exceeded 5,000 tokens, the minimizers were collected from a 5,000 random sample and the number was normalized to meet the original size of the search results. The number of minimizers in each of the four sequences is divided by the total number of minimizers from each period to proportionate the distribution. The distributional proportions of the 'one'-phrases functioning as minimizers in VO and OV orders cross the three periods are shown in Figure 2.6. There were more minimizers with negator *bù* than with negator *wú* across three periods. The gradual increase of 'one'-phrases as minimizers in OV order is clearly observed in the comparison of the three periods. In Early Mandarin, the percentage of the minimizers with negator *bù* in OV order is bigger than that of VO order. Although the 'one'-phrases as minimizers with negator *wú* are the majority in VO order in all the three periods, the proportion of minimizers in a preverbal position kept increasing since Old Chinese.

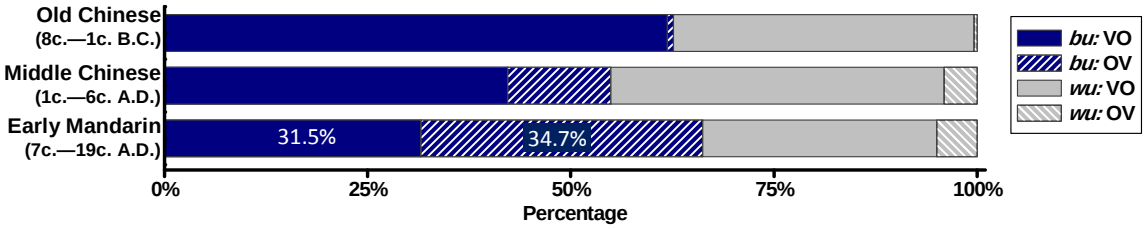


Figure 2.6: The proportional distribution of 'one'-phrases as minimizers in the four sequences

2.4.2 Cross-period comparison of minimizers with negator wú

The phenomenon that the majority of 'one'-phrases as minimizers with negator *wú* appear in the VO order is worth further investigation. The distribution is constrained by the properties of Mandarin existential constructions. As discussed in Section 2.3, Mandarin existential constructions may have multiple components, as repeated in (96). The existence of the NP in Position III is introduced by the existential predicate. If the NP is followed by a predicative clause as in Position IV, this type of NP is not found in the OV order. When 'one'-phrases as minimizers serve as the grammatical object of the existential predicates, they are subject to the same constraint.

(96) …(NP)…EXT.V…NP…(XP)…

Position I II III IV

This constraint is reflected in the distribution of 'one'-phrases as minimizers with negator *wú* in VO and OV orders. Indeed, the tokens of 'one'-phrases as minimizers with negator *wú* in VO can be further classified, as shown in Figure 2.7. In the 101 tokens of 'one'-phrases with negator *wú* in the VO order in Figure 2.1, there are 100 tokens that appear in the existential *wú* construction. Within the group of existential *wú*, the majority of them have an expression of predication. This syntactic constraint is one of the reasons why minimizers under negator *wú* tended to occur in VO order.

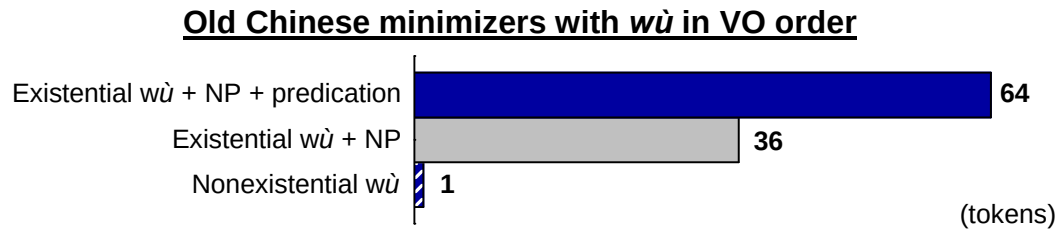


Figure 2.7: Classification of Old Chinese minimizers with *wú* in VO order

In Middle Chinese, two constructions of the minimizers with negator *wú* can only be observed only in VO order rather than in OV order. One is the existential construction containing a secondary predicate; the other is the degree modification discussed in Section 2.3.2.1. Their distribution is shown in Figure 2.8. The two constructions specific for VO order constitute the majority.

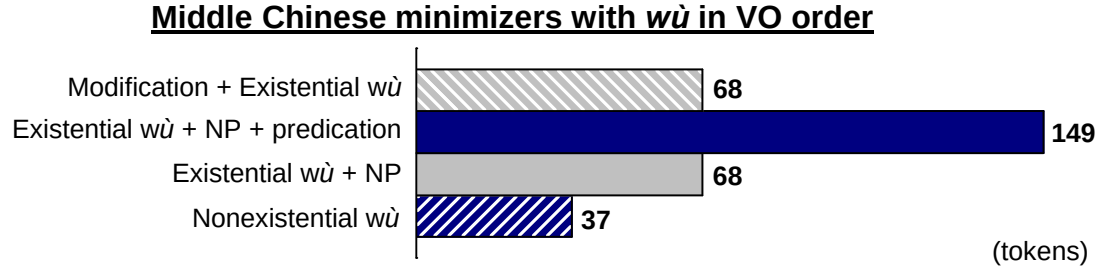


Figure 2.8: Classification of Middle Chinese minimizers *wú* in VO order

A similar distribution can also be observed in Early Mandarin Chinese. The two constructions occupy the major portion of 'one'-phrases as minimizers under negator *wú* in VO order. The cross-period comparison shows how syntactic and semantic characteristics of the existential constructions crucially affect the distribution of 'one'-phrases as minimizers in VO and OV orders.

2.4.3 Tendency of 'one'-phrases as minimizers in OV order

The association of 'one'-phrase as minimizers with the preverbal focus position is due partly to Chinese syntactic changes. Different functions of a 'one'-phrase relied on the two sequential orders of a numeral phrase to get distinguished in Old Chinese, and therefore the NPI function was not mixed with a quantity-denoting expression. The loss of the contrast in numeral sequences around Middle Chinese resulted in the quantity-denoting expression and the descriptive function coexisting in the same form. However, the NPI function could still be distinguished from other readings when a 'one'-phrase appeared in VO order in Middle Chinese. A 'one'-phrase under negation in the preverbal position was only interpreted as a minimizer. Only a couple of examples were found in preverbal position in Old Chinese, but the relation became more prominent in Middle Chinese. In Early Mandarin, the connection became even more salient. The disappearance of the contrast in numeral sequences gave rise to the association with the preverbal position.

One intriguing question is why the NPI function has the specific connection with the preverbal position instead of other syntactic positions. The answer must lie in the compatibility of the function of minimizers and the focus in the preverbal position. The preverbal position is claimed to have focal prominence. The crucial function of minimizers is intensifying negation for emphatic effects, and therefore minimizers are conventionally associated with rhetorical functions such as emphasis (Israel 2011). Israel (2011) further points out that a polarity item must express its informative value in an appropriately emphatic way for a polarity item to be felicitous. Informativity refers to the effect of emphasis or attenuation of a speaker's utterance on a proposition. Following this logic, minimizers carry informative values only if they appear in an appropriate context of emphasis. Therefore, minimizers tend to appear in the constructions where they can maintain consistency between the scalar inferences and the rhetorical force of the contexts. A variety of constructions where minimizers can properly express their informativity have emerged at different stages of Chinese. I will review three constructions which can bias a proposition toward an emphatic rhetorical force and therefore make Chinese minimizers informative. The constructions can also serve as diagnostics of emphasis. The first is the preverbal object position in the OV order, which has focal prominence. Emphatic polarity items generally welcome emphatic focus since both of them signal the unusual significance of an expressed proposition. It is therefore natural for the two forms to become gradually attracted to each other to serve as the informational focus in the development of Chinese. The second construction is the modification of scalar particles. The incipient involvement of scalar particles in the sequence O-也 *yě* /都 *dōu*-NEG-V can be observed in Early Mandarin. The particles explicitly revealed the scalar properties contained in minimizers, and therefore they can be viewed as indicators of the emphasis carried in minimizers. The later occurrence of the modification of 連 *lian* 'even' in 連 *lian*-O-也 *yě* /都 *dōu*- NEG-V in Early Mandarin II made the scalar focus even more salient. The *even*-construction biased a proposition toward a rhetorical force with emphasis. The shared emphatic function explains why a 'one'-phrase in this construction must be interpreted as an NPI. The third construction is the modification of a variety of adverbials in the VO order. These modifiers in the VO order increased since Middle Chinese. The 'one'-phrases as minimizers in the VO order attracted the degree modifiers such as 竟 *jìng* 'eventually', 殆 *dai* 'nearly/ all', 終 *zhōng* 'entirely', 並 *bìng* 'entirely', 絕 *jué* 'absolutely', and 毫 *háo* 'completely'. The last three modifiers were also sensitive to negative polarity. Moreover, the minimizers in the VO order also occurred frequently with the rhetorical marker 豈 *qǐ* in a rhetorical question. Although these adverbials were diverse, they all contributed a rhetorical function to the following clauses, making minimizers informative. When a 'one'-phrase appeared with the modification in Middle Chinese and Early Mandarin, it had to be interpreted as an NPI. In brief, the functions of the three constructions are consistent with the inherent informativity of minimizers. Therefore, an NPI reading is secured when a 'one'-phrase appears in the constructions.

2.4.4 Development of non-fixed 'one'-phrases: cross-period summary

In the process of 'one'-phrases developing as minimizers, although the contrast of numeral sequences ceased to be a way to distinguish the NPI function of a 'one'-phrase from other functions, a couple of constructions emerged one by one to signal the NPI function. They can be viewed as relatively new strategies to make the NPI function distinguishable. The association between the 'one'-phrases as minimizers and the emphatic constructions became

more prominent over time. From Old Chinese to Early Mandarin, additional modification such as scalar particles and adverbials increased in both OV and VO constructions. The increasing collocation of scalar particles or adverbials with 'one'-phrases as minimizers not only characterizes the fine differences between OV and VO orders but also well reflects the semantics of minimizers. The development of 'one'-phrases as minimizers and how they interacted with other constructions are summarized in Table 2.2.

Table 2.2: Summary of non-fixed 'one'-phrases across periods

	Old Chinese	**Middle Chinese**	**Early Mandarin Chinese**
Syntactic characteristics	• **word order** competition between SVO and SOV • **numeral phrase** N-NUM-UW: quantity-denoting NUM-UW-N: descriptive	• **word order** SVO: canonical SOV: marked • **numeral phrase** NUM-UW-N: quantity-denoting & descriptive	• **word order** SVO: canonical SOV: marked • **numeral phrase** NUM-UW-N: quantity-denoting & descriptive
Properties featuring 'one'-phrases as minimizers	• in the form NUM-UW-N • occurring in VO	• in the form NUM-UW-N • majority in VO, but with a fair amount of cases in OV • degree modification in VO resulting in an NPI reading • classifiers expressing a minimal unit • 'one' developed as an adverbial NPI	• in the form NUM-UW-N • the first time OV outnumbered VO in the data with negator *bù* • degree modification in VO resulting in an NPI reading • classifiers expressing a minimal unit & the use of the general classifier • 'one' developed as an adverbial NPI • focus-sensitive scalar particles in OV

The development of non-fixed 'one'-phrases as minimizers is interrelated with a number of syntactic changes in Chinese, such as the establishment of the canonical SVO order, the convergence of numeral sequences, and the involvement of particles in focus constructions. The diachronic analysis reveals the tendency of the minimizer NPI function of a 'one'-phrase to be associated with particular constructions where it can be informative. The study of non-fixed 'one'-phrases distinguishes the environments favoring the development of minimizers and the constructions the minimizers interact with. An ensuing question is how the internal properties of a 'one'-phrase such as semantics, syntax, and phonology changed over time in its different functions. The diachronic changes within a 'one'-phrase can be observed in the development of fixed 'one'-phrases. In the next section, the development of fixed 'one'-phrases as minimizers will be discussed.

Chapter 3

The Development of the Polysemous Fixed 'One'-phrase in Mandarin Chinese

In Chapter 2, I have discussed how the development of Chinese non-fixed 'one'-phrases as minimizers was shaped by significant changes in two types of word orders. The establishment of SVO order and NUM-UW-NOUN sequence constrained the distribution of non-fixed 'one'-phrases as minimizer NPIs. They are external factors that shape the development of non-fixed 'one'-phrases as minimizers. 'One'-phrases under the scope of negation were unambiguously interpreted as minimizer NPIs when occurring as an object in OV order or as an object in VO order modified by a degree adverbial. In particular, the tendency of a minimizer to appear in the focal position of the OV order became more and more prominent from Old Chinese to Early Mandarin Chinese. The analysis shows how the interpretation of 'one'-phrases is determined by its associated constructions and how these associations have formed over time. After the discussion of how 'one'-phrases have built a polysemous network through various diachronic changes, the focus of this chapter is on the internal changes of construals during the process of building and shaping a polysemy model. I will use the diachronic changes of the fixed 'one'-phrases to explain the synchronic interpretational variability of 'one'-phrases in terms of the realignment of form and meaning in numeral phrases diachronically. The development of Mandarin Chinese numeral phrases reflects how Mandarin speakers conceptualize quantity and the general tendencies in the diachronic development of Mandarin Chinese.

The construction-internal change of 'one'-phrases can be clearly observed in the fixed 'one'-phrase, where the slot of a unit word must be filled by *dian* 'dot'. The underlying reason is that different functions of the fixed 'one'-phrase, *yi* 'one'-*dian* 'dot'-NOUN, appeared at different periods of Chinese. Normally, the types of nouns occurring in the fixed 'one'-phrase are abstract or mass nouns since they do not have individual classifiers due to the lack of concrete visual perception. The fixed 'one'-phrase has developed two distinct functions out of the sequence *yi* 'one'-*dian* 'dot'- NOUN, which was originally used for counting and measuring. First, 'one'-phrases can be interpreted as minimizer NPIs. In Modern Mandarin Chinese, the form of the fixed 'one'-phrase used as a minimizer for abstract and mass nouns is very productive, as shown in (1) and (2)[1].

(1) 一點破綻也瞧不出來

[yì	diǎn	pòzhàn]	yě	qiáo	bù	chū	lái
one	dot	flaw	YE	see	NEG	out	come

'cannot see any flaw'

[1] The data of Modern Mandarin Chinese are collected from the *Academic Sinica Balanced Corpus of Modern Chinese*.

(2) 一點垃圾都沒有

[yì	diǎn	lèsè]	dōu	méi	yǒu
one	dot	trash	DOU	NEG	have

'There is not even a bit of trash.'

Second, fixed 'one'-phrases function as indefinite quantity attenuators, similar to English *some* or *a little bit*, as shown in (3) and (4). Different from its use as a minimizer NPI, the designated small quantity is not a minimal quantity. This function can be treated as a Positive Polarity Item (PPI) because it cannot appear under the scope of negation.

(3) 喝了一點咖啡

hē	le	[yì	diǎn	kāfēi]
drink	PRF	one	dot	coffee

'drank some/ a little bit of coffee'

(4) 不知道能不能耽誤你一點時間

bù	zhīdào	néng	bù	néng	dānwù	nǐ	[yì	diǎn	shíjiān]
NEG	know	can	NEG	can	delay	you	one	dot	time

'(I) wonder if I can have a little bit of your time.'

Interestingly, the phenomenon that a phrase has both an NPI and a PPI interpretation can also be observed in English *a bit*, as shown in the contrast of (5) and (6). *A bit* in (5) is interpreted as an NPI, emphasizing the fact that no cake was left. On the contrary, *a bit* in (6) is an attenuator referring to an imprecise small quantity. The indefinite attenuator behaves as a PPI.

(5) There wasn't **a bit** of cake left.
(6) There was **a bit** of cake left.

When English *a bit* is used as an adverbial, it behaves as a PPI, as shown in (7) and (8). The comparison of the nominal and adverbial use of *a bit* shows that the reading of a small-quantity expression is shaped by its environment.

(7) a. I am a bit hungry. b. *I am not a bit hungry.
(8) a. The book was a bit long. b. *The book wasn't a bit long.

In other words, the interpretation of *a bit* is determined by the constructions. Similarly, Mandarin fixed 'one'-phrases as expressions of small quantity can be interpreted in multiple ways depending on where they appear. In this chapter, I will discuss how the readings of fixed 'one'-phrases have been shaped by constructions diachronically.

Although the functions of serving to count/measure, behaving as a minimizer NPI, and serving as an indefinite quantity attenuator are all realized in the syntactic string of 'one'-*dian* 'dot'-NOUN, each function has a different internal structure. A 'one'-phrase consists of three components: numeral *yi* 'one', unit word *dian* 'dot', and a noun. Their relationships vary when the 'one'-phrase is used for different functions. Each function of a fixed 'one'-phrase can be treated as an individual construction because it has its own encoded semantics, syntax, and pragmatics. In the following discussion, I will document when each of these constructions appeared in the development of this numeral phrase, and show how the internal relationship of the constructional components has changed over time. The diachronic analysis explains why the

form of a fixed 'one'-phrase can accommodate multiple interpretations in Modern Mandarin Chinese, and why each function displays a tendency to combine with a particular construction. The reason for the former is due to association with similar constructions and the reason for the latter is the need for distinction between related functions. The two forces gradually shape a polysemous model of the fixed 'one'-phrase.

In Section 3.1, the constructionist perspective on diachronic changes will be briefly introduced. How the unit word *dian* 'dot' was used in Old Chinese and Middle Chinese will be presented in Section 3.2 and 3.3, respectively. The various functions of a fixed 'one'-phrase, including as a minimizer and as an indefinite quantity attenuator, began in Early Mandarin Chinese. Each of the readings tended to be associated with constructions which can reinforce its characteristics. The phenomena will be discussed in Section 3.4. In addition to the nominal uses, the fixed 'one'-phrase extended to an adverbial function. This extension made the distinction between an NPI and a PPI interpretation more salient, which will be discussed in Section 3.4.2.3. In Section 3.5, the focus is on the incremental changes of the fixed 'one'-phrase and their relation to the development of a polyseous model. Section 3.6 summaries the model of this diachronic development.

3.1 Constructionist Perspective on Diachronic Changes

There is a recent trend of analyzing diachronic changes from a constructional perspective (Traugott and Trousdale 2013). I will summarize the tenets of a constructionist approach and the characteristics of grammaticalization, and discuss their compatibility.

From a synchronic perspective in cognitive linguistics, language is conceptualized as being made up of pairings between form and meaning in the model of construction grammar (Croft 2001, 2007, Goldberg 2006, Fried and Östman 2004b, Langacker 2008, among others). A constructional approach integrates correlations between syntax, semantics, pragmatics, phonology, etc. in a model. Although differences exist between various constructional approaches, Goldberg (2013) points out the shared tenets in these approaches. First, a construction, i.e., a pairing of form and meaning, is the basic unit of grammar (Lakoff 1987, Fillmore, Kay and O'Connor 1988, Goldberg 2006). Second, grammar needs no transformational or derivational component; semantics is directly linked to surface form (Goldberg 2002, Culicover and Jackendoff 2005). Third, language is composed of a network of constructions. Phrasal constructions and words are related in a taxonomic relationship with inheritance hierarchies (Langacker 1987, Hudson 2007, Booij 2010). Fourth, cross-linguistic variation can be explained by domain-general cognitive processes and by the functions of the involved constructions (Croft 2001, Haspelmath 2008, Evans and Levinson 2009). The last point shared by the majority of constructionist approaches is the usage-based feature. In other words, language use can shape language structure (Tomasello 2003, Bybee and Eddington 2006, Goldberg 2006). The last principle allows constructionist approaches to interface with language change.

Although the application of construction grammar to grammaticalization is at its incipient stage (Traugott and Trousdale 2013), the label of "construction" has often appeared in the literature on grammaticalization. The "construction" in this sense refers to the context where changes have developed. For instance, Lehmann (1992) points out that grammaticalization can

influence the whole construction formed by the syntagmatic relations of the elements in question instead of being restricted only to a word or morpheme. Heine (2002) also stresses the importance of semantic and pragmatic contexts and constructions for a linguistic item to undergo grammaticalization. In a similar vein, Bybee, Perkins and Pagliuca (1994) in their study treating tense, modality, and aspect claim that diachronic development occurs not just simply in lexical meaning, but in the entire construction. In addition to the focus on syntagmatic relations, they also emphasize the correlation of syntactic, semantic, and phonological changes. The multilayered property of grammaticalization is emphasized in Himmelmann (2004) by characterizing three types of expansion: host-class, syntactic, and semantic-pragmatic. These insights on grammaticalization show that the properties of grammaticalization adhere to the general principles of the Construction Grammar approach.

Constructionist approaches are coherent with the studies of diachronic changes in several ways. In general, Construction Grammar has a cognitive and holistic view on grammar (Fried and Östman 2004). With the gestalt perspective, no level of grammar is autonomous. Rather, syntax, semantics, pragmatics, and phonology work together in a construction. The multidimensional property of constructions can keep track of the internal properties of a larger pattern (Fried 2008), and this property can be applied to capture the incremental change of a construction in a diachronic process. Construction Grammar accounts for both generalizations of patterns and idiosyncrasies between form-meaning pairs. As defined in Goldberg (2006), a linguistic pattern is recognized as a construction as long as a linguistic aspect is not strictly predictable from its component parts or from other extant constructions. From this perspective, since not all lexical items have a fixed meaning, those lexical items which are relatively indeterminate in meaning acquire meaning from a construction in systematically related ways. As a result, a construction can shape interpretations of lexical items (Goldberg 1995, Michaelis 2004). This insight is in line with reanalysis in diachronic processes. Among the constructional approaches, Radical Construction Grammar (Croft 2001, Croft and Cruse 2004) advances the constructional perspective and further proposes that all linguistic structures are constructional. The model of the symbolic structure of a construction in Radical Construction Grammar, as shown in Figure 3.1 (adapted from Croft and Cruse 2004: 258), is built for cross-linguistic typological variation.

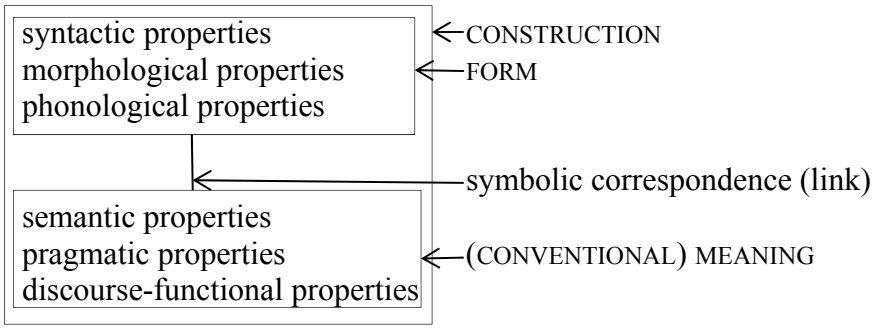


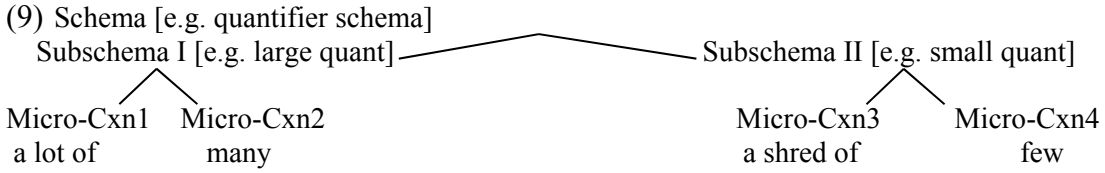
Figure 3.1: Symbolic structure of a construction (Croft and Cruse 2004: 258)

Even though the primary focus of Radical Construction Grammar is on synchronic variations, Croft (2001) offers important observations on grammaticalization. For example, a relatively new construction is polysemous with respect to its original meaning, which is reminiscent of coevolution of form and meaning. In the case of extension of constructions to new

uses, it is seen as changes in the distribution of the construction, which follow connected paths in conceptual space. This concept is connected by Traugott (2008) to the gradualness hypothesis of grammaticalization, which occurs in small, local steps. The hypothesis of grammaticalization chains proposed in Heine (1997) conceptualizes diachronic changes as a series of local steps. Each step represents a fine-grained structure difference. These small steps along a continuum are formed by reanalysis and analogy. Reanalysis involves change in constituency, hierarchical structure, grammatical relations or category (Harris and Campbell 1995). From the constructionist perspective, reanalysis makes a new structural configuration from existing constructions. Regarding analogy, the process can be viewed as the attraction of extant constructions to existing structures, resulting in generalization. The properties discussed so far show that constructionist approaches can precisely capture the properties of diachronic changes. Specifically, grammaticalization has been treated as the output of processes of language use that leads to systematic changes in morphosyntactic form and meaning, and these processes may result in the reorganization of central aspects of language (Traugott 2002, 2008; Hopper and Traugott 2003 [1993]). The process of grammaticalization can thus be considered as dynamic pairings of form and meaning. In this respect, the constructional approach can characterize the incremental changes of a diachronic development.

The constructional approaches to diachronic changes are put forward in Traugott and Trousdale (2013) with the two notions: constructionalization and constructional changes. The two processes of diachronic changes are discussed in terms of the hierarchical relationships of constructions. A diachronic change may involve different levels of constructions, including schemas and micro-constructions in the hierarchical relationships among constructions. An example used to illustrate the organization of constructions is the English QUANTIFIER CONSTRUCTION, as shown in (9) (adapted from Traugott and Trousdale 2013: 17).

(9)



In their terminology, micro-constructions are defined as instantiations of 'constructs', such as English quantity modifiers, *few* and *a bit of*. The schematic quantifier construction is at the highest level and abstracts over many micro-constructions. It contains all types of quantifiers, including phrasal and monomorphemic. Subschemas appear between the two levels and make distinctions between different types of quantity. Granted the gradient constructional relationship, constructionalization is defined as the creation of new form and meaning pairings. It forms a new construction with new syntactic and semantic properties encoded in the hierarchy of constructions. Constructionalization is viewed as the result of a succession of small steps of changes. During the process of constructionalization, new micro-constructions may be created, either gradually or instantaneously. The other type of process, constructional change, affects only one internal dimension of an existing construction, such as syntax, semantics, or phonology, e.g. the morphophonological change *will* > *'ll*. Different from constructionalization, constructional changes do not result in the creation of a new construction.

The constructionist perspective on diachronic changes helps to capture the incremental steps of grammaticalization. Current studies in this area concentrate on the local steps of the

formation of a construction. My analysis of the development of a polysemous construal is built upon this concept, but the focus is on the motivations of why a sense of a polysemous construal tends to collocate with a specific construction. I will show that similarities and differences are the two forces determining the extensions of a polysemous construal in a diachronic development. Resemblance is the key factor in determining the directionality of the main path of development at an incipient stage, whereas each extension of a polysemous construal and its semantically and pragmatically relevant constructions is reflected in the collocation at a later stage.

In the following sections, I will use the development of fixed 'one'-phrases to discuss how a syntactic construal can develop various functions. The discussion begins with *dian* 'dot' in Old Chinese.

3.2 *Dian* 'dot' in Old Chinese

There are a total of merely 25 tokens of *dian* found in the *Corpus of Old Chinese.* In Old Chinese, *dian* 'dot' was not used as a unit word. The tokens of *dian* 'dot' can be classified into three categories, as shown in Table 3.1.

Table 3.1: Three categories of *dian* in Old Chinese

Category	Noun	Proper noun	Verb	Total
Token(s)	3	15	7	25

The occurrences as a proper noun constitute the largest proportion of the tokens because many Old Chinese examples were from the *Analects* recording the words of Confucius and his disciples and the character *dian* is part of the name of a disciple. As for its use as a noun, it referred to a small ink dot in calligraphy. Example (10) clearly shows that a dot was a type of calligraphy stroke.

(10) 馬字少一點 [from *ASACC*]
mǎ zì shǎo yì diǎn
horse character lack one dot
'The character of 'horse' is one dot stroke short.'

A dot stroke in calligraphy has two salient properties, a small round shape and the black ink color. The meaning of a dot-shaped stroke further extended to refer to a stain, as shown in (11). The properties of smallness and blackness of a calligraphy stroke were still prominent in this use.

(11) 黕點而汙之 [from *ASACC*]
dǎn diǎn ér wū zhī
stain dot CONJ smudge it
'stained and smudged it.'

When *dian* functioned as a verb in Old Chinese, it referred to the action of making a dot-shaped stroke in calligraphy. The semantics extended to mean 'to use dot strokes to obliterate previous writing', as shown in (12) and (13). *Dian* as a verb was only used in calligraphy.

(12) 點竄塗乙 [from *ASACC*]
diǎn cuàn túyǐ
dot alter revise
'(using dot strokes) to alter the text'

(13) 滅。謂之點。 [from *ASACC*]
miè。 wèi zhī diǎn。
erase name it dot
'*Erase*, which means using a black dot to obliterate previous writing.'

In sum, in Old Chinese, *dian* 'dot' was not used as a unit word, let alone as part of a numeral phrase. When *dian* 'dot' was used either as a noun or a verb, its meaning was based on that of a dot-shaped stroke. In the next section, I will discuss how *dian* 'dot' behaved in Middle Chinese.

3.3 *Dian* 'dot' in Middle Chinese

In the *Corpus of Middle Chinese*, there are 549 tokens of *dian*, functioning as a verb, a proper noun, and a noun. The percentages of the three categories are shown in Figure 3.2.

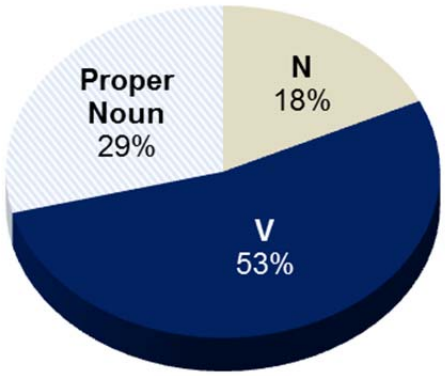


Figure 3.2: The percentages of the three categories of *dian* in Middle Chinese

The function as a verb took the biggest portion. The verb *dian* mainly referred to the action of making a dot-shaped stroke, no longer restricted to calligraphy. As in (14), the verb emphasized the action of swiftly making contact in a small area.

(14) 以朱墨點小兒頭額 [from *ASACC*]
yǐ zhū mò diǎn xiǎoér tóué
use red ink to dot child forehead
'using red ink to make a mark on a child's forehead'

As for the nominal use, the majority of *dian* still appeared in a proper name in the corpus data. Other than the usage as a verb and as part of a proper noun, *dian* developed several metonymies in Middle Chinese. The central case of the metonymic network is a dot-shaped stroke in black, as in (15). The color black and the dot-shape are the two core features.

(15) 伊字三點 [from *ASACC*]
yī zì sān diǎn
he/she character three dot
'three dot-shaped strokes of the character 伊(he/she)'

In some cases, the property black disappeared and only the dot-shape remained. This use of *dian* extended to refer to a solid round shape which was not necessarily made in calligraphy, as in (16) and (17).

(16) 肉中有朱點者，不可食之。 [from *ASACC*]
ròu zhōng yǒu zhū diǎn zhě， bù kě shí zhī
meat inside have red dot AFF NEG can eat it
'Meat with red spots should not be eaten.'

(17) 淚痕點點寄相思 [from *ASACC*]
lèi hén diǎn diǎn jì xiāngsī
tear trace dot dot put lovesickness
'The marks of teardrops testify to lovesickness.'

With the profiling of the blackness of a dot-shaped stroke, *dian* was used to mean a small black stain. Example (18) is the definition of *dian* quoted from an authoritative dictionary in Middle Chinese. *Dian* was defined as small black dots

(18) 點，小黑也。 [from *ASACC*]
diǎn， xiǎo hēi yě
dot small black SENTENCE-FINAL PTC
'*Dian* means a small stain.'

Examples (15) to (18) show that in the period of Middle Chinese, *dian* 'dot' already became nominal with reference to a small, solid round object not necessarily related to calligraphy. This is an incipient stage of *dian* 'dot' turning into a unit word.

It is noteworthy that *dian* 'dot' used in a numeral phrase NUM-UW-NOUN is attested in *Corpus of Middle Chinese*. There are four examples where *dian* 'dot' appeared in the slot of a unit word in a numeral phrase. As in (19), *dian* 'dot' designates a small unit of colorful spots instead of referring to a dot-shaped stroke.

(19) 千點斕斑噴玉驄 [from *ASACC*]
[qiān diǎn lánbān] pēn yù cōng
thousand dot colorful appearance spray jade horse
'thousands of colorful dots sprayed on the horse made of jade'

The other three examples all occurred with the numeral 'one', as shown in (20)-(22). Each of the nouns in (20) and (21) had its own particular classifier, but *dian* 'dot' was used instead. *Dian* 'dot' described the visual perception of a tiny dot due to the great distance of the object in question. For instance, the expression in (21) describes the visual effect that the flag looks like a dot because it is far away from the viewers. Notably, *dian* 'dot' was allowed to take a mass noun, which lacks a particular individual classifier, as in (22).

(20) 一點宿烟島 [from *ASACC*]
[yì diǎn sùyān dǎo]
one dot foggy island
'a small foggy island'

(21) 山寒一點旗 [from *ASACC*]
shān hán [yì diǎn qí]
mountain cold one dot flag
'a flag looked like a dot in the cold mountains'

(22) 一點濃嵐在深井 [from *ASACC*]
[yì diǎn nóng lán zài shēn jǐng]
one dot thick mist at deep well
'a dot of thick mist in the deep well'

These four 'one'-phrases show that the fixed 'one'-phrase made its first appearance in Middle Chinese. The nominal *dian* 'dot' already developed the function of a unit word in a numeral phrase in Middle Chinese, and *dian* 'dot' as a unit word was tightly associated with the image of a dot shape. In Section 3.4, I will discuss how the fixed 'one'-phrase developed its versatile functions in the next period, Early Mandarin Chinese.

3.4 Fixed 'One'-phrases in Early Mandarin Chinese

In Middle Chinese, the fixed 'one'-phrase was restricted to describing a small zero-dimensional object, such as a point-like object. In Early Mandarin Chinese, however, various functions of the fixed 'one'-phrase began to appear. In this period, the fixed 'one'-phrase can express different quantities, such as English *little*, *a little, a bit* and *some*. Interestingly, fixed 'one'-phrases can be interpreted as NPIs and PPIs depending on the constructions where they appear. The two readings devolved along two opposite paths. The NPI interpretation was employed for an emphatic function, whereas the PPI interpretation was used for attenuation. This section focuses on the two opposing developments of this *yi* 'one'-*dian* 'dot'-NOUN string. The discussion of fixed 'one'-phrases unfolds along three lines: (i) how different interpretations of fixed 'one'-phrases could be properly distinguished by their associated constructions, (ii) why these associations had formed, and (iii) what was changed in fixed 'one'-phrases internally.

The data of fixed 'one'-phrases gathered from the *Corpus of Early Mandarin Chinese* are divided into two sub-periods for discussion in order to precisely capture its incremental internal changes. Early Mandarin Chinese I spanned from 7c. A.D. to 12c. A.D., and Early Mandarin Chinese II covered the period from 13c. A.D. to 19c. A.D. The distributions of fixed 'one'-phrases in various functions differ greatly in the two periods. There are 792 tokens of the fixed 'one'-phrase in Early Mandarin Chinese I, and 1924 tokens in Early Mandarin Chinese II. Figure 3.3 is a comparison of the distributions of four functions relevant to the discussion of NPIs and PPIs in the two sub-periods. The function as an indefinite quantity attenuator for an indefinite quantity is related to the development of PPIs. It is notable that both the functions of a minimizer NPI and an indefinite quantity attenuator increased over time. They became the dominant functions in the period of Early Mandarin Chinese II. The change in the cross-period

distributions reflects the fact that the fixed 'one'-phrases have shifted their core function from a numeral phrase for counting/measuring purposes to polarity-sensitive items.

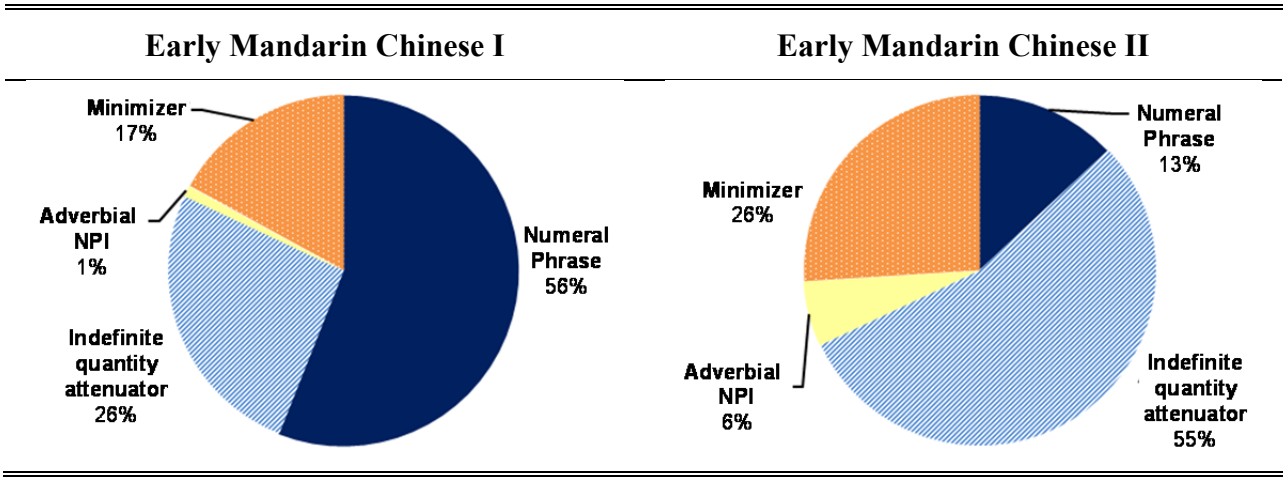


Figure 3.3: The distributions of the functions of the fixed 'one'-phrase in Early Mandarin Chinese I & II

Since NPIs and PPIs are subject to different syntactic and semantic constraints, the two paths of development will be discussed separately. Section 3.4.1 discusses how fixed 'one'-phrases came to develop a PPI interpretation. The distribution and properties of fixed 'one'-phrases as minimizer NPIs will be examined in Section 3.4.2. In Section 3.4.3, a special case of the definite use of fixed 'one'-phrases with a tendency of becoming a scalar operator will be introduced.

3.4.1 Development of the PPI interpretation of fixed 'one'-phrases in Early Mandarin Chinese

In the period of Early Mandarin Chinese I, the majority of the tokens of fixed 'one'-phrases were still used to describe the image of a solid dot. As shown in (23) and (24), *dian* 'dot' served as a unit word for a small, solid, round object. For instance, *xiéyáng* refers to the setting sun, which is preceived as a dot-shaped object. Although the referents in the two examples have an inherent round shape, they have their own particular classifiers when appearing in a counting phrase. For instance, the classifier 顆 *kē*, which is used for a pellet-shaped object, has been in use since Middle Chinese for stars, but the use of *dian* 'dot' here instead of the default classifier stresses the tininess of the round object due to the great distance between the viewer and the object.

(23) 遙望船窗一點星 [from *ASACC*]
yáo wàng chuán chuāng [yì diǎn xīng]
distant look to boat window one dot star
'look through a porthole at a small distant star'

(24) 一點斜陽紅欲滴 [from *ASACC*]
[yì diǎn xié yáng] hóng yù dī
one dot slant sun red want drip
'the declining sun is a vivid red'

The unit word *dian* ‘dot’ further semantically extended to describe an object which was not inherently round in shape. For example, a seagull in (25) is not a round object, but the use of *dian* ‘dot’ as a unit word indicates that the seagull is distant and looks like a small dot. Since the main function of *dian* ‘dot’ as a unit word is to individualize each unit of its following noun for a counting purpose, the numeral slot of the numeral phrase should be able to be filled by different numerals. The numeral phrase with the same noun ‘seagull’ in (26) shows that the numeral slot was open to different numerals when the fixed ‘one’-phrase was used for a counting purpose.

(25) 一點白鷗何處去 [from *ASACC*]
[yì diǎn bái ōu] héchù qù
one dot white seagull where go
‘Where is the white seagull in the distance going?’

(26) 三兩點鷗沙外月 [from *ASACC*]
[sān liǎng diǎn ōu] shā wài yuè
three two dot seagull sand outside moon
‘two or three seagulls above the shoal, with the moon in the sky’

Ambiguity between a dot-shape and a small quantity may arise when the noun of the fixed ‘one’-phrase is a mass noun. As shown in (27), it can be interpreted in two ways. One is the dot-shaped snow spot, and the other is a little bit of snow. The property of a round shape remains in the former reading, while the latter emphasizes the small quantity. The ambiguity disappears if the numeral is larger than the numeral one, as in (28). This numeral phrase can only be interpreted as a counting phrase for one thousand dot-shaped units of snow. The contrast between the two examples reveals the divergence of functions of the fixed ‘one’-phrase.

(27) 如紅鑪上一點雪 [from *ASACC*]
rú hóng lú shàng [yì diǎn xuě]
like red wok on one dot snow
‘like a bit of snow on the red hot wok’

(28) 臨風千點雪 [from *ASACC*]
lín fēng [qiān diǎn xuě]
face wind thousand dot snow
‘braving the wind and a thousand flakes of snow’

This function of expressing approximation can be clearly observed if the noun is not a concrete substance. The nouns in (29) and (30), ‘breeze’, ‘warmth’, and ‘freshness’ are not concrete objects, so the dot-shaped image is not possible to be applied to them. The unit word *dian* ‘dot’ was no longer confined to describing the image of a dot. In these cases, the fixed ‘one’-phrase served as an indefinite quantity attenuator designating an indefinite small amount. Note that the numeral ‘one’ was not allowed to be replaced by other numerals. The restriction implies that *dian* ‘dot’ in this phrase did not function as a unit word normally used for a counting/ measuring purpose. This type of *yi-dian* ‘one-dot’ behaved like a modifier specifying the small quantity of its modified noun.

(29) 一點春風和氣 [from *ASACC*]
[yì diǎn chūn fēng héqì]
one dot spring wind warmth
'a little bit of vernal breeze and warmth'

(30) 一點清涼除熱惱 [from *ASACC*]
[yì diǎn qīngliáng] chú rènǎo
one dot freshness rid of discomfort caused by heat
'a little bit of freshness can beat the heat'

So far I have discussed two newly developed functions in Early Mandarin Chinese. One is to count. This function shows that the nominal *dian* 'dot' was recruited as a unit word in Chinese. Similar to a classifier, a unit word conveyed a gestalt perception of its following noun. Since this kind of *dian* 'dot' functioned like a classifier, it was allowed to combine with different numerals. The other function is to express an imprecise small quantity. In this use, the *dian* 'dot' is not equipped with a classifier function of individualizing basic units. In addition, the numeral 'one' cannot be replaced by other numerals. The two functions of the fixed 'one'-phrase have differences in the relationships among its components.

The two functions found in Early Mandarin Chinese I both continued to exist in the period of Early Mandarin Chinese II, but with different relative proportions. As shown in Figure 3.4, the fixed 'one'-phrases occurred more frequently as numeral phrases than as an indefinite quantity attenuator in Early Mandarin Chinese I, but the use as an attenuator became dominant in Early Mandarin Chinese II.

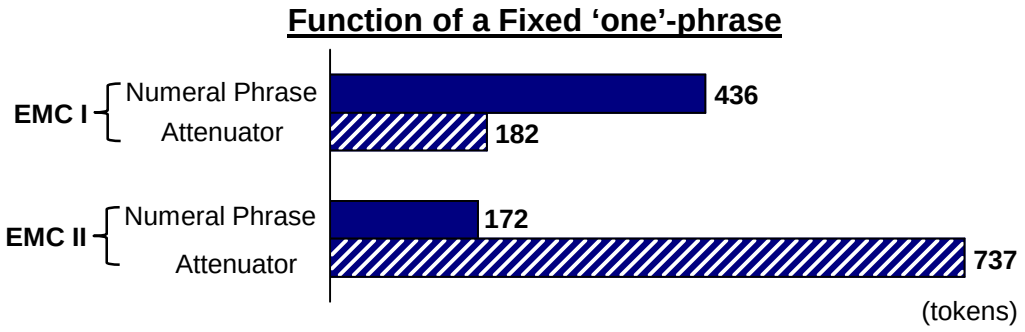


Figure 3.4: Tokens of numeral phrases and attenuators in the form of a fixed 'one'-phrase in Early Mandarin Chinese I and II

The dramatic increase of the use as an indefinite quantity attenuator shows that this function is a later development out of a numeral phrase. It is also an indicator of the internal syntactic and semantic changes of fixed 'one'-phrases. In the following sections, I will discuss the core properties of an indefinite quantity attenuator, including the encoded quantity and the attenuative function.

3.4.1.1 From a numeral phrase to an indefinite quantity attenuator

The function of an indefinite quantity attenuator differs in the two sub-periods, Early Mandarin Chinese I and II. In Early Mandarin Chinese I, the attenuators all referred to an indefinite small quantity. However, in Early Mandarin Chinese II, they can be further divided into two categories: a neutral quantity like English *some* and a small quantity like English *a little*. The indefinite quantity attenuator denoting an indefinite small quantity is similar to English *a little*, particularly in that there is no fixed upper bound. This function of fixed 'one'-phrases has properties from both the paucal quantifier and the approximative plural defined in Corbett (2000). The paucal is used to refer to a small number of distinct real world entities, which is similar to English 'a few' in meaning. The use of fixed 'one'-phrases can help to express the plural concept of a small quantity of objects even though there is no morphological distinction between singular and plural in Mandarin Chinese. For instance, the noun 'shrimp' in Mandarin has its own particular classifier, but the use of the fixed 'one'-phrase in (31) refers to a small number of individuals. The exact number varies according to context.

(31) 作了一碗火肉白菜湯，加了一點兒蝦米兒 [from *ASACC*]
zuò le yì wǎn huǒròu báicài tang，
make PRF one bowl ham cabbage soup

jiā le [yì diǎn-ér xiāmǐ-r]
add PRF one dot-DIM little shrimp-DIM
'made a bowl of ham and cabbage soup and added a few shrimps to it'

Regarding the approximative plural, it is more vague in quantity and thus claimed to be more polite use (Corbett 2000). Similarly, the attenuative reading induced from approximative information can be observed in the fixed 'one'-phrase, as in (32) and (33). The fixed 'one'-phrases express approximation and serve as downtoners to convey a sense of politeness. The speakers do not mean a small amount literally, but they scale down the effect of the modified noun in a request.

(32) 你先喝一點茶，再和你講 [from *ASACC*]
nǐ xiān hē [yì diǎn chá]，zài hé nǐ jiǎng
you first drink one dot tea then with you talk
'Please drink a little tea first. Then I'll talk to you.'

(33) 賞我一點空兒 [from *ASACC*]
shǎng wǒ [yì diǎn kōng-r]
grant me one dot slot-DIM
'Grant me a little time.'

Some cases suggest that the restriction of referring to a small quantity of the fixed 'one'-phrase was lifted in the period of late Early Mandarin Chinese. Lü (1985) claims that a *yi-dian* 'one-dot'-NOUN phrase can profile the property of indefiniteness more than the smallness. A piece of supportive evidence in Early Mandarin quoted from Lü (1985) is given in (34). A modifier with the meaning of 'a little bit, vaguely' is added to the fixed 'one'-phrase to express a small quantity. It is taken as a sign that the property of smallness in the *yi-dian* 'one-dot'-phrase

had started to bleach. The fixed 'one'-phrase was gradually used to refer to a neutral quantity, similar to English *some*.

(34) 道理也還些微的有一點兒在裡頭 [from *ASACC*]
dàolǐ yě hái **xiēwéide** yǒu [yì diǎn-r] zài lǐtou
sense also still vaguely have one dot-DIM LOC inside
'There is still vaguely a little bit of sense in it.'

However, this claim may be controversial. The addition of the modifier can be interpreted as adding extra politeness to the sentence. It is similar to the function of attenuating downtoners. There is still no consensus because the subtlety of the differences in terms of quantity does not have a clear-cut boundary for distinction.

Another indicator that helps to make distinct the difference in quantity is morphological addition of diminutive marking to fixed 'one'-phrases, such as the diminutive reduplication of 點 *diǎn* 'dot' in (35) and 子 *zi* 'diminutive marker' in (36). The duplication of 點 *diǎn* 'dot' emphasizes the smallness in quantity. Similarly, the bound root 子 *zi* also indicates the tininess of the referred object (Chao 1968, Packard 2000). The emergence of the morphological complex unit words in Early Mandarin Chinese II shows that fixed 'one'-phrases had developed two kinds of indefinite quantity attenuators. One places its emphasis on indefiniteness, while the other stresses the tiny quantity.

(35) 一點點小交易 [from *ASACC*]
[yì diǎn **diǎn**] xiǎo jiāoyì
one dot dot small transaction
'just a little bit of transaction'

(36) 我吃了一點子螃蟹 [from *ASACC*]
wǒ chī le [yì diǎn **zi**] pángxiè
I eat PRF one dot DIM crab
'I ate a little bit of crab.'

The morphological diminutive markers serve as a way to efficiently distinguish the fixed 'one'-phrases as indefinite quantity attenuators from their counting function. When *dian* 'dot' functions as a unit word for a counting purpose, no diminutive markers can be attached to it.

In addition to the morphological difference, the approximators in the two sub-periods had a phonological difference. The data from Early Mandarin Chinese II show that *dian* 'dot' was often marked by an *-r* sound (transcribed in IPA as [ɹ]). *Dianr* 'dot' is a variant of *dian* 'dot.' Its use continuously increased until Modern Mandarin Chinese (Lü 1985). This phonological process of adding *r*-coloring or the [ɹ] sound to a noun is common in spoken northern Mandarin Chinese. The *-r* is a diminutive suffix (Chao 1986). Two examples of fixed 'one'-phrases with *-r* in Early Mandarin Chinese II are shown in (37) and (38). The suffix *-r* helps to delimit a small quantity.

(37) 還有一點兒出息 [from *ASACC*]
hái yǒu [yì diǎn-**r**] chūxí
still have one dot-DIM good for something-ness
'is still good for a little something'

(38) 遍身微微的出了一點兒汗 [from *ASACC*]
piàn shēn wéiwéide chū le [yì diǎn-**r** hàn]
all over body slightly emerge PRF one dot -DIM sweat
'sweated a bit all over the body'

In this section, I have discussed the properties of fixed 'one'-phrases as attenuators in the two sub-periods of Early Mandarin Chinese. In the second sub-period, the diminutive markers appeared to attach *dian* 'dot' when the fixed 'one'-phrase referred to approximation. They not only explicitly marked the smallness of quantity but also distinguished the use of approximation from that of counting. This development shows that there is a tendency for each function to be associated with certain markers or constructions to make the distinctions salient when multiple functions, such as counting, approximation, and attenuation, are all realized in the same syntactic string.

3.4.1.2 Attenuation induced from approximation

Section 3.4.1.1 has shown that fixed 'one'-phrases in Early Mandarin Chinese II developed a finer classification of an indefinite quantity. Regardless of the difference in the degrees of smallness in quantity, these fixed 'one'-phrases all serve the same purpose—attenuation. This function is similar to that of English *some*, which is claimed to have attenuation as its essential feature (Israel 2011). In fact, a couple of functions of these approximative fixed 'one'-phrases are quite parallel with those of English *some*, particularly in its quantity-denoting and referential functions. The similarities of English *some* and the fixed 'one'-phrase will be compared below.

The basic function of *some* is to introduce an indefinite amount of a nominal type, as in (39).

(39) There is still some coffee in the mug.

Israel (2011) further points out that *some* profiles a limited instance in a relatively uninformative proposition and contrasts against *any*, which can trigger inferences over all alternatives. In addition to the similarity between the basic *some* and approximative fixed 'one'-phrases, another property of *some* relevant to the fixed 'one'-phrase is its referential function to a specific indefinite. The referential *some* is employed when it is judged unnecessary for the referent to be completely specified, as observed by Warfel (1972) and Duffley and Larriveé (2012). As in (40), *some* combined with a singular count noun delimits an existing referent that the speaker does not fully identify because it is judged to be irrelevant to the main proposition.

(40) He was reading *some* book when I entered the room.

This use of a partially identifiable referent suggests the existence of a specific one. In this case, the speaker does not have full identification of the referent. The referent is assumed to be

unknown to the hearer, but the subject of the VP containing the *some* phrase is assumed to have a specific referent in mind. The Mandarin fixed 'one'-phrase also has a function similar to this indefinite specific *some*. The function of denoting a not fully identified referent can be observed in (41), where the referent of the fixed 'one'-phrase is expressly left unspecified by the speaker. The fixed 'one'-phrase in (41) functions like English attenuator *one little thing*, which is used to convey politeness.

(41) 我也有一點東西請教 [from *ASACC*]

wǒ	yě	yǒu	[yì	diǎn	dōngxī]	qǐngjiào
I	also	have	one	dot	thing	consult

'I would also like to consult with you about one little thing.'

The function of the specific *some* is coherent with the basic *some* regarding approximation because they both make a relatively uninformative and weak contribution to a proposition. The message left unidentified is backgrounded in the conversation. The approximation in quantity extends to attenuation in information. However, the distinction between the quantity-denoting and the specific referential functions of the fixed 'one'-phrase in Mandarin Chinese is not as saliently discernible as that in English *some*. This is partly due to the lack of morphological distinction in singular and plural forms in Mandarin Chinese. English basic *some* combines with a mass or plural count noun and profiles an indefinite amount, whereas specific referential *some* combines with a singular count noun. No such distinction exists in Mandarin Chinese.

The two functions of the fixed 'one'-phrase, with reference to an indefinite quantity and with reference to a nonspecific indefinite, are sensitive to polarities. They are not found to appear under the scope of negation, and thus they are treated as PPIs. *Some* has long been identified as a PPI (Jespersen 1909-1949, Baker 1970) because of its semantic and syntactic constraints. Semantically, *some*-type PPIs generally do not occur within the immediate scope of a clausemate antiadditive operator (Szabolcsi 2004)[2].The indefinite *some* PPI is claimed to need to be situated in a veridical context because its referentiality cannot be satisfied in nonveridical contexts and negation (Giannakidou 2011)[3]. In terms of syntactic licensing, PPIs are licensed in a phrase without non-negative polarity that is located above the negative polarity phrase in a clause structure (Progovac 2005). The condition shows the fact that PPIs do not appear in negative environments. Both the syntactic and semantic constraints show that *some* as a PPI exhibits the tendency to avoid being in the scope of negation, contrary to an NPI.

Although *some* is claimed to be non-scalar in nature (Giannakidou 2011, Szabolcsi 2004), it can induce scalar inferences when it occurs in an environment where it contributes to attenuate an expressed proposition. In terms of the Scalar Model, *some*-NP is defined as a low-scalar attenuating PPI because it encodes a low quantity value of a limited indefinite instance and contributes a low informative value to a salient context proposition (Israel 2011). Based on the Informative Hypothesis, since *some* conveys a low and indefinite quantitative value, it can only

[2] According to Szabolcsi (2004: 414), anti-additivity is defined as follows: A function f is anti-additive iff f(a∨b)=fa∧fb. For example, 'no one walks or talks'='no one walks and no one talks'.

[3] Giannakidou (2011: 1674) defines veridicality as a property of sentence embedded functions: a function *f* is veridical if *fp* entails or presupposes the truth of *p*. If inference to the truth of *p* under f is not possible, f is nonveridical. Particularly, nonveridical expressions express lack of commitment.

refer to a limited and indefinite instance and therefore it is blocked from contexts where reference to other instances can be triggered.

With regard to the properties of PPIs, Mandarin Chinese fixed 'one'-phrases as attenuators behave like English *some*. The scalar effect of the use of an attenuative fixed 'one'-phrase can be clearly observed when it contrasts with other determiners such as 多 *duō* 'a lot' and 全 *quán* 'all'. As in (42), the fixed 'one'-phrase reveals attenuation of the expressed proposition when the stronger determiner is denied. Example (42) can be interpreted in English as 'I have some money but not a lot.' The fixed 'one'-phrase designates a positive instantiation of a nominal type. The relatively uninformative 'one'-phrase thus generates a scalar implicature for implying the instantiation cannot be greater. Even without the contrast with other determiners and the restrictive focus marker 'only', the expression of the fixed 'one'-phrase in (42) can still infer 'I don't have a lot of money'.

(42) 我沒有很多錢，我只有一點錢。[example in Modern Mandarin]
wǒ méi yǒu hěnduō qián， wǒ zhǐ yǒu [yì diǎn qián]
I NEG have a lot of money I only have one dot money
'I don't have a lot of money. I only have a little.'

Since the fixed 'one'-phrase denoting a relatively small quantity cannot support inferences about other alternatives with a larger quantity, it has a relatively restricted semantic domain. The attenuating fixed 'one'-phrase like English *some* does not result in domain widening or strengthening (Kadmon and Landman 1993). This is contrary to the NPI *any*, which is essentially an indefinite determiner with widening and strengthening conditions.[4] This sort of fixed 'one'-phrase profiles a limited, less specific, indefinite amount of a type of a nominal against a set of other alternatives. The main function is to make the proposition that it contributes to less informative. This function can also be observed in the pronominal use of *yi-dian* 'one-dot', as in (43). The non-committal use of *yi-dian* 'one-dot' invites the inference that Speaker B is not willing to provide further information. The use of *yi-dian* 'one-dot' can soften the tone of negation made by Speaker B by providing attenuation.

(43) A: 你做完今天的工作了嗎？ (example from Modern Chinese)
A: nǐ zuòwán jīntiānde gōngzuò le mā？
you finish today work PRF PTC
'Have you finished your work today?'
B: 我做了一點。
B: wǒ zuò le [yì diǎn]
I do PRF one dot
'I did a little/ some work.'

In sum, the fixed 'one'-phrase as an approximator refers to a small quantity. This lack of precision results in uninformativity. Therefore, the fixed 'one'-phrase carries an attenuating

[4] According to Kadmon and Landman (1993), the NPI *any* widens the interpretation of the common noun phrase along a contextual dimension such as types, kinds, and quantity (e.g. I don't have any vegetables.). This condition is termed WIDENING. STRENGTHENING refers to the condition that the domain widened statement has to entail the non-widened one.

function, making it sensitive to polarities. The transition from a numeral phrase to a mature PPI can be observed in the period of Early Mandarin Chinese.

3.4.2 Development of the NPI interpretation of fixed 'one'-phrases in Early Mandarin Chinese

Section 3.4.1 discussed the development of the PPI interpretation of fixed 'one'-phrases, parallel with English *some*. The PPI *some* has been treated as the attenuating counterpart to the emphatic *any* (Israel 2011). They both invite scalar inferences but they are sensitive to opposite polarities. In Mandarin Chinese, it is striking that a fixed 'one'-phrase can accommodate the polarity items sensitive to opposite polarities, an attenuative PPI and an emphatic NPI. Although the two functions reside in the same sequence *yi* 'one'-*dian* 'dot'-NOUN, they can still be differentiated by the constructions they interact with. In this section, the discussion centers on how the fixed 'one'-phrase as a minimizer NPI behaved in Early Mandarin Chinese and whether the function favored particular constructions.

Fixed 'one'-phrases began to appear in Middle Chinese, but they were not interpreted as minimizer NPIs. The function as a minimizer NPI only emerged in Early Mandarin Chinese. Early Mandarin Chinese had two prominent syntactic features: SVO as the canonical word order and NUM-UW-NOUN as the canonical order of a numeral phrase. The question then becomes how the fixed 'one'-phrase as a minimizer behaved with the two constraints. Without exception, the function of minimizers all appeared in the sequence of NUM-UW-NOUN. In other words, the use of the minimizer function was not different from the other uses, such as the counting and the PPI functions, in terms of the form.

Regarding the preference toward the word orders, however, they behaved differently. The uses of PPIs and counting phrases appeared only in VO order when used as an object. The minimizer function of the fixed 'one'-phrase can be observed in the object position of both VO as in (44)-(45), where the bracketed 'one'-phrases follow the main predicates, and OV order as in (46)-(47), where the 'one'-phrases are followed by the main predicates. This contrast of the distribution of the two word orders shows that the preverbal object position can guarantee the minimizer reading of the fixed 'one'-phrase.

(44) 不留一點灰塵在 [from *ASACC*]
bù liú [yì diǎn huīchén] zài
NEG keep one dot dust exist
'not leave any dust'

(45) 沒一點懶惰 [from *ASACC*]
méi [yì diǎn lǎnduò]
NEG.EXT one dot laziness
'There is not a bit of laziness.'

(46) 一點雨也不下 [from *ASACC*]
[yì diǎn yǔ] yě bú xià
one dot rain FOC NEG fall
'It did not rain even a drop.'

(47) 外人竟一點消息不得知道 [from *ASACC*]

wàirén	jìng	[yì	diǎn	xiāoxí]	bù	dé	zhīdào
outsider	it is surprising	one	dot	information	NEG	can	know

'It is surprising that outsiders do not even know a thing.'

The specific association between the preverbal object position and the minimizer NPIs has been discussed for non-fixed 'one'-phrases in Chapter 2. Non-fixed 'one'-phrases as minimizers show a tendency to occur in the preverbal object position, which is a focal position. The emergence of such a tendency was to distinguish among multiple functions coexisting in the form of a non-fixed 'one'-phrase. In order to determine whether the same generalization holds for the fixed 'one'-phrase, the tokens of the sequence, *yi* 'one'-*dian* 'dot'-NOUN, are exhaustively extracted from the *Corpus of Early Mandarin Chinese* for examination. The result shows that there are 803 tokens used as minimizer NPIs among a total of 2,795 tokens of fixed 'one'-phrases. The majority of the minimizers appear under the scope of negation while a small number of tokens appear in conditionals and rhetorical questions. The bars in Figure 3.5 indicate that these tokens of minimizers in Early Mandarin Chinese were distributed quite evenly in VO and OV orders with OV slightly exceeding VO.

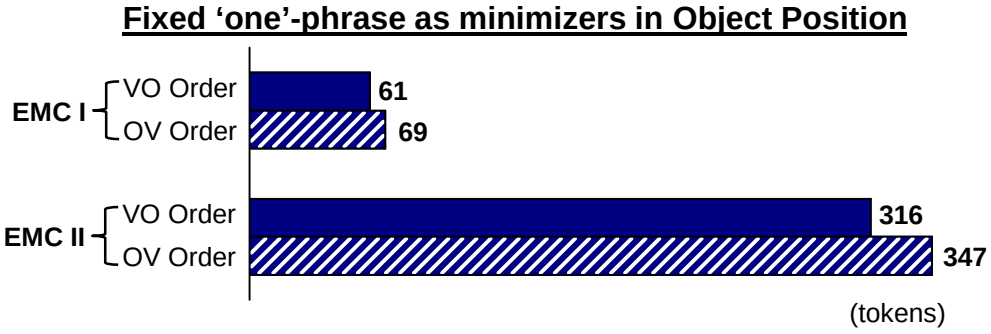


Figure 3.5: Distributions of the minimizer function of the fixed 'one'-phrase in two word order patterns under the scope of negation in Early Mandarin Chinese I & II

This raises the question of why there is such a distribution in the two word orders. How the minimizers behaved in the two word orders patterns, OV and VO, will be examined separately below.

3.4.2.1 The minimizer function of the fixed 'one'-phrase in OV order

A closer look at fixed 'one'-phases as a grammatical object in OV order in Early Mandarin Chinese reveals that they must be used as minimizer NPIs. In other words, the preverbal position serves to unambiguously distinguish an NPI function of the 'one'-phrase from others. The preverbal object position in Mandarin Chinese has been claimed to be associated with focus (Huang et. al 2009, Tsai 2004, N. Zhang 2000). The frequent occurrence in OV order shows that minimizer NPIs favor the focal position. Although the preverbal object can host three kinds of focus, contrastive, restrictive, and additive (N. Zhang 2000), the type of focus that minimizer NPIs are associated with can be pinned down by the co-occurrence of two types of particles, 也 *yě* and 都 *dōu*. The involvement of focus particles in OV order began in Early Mandarin Chinese. The position of the particles is between the preverbal object and the VP, as shown in (48) and (49).

(48) 一點光也不能透入 [from *ASACC*]
[yì diǎn guāng] **yě** bù néng tòu rù
one dot light YE NEG can penetrate enter
'Not even a bit of light can get through.'

(49) 一點影響都探不出 [from *ASACC*]
[yì diǎn yǐngxiǎng] **dōu** tàn bù chū
one dot influence DOU detect NEG out
'cannot detect even a bit of influence'

The two kinds of particles cover different ranges of functions. 也 *yě* functions as a focus-sensitive additive particle (cf. English *too, also*) or as a focus-sensitive scalar particle (cf. *even*) (Szabolcsi et. al 2014). The other particle 都 *dōu* serves as a focus-sensitive scalar particle, a universal quantifier, and a distributive operator in modern Mandarin Chinese (Szabolcsi et. al 2014, Xiang 2008). Importantly, 都 *dōu* contributes an exhaustive reading. In the data from Early Mandarin Chinese II, two more particles, 全 *quán* and 俱 *jù*, were involved in the OV order. They can be viewed as equivalent to English *all*. Based on their function of exhaustivitiy, 都 *dōu*, 全 *quán*, and 俱 *jù* can be classified into one group. Although each of the two kinds of particles was responsible for various functions, they were used in the sense of scalar particles when co-occurring with minimizers in the preverbal object position. This claim can be supported by the involvement of the prenominal scalar modifier, 連 *lian* 'even', which accompanies the focus-sensitive particles. 連 *lian* 'even' made its first appearance in Early Mandarin Chinese II. As a dependent modifier, it cannot occur alone without focus-sensitive scalar particles. For example, the minimizer in (50) is sandwiched between 連 *lian* 'even' and the particle 也 *yě*. The focus is thus assured to be of the scalar type. A detailed analysis of the development of scalar particles will be discussed in Chapter 4.

(50) 連一點消息也不知道 [from *ASACC*]
lián [yì diǎn xiāoxí] **yě** bù zhīdào
even one dot news YE NEG know
'(They) do not know even a scrap of news.'

In Modern Mandarin Chinese, when fixed 'one'-phrases as minimizers appear in the preverbal object position, the scalar particles are obligatory in order to mark the focus position. The development of this association initiated in Early Mandarin Chinese I. The co-occurrence frequency of the preverbal fixed 'one'-phrases and the scalar particles is shown in Figure 3.6. In Early Mandarin Chinese, the scalar particles for the preverbal minimizers were not mandatory. However, the frequency slightly increased slightly across the two sub-periods. The changes of proportions of the particles indicate that the later-recruited scalar adverbials began to become involved in the focus construction. They overtly marked the scalar property of the minimizers.

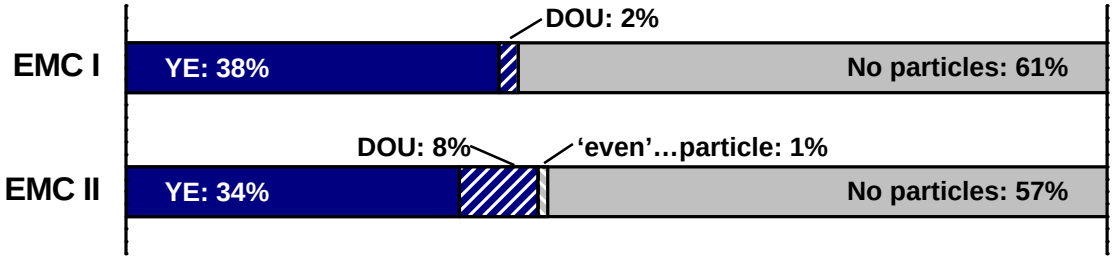


Figure 3.6: The percentage of fixed 'one'-phrases in the preverbal position with and without scalar particles in Early Mandarin Chinese I & II

In the process of developing a minimizer interpretation of fixed 'one'-phrases, the association between the minimizer function and the preverbal focus position became more prominent. The specific construction with scalarity became more explicit over time as evidenced by the later co-occurrence with focus-sensitive scalar particles. When a fixed 'one'-phrase appeared in the preverbal object position under the scope of negation, it had to be interpreted as a minimizer NPI. Notably, the scalar particles can successfully distinguish the NPI use of fixed 'one'-phrases from the PPI use. According to corpus data, the fixed 'one'-phrases as PPIs in Early Mandarin Chinese did not appear in the preverbal object position. Since the PPIs are attenuators (as discussed in Section 3.4.1), the attenuating function is not found in construction with focal prominence due to semantic conflicts. As observed in English attenuating PPIs, such as *somewhat* and *much* (Israel 2011), the semantic clashes of attenuating PPIs and emphatic constructions will result in semantic anomalies or even ungrammaticality.

In sum, the minimizers in Early Mandarin Chinese showed a preference for OV order. The tendency for minimizers to occur in a preverbal position creates maximum distinction of different functions in a polysemous syntactic string in the development of Mandarin Chinese. Although the majority of the minimizers are found in OV order, there was still a fair proportion of the minimizers in the VO order at the same time. In Section 3.4.2.2, I will discuss how the fixed 'one'-phrase functioning as a minimizer in OV order became distinguished from the other functions.

3.4.2.2 The minimizer function of the fixed 'one'-phrase in VO order

Based on the data from the *Corpus of Early Mandarin Chinese*, it is not uncommon for the fixed 'one'-phrase to appear as the object in VO order. The discussion of these tokens of the fixed 'one'-phrase will focus on what they have in common and the kinds of constructions required for the minimizer reading in VO order. The minimizers in VO order have a tendency to

appear either with degree adverbial modification, or in rhetorical questions and conditionals. The specific relations of these environments with the minimizers will be discussed below.

3.4.2.2.1 Degree adverbial modification

The tokens in VO order can be further divided into two categories based on the two primary types of negation in Mandarin Chinese: the general negator 不 *bù* and the existential negators, 無 *wú*/ 沒 *méi*[5]. It is generally agreed that 不 *bù* is used to negate habitual or volitional/ future situations, whereas 沒 *méi* is used to negate the verb 有 *yǒu* in existential sentences, which can be translated into English as 'there be' (Li and Thompson 1981)[6]. In the negative form of the existential predicate 沒有 *méiyǒu,* 有 *yǒu* can be optionally deleted. Since the existential predicate 有 *yǒu* can be omitted, 沒 *méi* is claimed to carry both the meaning of negation and the meaning of the existential 有 *yǒu* when it appears alone (Li and Thompson 1981). 無 *wú* is the ex-period equivalent of Modern Mandarin 沒有 *méiyǒu*. The bars in Figure 7 stand for the tokens of fixed 'one'-phrases as minimizers in the two types of negation. In the two sub-periods, the tokens with existential negation far exceeded those with the general negation. Although the number of tokens with negator 不 *bù* increased in Early Mandarin Chinese II, the majority still occurred with the existential negation. The comparison of the minimizers in the two types of negators shows the tendency of the fixed 'one'-phrases in the VO order to be associated with the existential construction.

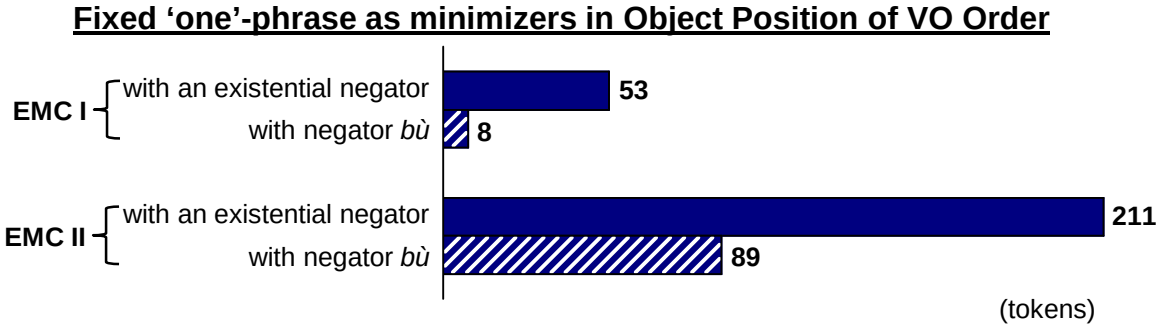


Figure 3.7: The tokens of the fixed 'one'-phrases as minimizers under the two types of negation in VO word order in Early Mandarin Chinese I & II

The data of the minimizer NPIs in VO order of Early Mandarin Chinese I appear only with two negators, 無 *wú* and 不 *bù*, as shown in (51) and (52). The 53 tokens under the scope of existential negation all appear with the existential negator 無 *wú*.

[5] The other function of the negator 沒(有) *méi(yǒu)* is to negate the completion of an event (Li and Thompson 1981). However, the function of the negator 沒 *méi* discussed in this section is the existential one.

[6] 有 *yǒu* has been labeled differently in the literature. For example, it has been labeled as an existential verb by Huang (1987) and as a modal by Tsai (2001a, 2001b). However, a consensus has been reached that 有 *yǒu* heads the Mandarin existential constructions. Please refer to Chapter 6 for a detailed discussion of Mandarin existential constructions.

(51) 無一點雲翳 [from *ASACC*]
wú [yī diǎn yún yì]
NEG.EXT one dot cloud haziness
'There is not a bit of cloud.'

(52) 都不見一點塵埃 [from *ASACC*]
dōu bú jiàn [yì diǎn chén-āi]
all NEG see one dot dust
'cannot see a bit of dust at all'

In Early Mandarin Chinese II, the two existential negative predicates, 無 *wú* and 沒有 *méi(yǒu)*, were both productive in an existential construction, as in (53) and (54).

(53) 無一點怨恨 [from *ASACC*]
wú [yì diǎn yuànhèn]
NEG.EXT one dot hatred
'There is not a bit of hatred.'

(54) 沒一點後悔 [from *ASACC*]
méi [yì diǎn hòuhuǐ]
NEG.EXT one dot regret
'There is not a bit of regret.'

Section 3.4.2.1 has discussed the tendency of the minimizers occurring in OV order. The preverbal object position attracts the minimizers because minimizers welcome focal prominence, as observed in Israel (2011), and Nakanishi (2006). Particularly, in Mandarin Chinese the scalar focus in the preverbal position fits well with the emphatic nature of minimizers. The scalar focus of the preverbal position biases an expressed proposition toward an emphatic rhetorical force, and therefore it is consistent with properties of minimizers. The phenomenon shows that minimizers tend to combine with the constructions where their informative values are foregrounded in an emphatic way. This preference for being associated with the constructions conveying emphasis still holds true for fixed 'one'-phrase in the canonical word order SVO in Early Mandarin Chinese. In both sub-periods when 'one'-phrases are interpreted as minimizers in VO order, they tended to co-occur with a degree adverbial modifier. This co-occurrence was particularly salient under existential negation. The degree modifiers occurred in a pre-negator position, which are bolded in (55)-(57). There was a wide variety of degree adverbials observed in this position. For example, 全 *quán* 'all' in (55) has an exhaustive reading including all the alternatives of different levels of moisture. Similarly, 並 *bìng* 'entirely' and 毫 *háo* 'completely' also entail exhausitivity of all possibilities or degrees of the nominal denoted by the NP. The latter two adverbials in (56) and (57) are even treated as NPIs since they are only allowed in negative environments for an emphatic rhetorical force (Hsiao 2002). The two examples show that two kinds of NPIs, a degree adverbial and a minimizer, are compatible with each other as long as they contribute to the same purpose of emphatic strengthening.

(55) 全沒有一點水氣 [from *ASACC*]
quán méi yǒu [yì diǎn shuǐqì]
all NEG.EXT EXT one dot moisture
'There is not even a bit of moisture.'

(56) 見四面並無一點縫隙 [from *ASACC*]
jiàn sì miàn **bìng** wú [yì diǎn fèngxì]
see four side entirely NEG.EXT one dot crack
'saw there was not even a crack around'

(57) 毫無一點慌亂 [from *ASACC*]
háo wú [yì diǎn huāngluàn]
completely NEG.EXT one dot flurry
'There was not a bit of flurry.'

What the various adverbials have in common is that they all create a scale for the minimizers to operate on, and therefore the scalar inferences are reinforced. Their consistency in the emphatic rhetorical force makes the co-occurrence of a minimizer and a degree modifier frequent. According to the data from the *Corpus of Early Mandarin Chinese*, the majority of the fixed 'one'-phrases as minimizers in VO order under the existential negation are combined with a degree modification, as shown in Figure 3.8. A salient increase of the co-occurrence between the two sub-periods can also be observed.

Figure 3.8: The percentage of degree adverbial modification co-occurring with the minimizers in VO order under existential negation

The co-occurrence of degree adverbial modification and the minimizers in VO order is also evident in the cases of the general negator 不 *bù*. This group of the minimizers has a portion of 52 % modified by degree adverbials.

The modification of adverbial degrees is a unique property of the fixed 'one'-phrases when they served as minimizers in Early Mandarin Chinese. The same degree modification is not found in the data of the fixed 'one'-phrases as PPIs in the same period of Chinese. Anomalies arise when a fixed 'one'-phrase in its PPI use combines with degree modification, as shown in the ungrammaticality of (58) and (59) (cf. (55) and (56)). The ungrammaticality judgment of (58) and (59) is based on Modern Mandarin. This type of construction is also not attested in the Early Mandarin Chinese data. Since the fixed 'one'-phrase as a PPI is an attenuator, it conflicts with the constructions which are inherently emphatic. Therefore, the degree modification can successfully distinguish the uses of a PPI and an NPI co-existing in the fixed 'one'-phrase.

(58) *全有一點水氣 [Modern Mandarin]
quán yǒu [yì diǎn shuǐqì]
all EXT one dot moisture
*'There is some moisture all around.'

(59) *見四面並有一點縫隙 [Modern Mandarin]
jiàn sì miàn **bìng** yǒu [yì diǎn fèngxì]
see four side entirely EXT one dot crack
*'saw there was entirely a crack around'

The tendency of the minimizers to occur with degree modification helps to explain why some of the minimizers still remained in VO order even though the preverbal object position was more ideal for the interpretaion of a minimizer. Given the fact that a fixed 'one'-phrase may be ambiguous in the postverbal object position, the minimizer interpretation can still be distinguished by degree modification. In the development of a numeral phrase into a minimizer, the fixed 'one'-phrase as a minimizer has made its characteristics, such as its scalar property and emphatic function, more salient and overt to satisfy the need of maximal distinction. In brief, although the numeral phrase was polysemous, each of its various functions tended to be associated with different semantically and pragmatically compatible constructions, which reinforce the function in question.

3.4.2.2.2 Rhetorical questions and conditionals: scalar reversing

According to corpus data, when the fixed 'one'-phrases as minimizers appeared in VO order, they also had the tendency to occur in rhetorical questions and conditionals.[7] 41 out of the 377 tokens of the fixed 'one'-phrases in VO order belong to this category. The generalization is that fixed 'one'-phrases in rhetorical questions and conditionals must be interpreted as minimizers. In other words, the reading of PPIs is banned in such a context. Both rhetorical questions and conditionals can secure the minimizer reading of fixed 'one'-phrases and make the phrase unambiguous in the postverbal object position.

Fixed 'one'-phrases in a rhetorical question have to be understood as minimizers, as shown in (60) and (61). The questions do not expect an answer from the hearer; instead, they entail a negative answer. The rhetorical question in (60) intends to emphasize the fact that there is no spot at all, while the question (61) implies a negative answer. Generally, the negative bias can be observed in a question containing a minimizer (Giannakidou 2007).

(60) 那街上擠的，哪兒有一點空兒？ [from *ASACC*]
nà jiē shàng jǐde， nǎr yǒu [yì diǎn kōng-r]？
that street on crowded where have one dot space-DIM
'The street is so crowded. There is not an empty spot!'

[7] Questions are typically environments for NPIs. The phenomenon that only rhetorical questions are found in the database is possibly due to the limitation of the genres included. The questions discussed in this section are labeled as 'rhetorical questions' because they are negatively biased.

(61) 那箇敢懷一點私心？ [from *ASACC*]
nǎ ge gǎn huái [yì diǎn sīxīn]?
which CLF dare conceive one dot selfishness
'Who dares to have the slightest bit of selfishness?'

The negative bias is claimed to be triggered from either of the two sources: one is from the negative feature of a minimizer (Postal 2003), while the other is attributed to the presence of a covert or overt *even* crosslinguistically (Giannakidou 2007, Heim 1984). When fixed 'one'-phrases are used as minimizers, they contain both features. Therefore, they result in the expectation of a negative answer.

Similarly, a fixed 'one'-phrase in the conditional as in (62) and (63) also must be understood as a minimizer designating the minimal amount. The fixed 'one'-phrases in the two conditionals designate the minimal amount and trigger scalar inferences, like the minimizers in negative clauses. In the two conditionals, a PPI reading is not possible.

(62) 若有一點謊話，天打雷劈。 [from *ASACC*]
ruò yǒu [yì diǎn huǎnghuà]，tiān dǎ léi pī
if have one dot lie sky hit lightning split
'If there is a bit of lie in it, I will be struck by lightning.'

(63) 往後再有一點分外之事，我一概不饒。 [from *ASACC*]
wǎnghòu zài yǒu [yì diǎn fènwài zhī shì]，
from now on again have one dot beyond one's duty GEN thing

wǒ yìgài bù ráo
I without exception NEG forgive
'From now on, if anyone does anything beyond his duty, I will not forgive no matter what.'

It is not uncommon for NPIs to occur in rhetorical questions and conditionals because the two constructions, similar to negated clauses, reverse the pragmatic scales (Haspelmath 1997). The reversal of pragmatic scales in a rhetorical question can be observed in the contrast of (64) and (65) (adapted from Haspelmath 1997: 112). The quantifying superlatives denote the ends of a scale, and are thus sensitive to a pragmatic scale. The universal reading of the quantifying superlatives, *any dog can swim across this river*, occurs reversely in the positive and negative pair.

(64) A. The weakest dog can swim across the river. [+universal reading]
B. The strongest dog can swim across the river. [-universal reading]

(65) A. Can the weakest dog swim across the river? [-universal reading]
B. Can the strongest dog swim across the river? [+universal reading]

Since minimizers express the lowest point on a pragmatic scale, they also have universally quantified readings (Haspelmath 1997). Analogous to quantifying superlatives, the minimizers are restricted to scale-reversing contexts to give rise to the universal. Therefore, when Mandarin fixed 'one'-phrases appear in the scale setting of rhetorical questions and conditionals, they must

be understood as minimizers. In other words, fixed 'one'-phrases are free from ambiguity in the postverbal position when combined with rhetorical questions and conditionals.

Scale reversal as a necessary condition for an NPI interpretation is characterized as downward entailment by Ladusaw (1980, 1983). According to Ladusaw (1980, 1983), polarity sensitivity is treated as a sensitivity to logical monotonicity. NPIs are licensed in the scope of a downward entailing operator, which licenses inferences from general properties to specific properties. For instance, 'Amber doesn't eat vegetables' entails 'Amber doesn't eat carrots'. Negation, questions, and conditionals are downward entailing environments which license NPIs.

Minimizers are often labelled as "strong" or "strict" NPIs because of the fact that they are licensed narrowly and appear only with negation in many languages (Giannakidou 2011). The class of strict NPIs is defined as opposed to the "broad" or "weak" NPIs, which can appear in nonveridical environments that are not negative, such as rhetorical questions and conditionals. The fixed 'one'-phrases as minimizers behaved as strict NPIs in Early Mandarin I because they were only found in full negative environments. The environments where they could occur expanded to include rhetorical questions and conditionals in Early Mandarin Chinese II, and the minimizers behaved similarly to the class of broad NPIs. In the process of diachronic development, the fixed 'one'-phrases exhibited host-class expansion. The variety of the environments where the minimizer interpretation appears has increased over time.

3.4.2.2.3 Summary of the fixed 'one'-phrase as minimizers in VO order

In Early Mandarin Chinese, fixed 'one'-phrases were used for multiple functions, including as a counting phrase, a PPI and a minimizer NPI. As a result, there emerged a need to distinguish possible readings of the same phrase. With respect to the minimizer, the majority of the minimizers were used as an object in OV order because the minimizers tended to receive focal prominence and the syntactic position was free from ambiguity. However, a fair proportion of the fixed 'one'-phrases as minimizers remained in VO even though the position under negation might be ambiguous between a counting phrase and a minimizer. Minimizers in VO order came to be associated with constructions which help to induce scalar inferences, including degree modification, rhetorical questions, and conditionals, to assure their NPI reading. For example, the degree modification discussed in Section 3.4.2.2.1 contributes an exhaustive reading of all the possible alternatives. The fixed 'one'-phrase in this setting is infused with scalar property, resulting in the NPI reading. Regarding rhetorical questions and conditionals, they reverse the pragmatic scale. In this kind of scalar setting, the only possible reading of a fixed 'one'-phrase is a minimizer NPI. This development shows that a polysemous phrase tends to create maximal distinctions among various readings via being associated with constructions which can make the reading in question more salient and less ambiguous.

3.4.2.3 Further distinctions among the functions of fixed 'one'-phrases: adverbials

In Early Mandarin Chinese II, *yi-dian* 'one-dot' alone without the noun is found used as an adverb when it was in the sense of either a PPI or an NPI. The emergence of the two functions provides evidence for two important characteristics of the development of fixed 'one'-phrases. One is the maximal distinction of different senses in a polysemous phrase. The other is the

change of the relationship between the components of a numeral phrase when a fixed 'one'-phrase is used in different functions.

The adverbial function of *yi-dian* 'one-dot' as an NPI made its first appearance in Early Mandarin Chinese I. However, only 5 tokens of adverbial NPIs are found in the corpus data. The use as adverbs began to increase later, in Early Mandarin Chinese II. As for the PPI function, its appearance can be traced back to Early Mandarin Chinese II based on corpus data. The adverbial PPIs and NPIs are therefore considered a later development than their nominal use.

In Early Mandarin Chinese, when *yi-dian* 'one-dot' functioned as a minimizer adverb, it preceded negation, as shown in (66) and (67). *Yi-dian* 'one-dot' functions as a degree modifier to modify the adjectival predicates as in (66), or a verb phrase as in (67). Notably, the adverb is not allowed to appear before the subject.

(66) 一點兒不費事 [from *ASACC*]
[yì diǎn-r] bú fèi shì
one dot-DIM NEG waste thing
'not troublesome at all'

(67) (subject)一點不肯騙人 [from *ASACC*]
(subject) [yì diǎn] bù kěn piàn rén
SBJ one dot NEG be willing to cheat people
'(Subject) is not willing to cheat people at all'

In Mandarin Chinese, the preverbal adverbs which appear only after the topic or subject but cannot appear at the beginning of a sentence are generally manner adverbs or adverbs modifying an event (Li and Thompson 1981, Paul to appear)[8]. The Mandarin minimizer adverb falls into this category. Since the minimizer adverb is sensitive to negative polarity, its relative position to the negator is crucial. This type of Mandarin preverbal adverbs may appear before or after a negator. The two orders have to do with the scope of the adverb and the negator (Li and Thompson 1981). When an adverb occurs after a negator as in (68), it indicates that an event does occur, but not in the way designated by the adverb. However, if the adverb provides a frame within which a certain event is or is not true, the negator or the affirmative predicate must follow the adverb to be within its scope, as shown in (69). The difference in position correlates with the difference in scope, which can be observed in the contrast between (68) and (69).

(68) 他不故意說話 [Modern Mandarin]
tā **bú** **gùyì** shuōhuà
he NEG deliberately speak
'He isn't speaking deliberately.'

(69) 他故意不說話[Modern Mandarin]
tā **gùyì** **bù** shuōhuà
he deliberately NEG speak
'He deliberately does not speak.'

[8] The other type of preverbal adverb can also occur in the sentence-initial position. For the discussion of the types of preverbal adverbs, please refer to Li and Thompson (1981).

As for Mandarin minimizer adverbs, they can only appear in the position preceding the negator. Since the minimizer adverbials do not refer to a specific manner of the predicate, they do not fit in the post-negation position. This syntactic distribution is parallel to that of other adverbial NPIs in Mandarin Chinese. Specifically, Mandarin adverbial NPIs are strictly restricted to the pre-negator positon (Hsiao 2002). For example, the adverbial NPI, 絲毫 *sīháo* 'the slightest' is only allowed to appear before the negator, as shown in (70). In Hsiao's analysis based on a minimalist approach (2002), Mandarin NPI adverbs occurring in this position are m-commanded by their licensor, a negator.[9] The analysis points out that where the minimizer adverb can occur is constrained by its sensitivity to negation.

(70) 絲毫沒有聲音[Modern Mandarin]

sīháo	**méi**	yǒu	shēngyīn
the slightest	NEG.EXT	EXT	sound

'There is not even a slightest sound.'

Another adverbial function of *yi-dian* 'one-dot' belongs to the PPI category. The distribution of the PPI adverbial is complementary to that of the adverbial NPI use of *yi-dian* 'one-dot'. The adverbial PPIs can only appear after a predicate to refer to an approximative small degree, similar to English *a little*. It retains the approximation and the attenuation of its nominal use. The earliest occurrence of this adverbial PPI can be traced back to Early Mandarin Chinese II. For instance, the adverbial *yi-dian* 'one-dot' in (71) follows the adjective, and the one in (72) occurs postverbally. The syntactic position is parallel to that of Mandarin postverbal adverbials.

(71) 還是等你好一點 [from *ASACC*]

háishì	děng	nǐ	hǎo	[yì	diǎn]
had better	wait	you	good	one	dot

'had better wait till you feel a little better'

(72) 他的憤氣又平了一點 [from *ASACC*]

tāde	fènqì	yòu	píng	le	[yì	diǎn]
his	anger	again	subside	PRF	one	dot

'His anger further subsided a little.'

Generally, the function of Mandarin postverbal adverbs is to signal frequency or duration (Huang et al. 2009, Li and Thompson 1981). The postverbal adverbs are related to quantity, indicating duration or frequency of an activity. This kind of adverb consists of a numeral and a unit word, as shown in (73) and (74). The phrase specifying the frequency or quantity is not allowed to appear preverbally.

(73) 他今天睡了一次 [Modern Mandarin]

tā	jīntiān	shuì	le	[yí	cì]
he	today	sleep	PFV	one	time

'He slept once today.'

(74) 他吃了兩口 [Modern Mandarin]

[9] According to Hsiao (2002), the adverbial NPI is not c-commanded by the head of NegP, but is m-commanded by NegP since they both occur under the node of NegP.

tā chī le [liǎng kǒu]
he eat PFV two mouth
'He has two bites.'

These postverbal quantifier phrases appear in the same position as the objects in Mandarin canonical SVO word order. As observed by Li (1990), the position-wise similarity between a quantifier phrase and a postverbal position blocks their co-occurrence. Due to this property, the postverbal quantifying phrases are analyzed as quasi-arguments in Paul (1988). The postverbal adverbials are thus viewed as a special class in the literature (Huang et al. 2009). Specifically, the postverbal adverbials are used to provide new information about the eventuality expressed by a verb or adjective in two respects. One is the degree or extent; the other concerns evaluative information about the event in question in terms of quantity. The two features also explain why Mandarin postverbal adverbials often appear in the form of numerical quantity.

When *yi-dian* 'one-dot' is used as a PPI adverbial, its function is quite similar to other postverbal adverbials in general. It offers information about degree in terms of quantity as shown earlier in (71) and (72). Although the *yi-dian* 'one-dot' adverbial looks parallel to other postverbal quantifier phrases, they still have two major differences. One is that the PPI adverbial *yi-dian* 'one-dot' is an approximator. It does not provide precise information in terms of quantity as other postverbal quantifier phrases do. The other is that the *yi-dian* 'one-dot' adverbial is not a canonical numerical quantity phrase. Its numeral must be 'one' and cannot be substituted by other numerals, whereas a postverbal quantifier can accommodate different numerals. This contrast indicates the change of relationship between the components of the fixed 'one'-phrase in the process of developing into a polarity item from a numeral phrase. *Yi-dian* 'one-dot' as an adverbial is better analyzed as a fixed unit instead of as a canonical numeral phrase. Given the differences, the PPI adverbial *yi-dian* 'one-dot' still has the same syntactic distribution as other postverbal adverbials since they serve the same purpose of providing quantified information for a predicate.

When functioning as a PPI or an NPI, *yi dian* 'one dot' without an accompanying noun can also be found in nominal use, as shown in (75) and (76), from Early Mandarin Chinese II.

(75) 他吃了個乾淨，我一點兒也沒嚐著 [from *ASACC*]
tā chī le ge gānjìng，wǒ [yì diǎn-r] yě méi cháng zháo
he eat PVF CLF clear I one dot-DIM also NEG taste ASP
'He ate up everything. I couldn't even taste a bit.'

(76) 猶可賣與外人一點兒 [from *ASACC*]
yóu kě mài yǔ wàirén [yì diǎn-r]
still can sell give outsider one dot-DIM
'still can sell some to other people'

In sum, the PPI and NPI adverbial functions of *yi-dian* 'one-dot' exhibit a complementary distribution. Since the minimizer as an adverb favors negative polarity, it is required to appear in the pre-negator position to obtain the correct scope relation with the negation. With respect to the PPI function of the *yi-dian* 'one-dot' adverbial, its primary function is to provide evaluative information about the degree of an eventuality. It is therefore not surprising that it patterns similarly to the class of postverbal adverbials. Although the same adverbial phrase *yi-dian* 'one-

dot' has two opposite functions, a PPI and an NPI, the clear division of preverbal and postverbal positions make the two functions fully distinguishable. The diversion of the two functions shows that a polysemous phrase tends to make the maximal distinction between its different senses. The adverbial *yi-dian* 'one-dot' is a later development than its nominal use, and this later development makes a more salient distinction of its PPI and NPI functions. The PPI and NPI uses emerged in the two different syntactic constructions, preverbal and postverbal modification respectively, due to their own specific semantic properties. In other words, both the PPI and NPI adverbials exhibited the tendency to be associated with an existing construction which served a similar purpose.

3.4.3 Non-polarity fixed 'one'-phrases: Emphatic function from a definite minimal quantity

Fixed 'one'-phrases as PPIs and NPIs discussed in Section 3.4.1 and Section 3.4.2 refer to an indefinite quantity. When fixed 'one'-phrases combine with the demonstrative 這 *zhè* 'this'/ 那 *nà* 'that', the demonstrative makes the numeral expression definite or referential (Huang et al. 2009). In this case, the definite fixed 'one'-phrases lose their sensitivity to polarities. Although the definite fixed 'one'-phrases are not canonical polarity items, they are similar to the polarity items in that they both induce scalar inferences.

Departing from the attenuating function of fixed 'one'-phrases as PPIs, definite fixed 'one'-phrases place an emphasis on a minimal quantity. This function emerged in Early Mandarin Chinese II. As shown in (77) and (78), the two fixed 'one'-phrases profile a definite instance of extremely small quantity.

(77) 為這一點小事，鬧出國際問題。 [from *ASACC*]
wèi zhè [yì diǎn xiǎo shì]， nàochū guójì wèntí
for this one dot small thing cause international problem
'caused an international problem for such a petty matter.'

(78) 這一點點的底子，總要有的 [from *ASACC*]
zhè [yì diǎn diǎn dǐzi]， zǒng yào yǒu de
this one dot dot fortune always must have PTC
'(They) should have at least this bit of money.'

Definite fixed 'one'-phrases can even take an animate countable noun, as in (79). The 'one' phrase emphasizes that the subject has only one girl and it is subjectively considered as the smallest possible quantity. In addition, the fixed 'one'-phrase refers to a specific referent.

(79) 俺只這一點女孩 [from *ASACC*]
ǎn zhǐ zhè [yì diǎn nǚhái]
I only this one dot girl
'I only have this daughter.'

The definite fixed 'one'-phrase is not a polarity-sensitive item. Although the majority of them occur in a non-negative environment, a couple of examples in a negative context can still be observed, as in (80).

(80) 這一點苦受不得 [from *ASACC*]

zhè	[yì	diǎn	kǔ]	shòu	bù	de
this	one	dot	suffering	endure	NEG	can

'cannot endure this bit of suffering'

Both the definite and indefinite uses of the fixed 'one'-phrase show the potential that a small quantity tends to turn into scalar operators. The demonstrative markers clearly indicate the fixed 'one'-phrases are definite. To qualify the condition of definiteness, the referent of the fixed 'one'-phrases must be known to both speaker and hearer. The speaker's viewpoint is necessarily involved in the use of definite fixed 'one'-phrases. As in (79) and (80), the definite fixed 'one'-phrase induces an emphatic function by profiling a definite instance with the smallest quantity against other alternatives with a greater quantity. It invites the inference that the nominal is considered to be the minimal quantity based on the speaker's subjective scale. In other words, the definite fixed 'one'-phrase is construed based on the speaker's viewpoint. The use shows how the speaker subjectively measures the definite instance of a nominal type. Although the definite and indefinite fixed 'one'-phrases differ significantly in terms of the sensitivity to polarities, they are still relevant in the sense of using the concept of a small quantity to invite scalar implicature. The emphasis of the definite phrase is from downplaying its denoted amount. The shift through understatement from attenuation to an emphatic function is not uncommon (Israel 2006).

In Early Mandarin Chinese II, although the fixed 'one'-phrase developed various functions, these functions could still be distinguished by their associated constructions. The polarity and non-polarity functions of a fixed 'one'-phrase can be clearly distinguished by co-occurrence with demonstratives. Regarding the difference in the quantity they refer to, it is reflected in the tendency of co-occurrences with a diminutive marker. The definite fixed 'one'-phrase reaches an emphatic function by understating the smallness of the quantity in an exaggerated manner. The percentages in Table 3.2 show that the definite fixed 'one'-phrases are more prone to have an overt diminutive marker. The distinct property of referring to an extremely small quantity of the definite fixed 'one'-phrase is reinforced in the combination with a diminutive marker. The tendency of the addition of the diminutive markers helps to make the distinction in terms of quantity more salient.

Table 3.2: Co-occurrence frequencies of diminutive markers with 'one'-phrases

Types of fixed 'one'-phrases	**Indefinite**	**Definite**
Frequency of co-occurrences of diminutive markers*	19.3 %	31.4 %

* based on a total of 573 counts of fixed 'one'-phrases

To summarize, the definite 'one'-phrase with an emphatic function appeared in Early Mandarin Chinese II. The definite use is construed based on the speaker's viewpoint with a subjective scale. Moreover, the definite fixed 'one'-phrase is also a scalar operator, which triggers scalar inferences by profiling a specific instance with a small quantity against other possible alternatives. This function together with the NPI and PPI functions show that a small quantity has the tendency to be recruited as scalar operators in different ways.

3.5 Internal Development of the Fixed 'One'-phrase across Periods

The discussion of the fixed 'one'-phrase so far has shown that the phrase has developed versatile functions. In Old Chinese, *dian* 'dot' was used in its literal meaning – a black small round-shaped stroke. In Middle Chinese, it was recruited as a unit word which had a function similar to a classifier. It was used to individualize the referent of a noun in a numeral phrase by referring to the gestalt perception of a dot-shaped object. In Early Mandarin Chinese, not only was a fixed 'one'-phrase a numeral phrase, but it also functioned as a nominal PPI or NPI. The PPIs and NPIs further expanded from nominal use to adverbial use. The various functions show that the fixed 'one'-phrase was polysemous. The question then is where these functions came from and how they related to each other.

The historical development of Chinese classifiers has received a great amount of attention. There exist many studies about the development of various classifiers with a detailed description of their semantics and functions in different periods of Chinese (Liu 1965, Lü 1985, Ōta 1987, among others). However, the development of Mandarin classifiers in a numeral phrase or in context has not yet received due attention. The focus on the semantic changes of classifiers alone may fail to fully capture the association of seemingly different but actually related functions. For example, it is not convincing to claim that the unit word *dian* 'dot' has individually developed as both a positive and negative polarity sensitive item without any discussion of other elements in the same phrase. If the unit word *dian* 'dot' is not examined in a numeral phrase, it is not possible to provide a unified account for its polysemy. The discussion of the fixed 'one'-phrase from Old Chinese to Early Mandarin Chinese shows that it is the whole numeral phrase rather than a single lexical item that has undergone change. In the following sections, I will explain how Mandarin numeral phrases as a construction have changed (Section 3.5.1) and how the directionality of this development was constrained by the syntactic and semantic properties of numeral phrases (Section 3.5.2).

3.5.1 Incremental development of fixed 'one'-phrases

In Mandarin Chinese, the fixed 'one'-phrase is found to be primarily used in four functions: as a counting phrase, as a subjective quantity expression of a small amount, as an attenuating PPI, and as an emphatic NPI, as shown in (81)-(84), respectively.[10]

(81) 一點寒星直對我飛來 [counting] [from *ASACC*]
[yì diǎn hán xīng] zhí duì wǒ fēi lái
one dot cold star straight to me fly come
'A cold star flew straight toward me.'

(82) 這一點小事，我可以幫忙 [subjective evaluation] [from *ASACC*]
zhè [yì diǎn xiǎo shì]， wǒ kěyǐ bāngmáng
this one dot small matter I can help
'I can help with this small matter.'

[10] The data of Modern Mandarin Chinese are from the *Academia Sinica Balanced Corpus of Modern Chinese.*

(83) 多給你一點生活費 [PPI] [from *ASACC*]
duō gěi nǐ [yì diǎn shēnghuófèi]
more give you one dot allowance
'(I) will give you some more allowance.'

(84) 一點價值也沒有 [NPI] [from *ASACC*]
[yì diǎn jiàzhí] yě méi yǒu
one dot value YE NEG.EXT EXT
'There is not even a bit of value.'

These seemingly idiosyncratic functions all share an obvious central property – quantity. These functions of a fixed 'one'-phrase form a natural category expressing a small quantity. When a fixed 'one'-phrase is used as a counting phrase as in (81), the choice of *dian* 'dot' as a unit word ensures that the referred quantity is small. It is the prototypical case of a small quantity denoted by the fixed 'one'-phrase. A small quantity can be manipulated into different sizes to fulfill different pragmatic functions when it is placed on different scales. A scale is construed by the construction that a fixed 'one'-phrase combines with. For example, the quantity in (82) is subjectively assessed as a fairly small amount according to the speaker's subjective scale. The subjective assessment is from the speaker-oriented deictic. The indefinite quantity of the fixed 'one'-phrase can further designate the minimal amount, as the use of NPI in (84). The negation causes the reversal of a pragmatic scale and makes the fixed 'one'-phrase understood as the minimal unit. However, the prototypical small quantity can not only be reduced to a minimal unit, but also shaped into a more neutral quantity. The PPI use of a fixed 'one'-phrase in (83) is such a case. The neutral quantity of a fixed 'one'-phrase can be observed by the substitution of 一些 *yì xiē* 'some'[11], as shown in (85).

(85) 多給你一些生活費 [PPI] [from *ASACC*]
duō gěi nǐ [yìxiē shēnghuófèi]
more give you some allowance
'(I) will give you some more allowance.'

The prototypical quantity denoted by the fixed 'one'-phrase can be extended when it is highlighted by different scale settings. The same syntactic string can accommodate the systematic relationships among the different functions not only because of the constructions it combines with but also because of its structure, which has different possibilities of analyses. The fixed 'one'-phrase has a binominal structure. As shown in (86), the phrase has two juxtaposed NPs. The position of NP1 is filled by a classifier or a measure word, which is recruited from a noun.

(86) NUM NP1 NP2

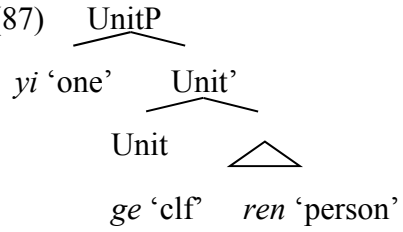
[11] According to Lü (1985), *xiē* was a semi-measure word for a small quantity. Its meaning has shifted from smallness to indefiniteness. Nowadays, *xiē* generally refers to an indefinite amount, as the equivalent of English *some*. Its reference to a small quantity can only be observed in limited cases. Its function of modifying a small quantity is already taken over by *diǎn* 'dot'.

The relationship of the two NPs may vary and the variation may give rise to different interpretations of the structure. With the possibility of multiple interpretations, the syntactic string has been given new meanings over time.

3.5.1.1 The polysemous nature of a binomial structure

A fixed 'one'-phrase is a binominal string, NUM NP1 NP2. Its first appearance in Middle Chinese was as a numeral phrase. The structure of Mandarin numeral phrases has received much attention in a formal approach (Cheng and Sybesma 1999, Huang et al. 2009, Zhang 2013). The consensus is that NP1 is analyzed as the head of a Mandarin numeral phrase. The structure of the Mandarin numeral phrase postulated by Zhang (2013) is adapted in (87). NP1 as a unit word is hosted by Unit P, and it selects NP2. The structure is proposed to explain the agreement between a noun and a classifier and to capture the formal dependency between a classifier and a numeral.

(87)



When the fixed 'one'-phrase is used for a counting purpose, it is the same as the canonical numeral phrase. The unit word *dian* 'dot' only selects the nouns which have the gestalt perception of a small, solid dot-shaped object. In addition, different numerals can be used in this numeral phrase. In contrast, the constraint of the selectional restriction on NP2 is emancipated in its functions as a PPI, an NPI, and a subjective quantifier phrase. The three functions also lack flexibility to accommodate other numerals. In other words, its numeral 'one' is not in contrast to another numeral. Constructionalization can therefore be inferred to have taken place in the transition from a numeral phrase to other functions. The change does not only occur in meaning, but also in the constituent structure. The reanalysis of the relationships among the three components of a binomial structure conforms to the synchronic distinctions between a modifier phrase and a numeral phrase. The reanalysis can be represented in (88).

(88) [NUM [NP1 NP2]] → [[NUM NP1] NP2]

Modifier Head

The succession of changes exemplified by the transition of a counting fixed 'one'-phrase to a non-counting fixed 'one'-phrase resulted in a new construction. The syntactic string is linked to different constructions via internal reanalysis. The incremental development will be presented in the next section.

3.5.1.2 Diachronic association of the fixed 'one'-phrase with other constructions

The development of a polysemous structure is a process of associating constructions with similarities in form and coherence in meaning. However, resemblance in form and meaning among related constructions may result in ambiguity. In order to make each function distinct, a polysemous structure tends to create maximal distinction among all of its senses. In this section,

I will use the development of the fixed 'one'-phrase as a polysemous phrase to illustrate this tendency of language change.

Chinese underwent an important syntactic change regarding numeral phrases around Middle Chinese, which was discussed in Chapter 2. The syntactic change is summarized below. In Old Chinese, a quantity was expressed by two kinds of numeral phrases, UW-NOUN-NUM and NUM-UW-NOUN. The former was responsible for counting, while the latter was quantity-modification. The two form-meaning pairings divided the labor of different functions related to quantity. However, this contrast disappeared in Middle Chinese. The numeral construction [NUM UW NOUN] came to encompass all quantity-related expressions.

The numeral phrase NUM-UW-NOUN later developed a close relationship with two constructions, the QUANTIFIER construction and the MODIFICATION construction. Mandarin Chinese has several quantifying elements, such as 大部分 *dàbùfèn* 'most', 全部 *quánbù* 'all', 所有 *suǒyǒu* 'all', 幾 *jǐ*-CL 'a few, several' 若干 *ruògān* 'several', and 許多 *xǔduō* 'a lot'. The major difference between a numeral phrase and a quantifier phrase is that a numeral phrase designates an absolute quantity, whereas a quantifier phrase refers to a non-precise quantity (Gebhardt 2009). The difference is reflected in whether they can be modified by 總共 *zǒnggòng* 'in total' and 整整 *zhěngzhěng* 'exactly' (Zhang 2013), as shown in the contrast of (89) and (90). The quantifiers do not have an absolute quantity; therefore they cannot be modified by counting-related modifiers.

(89) 我買了總共三顆蘋果。
wǒ mǎi le zǒnggòng [sān kē pínguǒ]
I buy PRF total three CLF apple
'I bought a total of three apples.'

(90) *我吃了總共大部分蘋果。
wǒ chī le zǒnggòng [dàbùfèn pínguǒ]
I eat PRF total most apple
*'I ate a total of most apples.'

Mandarin QUANTIFIER construction appears in the form of [QUANTIFIER NOUN]. The quantifier and the noun are in the relation of a modifier and a modified. Mandarin Chinese is claimed to be a head-final language, where the modifier precedes the modified (Chao 1968). The QUANTIFIER construction is inherited from the MODIFICATION construction [MODIFIER NOUN].

The numeral phrase NUM-UW-NOUN is a binominal string NUM-NP1-NP2. In the case of the fixed 'one'-phrase, the numeral and NP1 gradually formed a unit. The string was then reanalyzed as [['ONE' NP1] NP2] around Early Mandarin Chinese I. The form resembles the QUANTIFIER construction [QUANTIFIER NOUN], which already existed in Old Chinese. The part of ['ONE' NP1] behaved as a quantifier to describe the quantity-related property of NP2. In addition, the quantity-modifying function of the numeral construction is coherent with the function of the QUANTIFIER construction. Due to the similarity and coherence of the two constructions, the newly developed [['ONE' NP1] NP2] is associated to the extant QUANTIFIER construction and further to the MODIFICATION construction over time. The hierarchical relationship characterizing

the inherence relations is shown in (91). Based on their resemblance, speakers can generalize over the numeral string NUM-UW-NOUN based on the extant constructions.

(91) [MODIFIER NOUN]
|
[QUANTIFIER NOUN]
|
[[‘ONE’ NP1] NP2]

The reanalysis of [‘ONE’ [NP1 NP2]] > [[‘ONE’ NP1] NP2] can be viewed as the association of the numeral string NUM-UW-NOUN to the extant construction with the principle of similarities in both form and meaning. The associations of the constructions are not random. They all share the core concept of the fixed ‘one’-phrase – an indefinite small quantity. In the development of the fixed ‘one’-phrase into modifiers, the numeral phrase was gradually linked to different constructions at different time points. The links can be viewed as local steps of a diachronic change. The schema of incremental changes of a fixed ‘one’-phrase in local steps is provided in Figure 3.9[12].

[12] The presentation of the pairing of form and meaning is built upon the symbolic structure proposed in Croft and Cruse (2004: 258). The notation used in this figure: SY: syntax, PH: phonology, SM: semantics, PG: pragmatics, NUM: numeral, DIM: diminutive, ADJ: adjective, ADV: adverb.

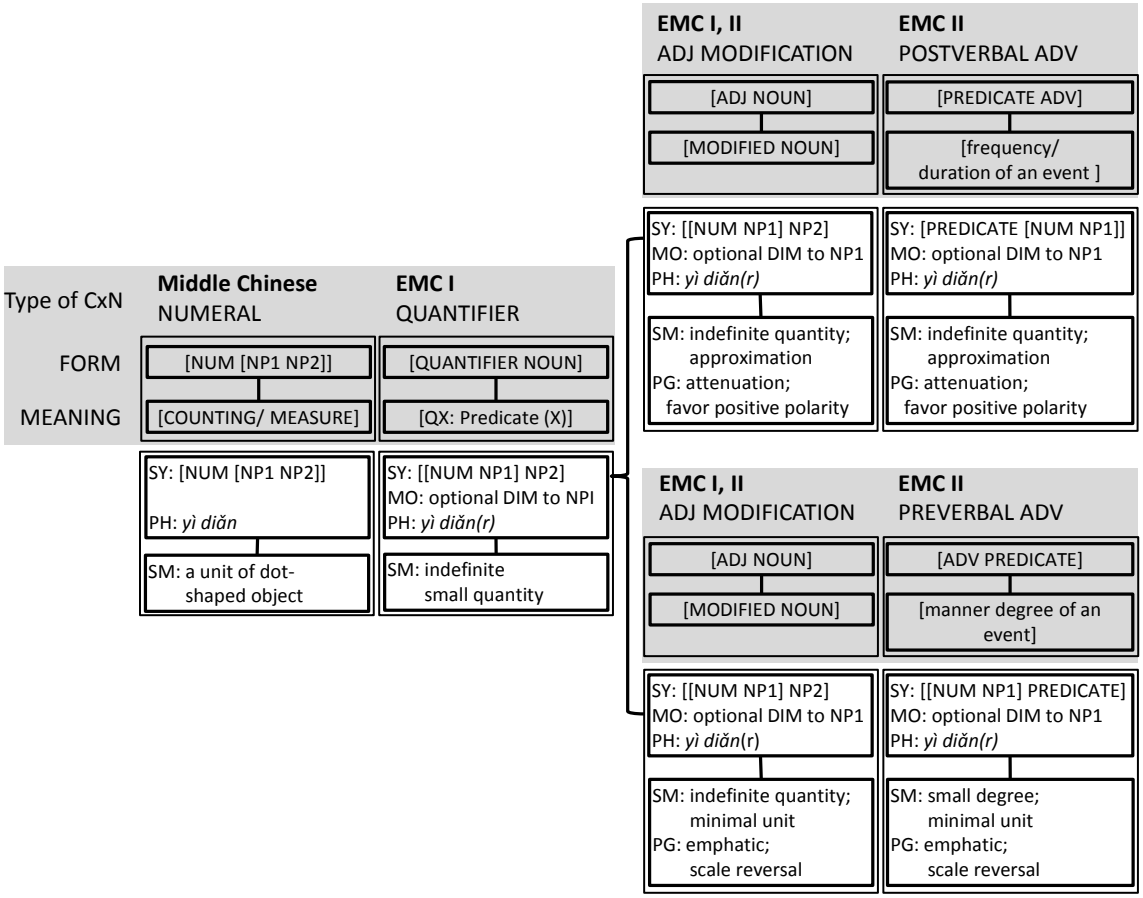


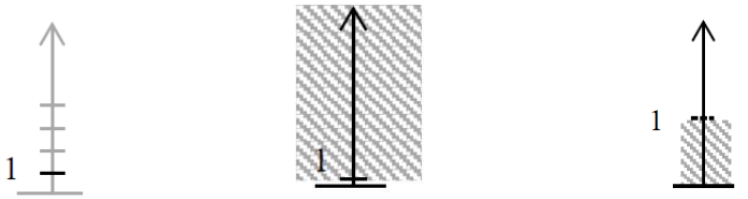
Figure 3.9: Association of a fixed 'one'-phrase with different constructions across periods

Each construct in Figure 3.9 represents the instantiation of the fixed 'one'-phrase in a specific type of construction. From Early Mandarin Chinese I to Early Mandarin Chinese II, the fixed 'one'-phrase was gradually associated with a higher-level construction. The tendency is a sign of grammaticalization of the numeral phrase 'one'-'dot'-NOUN, which gradually lost its core meaning as a counting phrase specifically for dot-shaped objects and became more abstract. When the fixed 'one'-phrase is matched onto a construction, it is interpreted based on the construction in question. These links to a specific construction make the fixed 'one'-phrase polysemous.

Although the different functions of the 'one'-phrase emerged at different time periods, they all persist in Modern Mandarin Chinese. These functions are related in that they all adhere to the core meaning, an indefinite quantity. The small indefinite amount can be shaped into different functions, as shown in (92). A canonical scale is construed to be processed from the bottom, whereas a reversed scale is processed from the top (Israel 2011). The prototypical function of a 'one'-phrase is to count. The quantity must be precisely one unit because it is embedded in an ordinal scale and profiles the first measuring unit. In the NPI function of a 'one'-phrase, the small quantity designates a minimal unit. Profiled on the scale are all the quantities higher than the minimal unit because the scale must be processed in reverse due to negation. The shaded area in the scale b in (92) refers to the profiled area of the scale, which is above the minimal unit. The profiled area indicates the scalar inferences induced by negating the minimal

unit. In contrast, the small quantity in the PPI function profiles a certain range from the bottom of a canonical scale to the marker 1. The quantity denoted by the PPI is not the minimal unit, but an indefinite amount with a loosely defined boundary.

(92) a. numeral one b. minimizer: NPI c. approximator: PPI



A small quantity is resized by different scales for different linguistic effects, such as emphatic and attenuative rhetorical force. The different scale settings are the crucial environment for each of the functions to develop. The different requirements for a scale also make the NPI and PPI functions complementarily distributed.

However, the similarity in meaning and form is still a possible source of ambiguity. In the layering of extant and newly developed functions, there is a tendency to make maximal distinctions between each of them in the diachronic process. Each of the functions was prone to be combined with a specific construction which could make the characteristics of the function in question more prominent. For instance, the differences regarding quantity was reflected in the occurrence of diminutive markers attached to the unit word. When the fixed 'one'-phrase emphasized the smallness of the quantity, it was more likely to have a diminutive marker, as discussed earlier in Section 3.4.1.1. In addition to the primary distinction between negative and non-negative, the differences in word order helped to create more differences between the PPI and the NPI functions. The emphatic NPI tended to appear in the OV order to be in focus, while the attenuating PPI stayed in the VO order to avoid focal prominence. Those NPIs that stayed in the VO order exhibited the tendency to combine with a degree modification construction. These tendencies of constructional combination served to further distinguish the PPI and the NPI functions. The maximization of differences emerged not only in the nominal PPI and NPI, but also in the adverbial PPI and NPI. The adverbial PPI belongs to the postverbal type, whereas the adverbial NPI is of the preverbal type. Their connection with either the postverbal type or the preverbal type of adverbials arose from different motivations. As discussed in Section 3.4.2.3, the adverbial PPI appearing postverbally serves to evaluate the quantity of an event, while the NPI occurs preverbally for the appropriate scope relation. These tendencies to be associated with particular constructions are summarized in Table 3.3.

Table 3.3: Summary of ways to achieve distinctions of the fixed 'one'-phrase

Dimension	Strategy	distinction
Quantity	addition of diminutive markers	NEUTRAL QUANTITY: no marker SMALLER/ MINIMAL QUANTITY: tends to have diminutive markers attached to the unit word
Nominal PPI/ NPI	word order; degree modifiers	PPI: all in the VO order NPI: preference of being in the OV order NPI IN THE VO ORDER: tends to appear with degree modification
Adverbial PPI/NPI	adverbial-predicate order	ADVERBIAL NPI: preverbal ADVERBIAL PPI: postverbal

In this section, I have shown the model for the development of a polysemous syntactic construal. A newly developed function can be viewed as a new association of the construal to an already extant construction. The grammaticalization can be conceptualized as the construal in question further linking to a higher-level construction, which is also more schematic. In this process, similarities of form and meaning are the key to determining the association of constructions. They reflect the directionality of a polysemous development. Apart from similarities, differences among constructions are another force driving change. The different senses of a polysemous construal need to gain maximal distinction. There is a tendency to maximize their differences by association with constructions which can reinforce their individual features. Similarities and differences work together to create a polysemous network diachronically. Grammaticalization is the process of forming links between a construal and various constructions. In Modern Mandarin Chinese, all the links between a numeral phrase and various constructions have remained. When the fixed 'one'-phrase is placed in a specific environment, the link to a certain construction is triggered. For example, when the fixed 'one'-phrase appears under the scope of negation, it must be interpreted through the MODIFICATION construction. The links are the source of the polysemy of the fixed 'one'-phrase in Modern Mandarin.

3.5.2 Directionality in productivity, schematicity, and compositionality

The directionality of changes in grammaticalization has been an important issue in diachronic studies. The directionality of the development of a Mandarin numeral phrase into a modifier phrase can be characterized by the changes in its productivity, schematicity, and compositionality. The three aspects will be discussed respectively to capture the path of development in Mandarin Chinese. Regarding productivity, work on the issue has been concerned with frequency (Bybee 2007, 2010). The increase of token frequency is equated with the increase of construct frequency (Traugott and Trousdale 2013). After a numeral phrase developed into a MODIFIER construction in Mandarin Chinese, a small number of 'one'-phrases also followed this route. For instance, 一絲 *yì sī* 'a shred'-NOUN and 一毫 *yì háo* 'a cent'-NOUN also have the preference toward negative polarity in Modern Mandarin Chinese, as shown in (93) and (94). Compared with their use in a counting phrase, their use as minimizer NPIs has a relatively loose selectional restriction on their following noun.

(93) 不抱一絲期望
bú bào [yì sī qíwàng]
neg hug one shred expectation
'did not have any expectation'

(94) 一毫福利也沒享受到
[yì háo fúlì] yě méi xiǎngshòu dào
one cent benefit YE NEG enjoy ASP
'did not enjoy even a bit of benefit'

The two 'one'-phrases are not canonical minimizer NPIs because they can still be found in non-negative environments. Despite this, their occurrences still show the expansion of types in terms of constructs to the inventory construction, QUANTIFIER construction. In contrast, the PPI function of a fixed 'one'-phrase does not recruit new members from other 'one'-phrases which inherently have a small quantity. The difference in productivity reflects the tendency that a numeral expression with an inherent small quantity is prone to be interpreted toward a smaller quantity instead of toward the opposite direction. This tendency makes a more salient distinction among numeral expressions with different sizes of quantity.

Schematicity is a property which characterizes abstraction in constructionist approaches. Constructions at different hierarchical levels have different degrees of schematicity (Goldberg 2006), as exemplified by the differences in (91). The concept of schematicity is coherent with the property of abstraction in grammaticalization. As in Langacker (2011), schematicity is identified with loss of contentful meaning. For example, schematicity can be observed in the case of the development of the fixed 'one'-phrase from a numeral phrase to a modifier. The unit word is decategorized because it is not a free noun with its original contentful meaning as a solid, small, black dot. In addition, it became more dependent on the numeral 'one'. As discussed in the development from a quantifier to a degree modifier in Section 3.5.1.2, *yi dian* 'one dot' was recruited into the MODIFICATION construction and thus was gradually assigned more prototypical features of the MODIFICATION construction. *Yi dian* 'one dot' became schematic as a quantifier and extended to a degree modifier which can expand to modify verbs and adjectives. Compared to *yi dian* 'one dot', other expressions such as *yì sī* 'a shred' and *yì háo* 'a cent', which were also recruited as quantifier expressions, are not as entrenched. The schematicity makes the construct, *yi dian* 'one dot', advance to a more schematic level of construction, such as the QUANTIFIER construction or the MODIFICATION construction, and the construction can expand to recruit more numeral expressions as members. However, asymmetry between the NPI and the PPI functions still exists. The schematic *yi dian* 'one dot' attracts other 'one'-phrases with reference to a small quantity to be minimizers but not PPIs. The asymmetry has to do with the tendency of conceptualizing a small quantity by associating it with the bottom end of a scale. It is less common for a small quantity to be used to refer to a certain quantity toward the other end of the scale.

Compositionality concerns the transparency of the link between form and meaning (Francis and Michaelis 2003, Goldberg 2006). A decrease in compositionality means a decrease in transparency of the alignment of the meaning component and the syntactic component. Notably, a decrease in compositionality is one of the characteristics of constructionalization, (Traugott and Trousdale 2013). When the fixed 'one'-phrase is used as a numeral phrase, *dian*

'dot' is a classifier imposing selectional restriction on the noun and the numeral is the cardinal 'one' for counting. If the fixed 'one'-phrase is used as a PPI or an NPI, the numeral and the unit word become a unit. *Yi dian* 'one dot' is both compositional and non-compositional in this case. It is compositional because the inherently indefinite *yi* 'one' still contributes its indefiniteness to the constructions and *dian* 'dot' passes up the property of smallness to the constructions. Meanwhile, it is also non-compositional because 'one' is not a canonical numeral on a counting scale and *dian* 'dot' loses its properties as a classifier since it does not characterize how its following noun is perceptualized. Specifically, the part of *yi dian* 'one dot' of the fixed 'one'-phrase is even treated as a cluster which functions as an existential quantifier in Zhang (2013). However, when the fixed 'one'-phrase is entrenched as a degree modifier, its components are realigned to the form of the MODIFICATION construction, [MODIFIER NOUN]. From this perspective, the newly developed construction is actually not non-compositional, but completely compositional. In the case of the development of the fixed 'one'-phrase, the reanalysis still makes a new construction analyzable. The phenomenon also reflects the fact that speakers tend to associate a new construction with extant constructions as a way of making generalizations. In brief, the issue of compositionality and non-compositionality in diachronic changes can be viewed as realignments of form and meaning.

Productivity, schematicity, and compositionality in terms of constructions can characterize the directionality of the development of the fixed 'one'-phrase. The asymmetry in the two opposite paths toward developing as an NPI or as a PPI implies the tendency that the concept of 'one' tends to evolve into a minimizer rather than into a quantifier away from the bottom end of a scale. It is consistent with the crosslinguistic tendency that expressions of a small quantity are the major inventory of NPIs.

3.6 Summary of the Internal Changes of the Fixed 'One'-phrase

The fixed 'one'-phrase in Mandarin Chinese covers a wide range of functions. This synchronic polysemy is in fact related to its diachronic development. After the major word order shift in Chinese, the numeral phrase came to have a binominal structure. The structure was prone to undergo reanalysis since the juxtaposed NPs had room for reinterpretation. The emergence of different functions is analyzed as the association of the string NUM-NP1-NP2 with different constructions. The associations were made based on the resemblance in form and meaning of the numeral phrase with particular constructions. The associations are well constrained and explain the motivations for different extensions of the numeral phrase. The grammaticalization of the numeral phrase is the process of building associations between the numeral phrase and the more schematic constructions. These associations contribute to the polysemy of the fixed 'one'-phrase in Modern Mandarin. When all the functions of the string NUM-NP1-NP2 are entrenched, each of the functions reveals a tendency to combine with a particular construction to reinforce its idiosyncrasy with the goal of maximizing differences. Assimilation and dissimilation are the two forces driving the diachronic development.

The versatility of the 'one'-phrase is not limited to Mandarin Chinese; crosslinguistically, a 'one' phrase is likely to develop multiple extended meanings, particularly as a minimizer. This is because the *one* unit can be flexibly shaped into different sizes when it is placed on different scales. The issue will be discussed in Chapter 5, which offers a crosslinguistic comparison.

Chapter 4

The Emergence of Scalar Particles DOU and YE in OV order in Mandarin Chinese

In Modern Mandarin Chinese, when the 'one'-phrases as minimizers serve as the object in OV order, the vast majority of them occur with a focus-sensitive scalar particle[1], as shown in (1) and (2)[2]. DOU and YE are responsible for a different range of meanings, but they intersect in the scalar interpretation, as observed by Hole (2004) and Zhang (2000). Particularly, when they appear with the 'one'-phrases as minimizers, they are claimed to be interchangeable. DOU and YE are often regarded as the translation equivalents of English *even* in the literature (Badan 2008, Hole, 2004, Szabolcsi et. al 2014, Tsai 2004a).

(1) 股票至今一張都沒賣 [from *Chinese Gigaword*]

gǔpiào	zhì	jīn	[yì	zhāng]	**dōu**	méi	mài
stock	till	now	one	CLF	DOU	NEG	sell

'Till now not even one share has been sold.'

(2) 幾口井一滴水也不出 [from *Chinese Gigaword*]

jǐ	kǒu	jǐng	[yì	dī	shuǐ]	**yě**	bù	chū
several	CLF	well	one	drop	water	YE	NEG	emerge

'Not even a drop of water emerges from these several wells.

The addition of the scalar particles to OV order is a later development because OV order is found to be used in Old Chinese but the involvement of these particles only began in Early Mandarin Chinese, as discussed in Chapter 2. The Mandarin Chinese combination of 'one'-phrases as minimizers with a scalar particle is not unusual crosslinguistically; similar phenomena can be observed in several numeral classifier languages, such as Japanese, Korean, and Malay. In these languages, minimizers are mainly formed by 'one'-phrases, ['one'-CL, N] (Lee 2003, Nakanishi 2006, and Mustafa 2006). When the 'one'-phrases are used as minimizer NPIs, they are necessarily accompanied by a scalar particle, as shown in (3)-(5), where the particles are in bold face. Although these particles are given different labels in the literature, they behave similarly. These particles are claimed to have a scalar "even" reading when attaching to an NPI, but otherwise they serve as additive particles (cf. English *too, also*) (Lee 2003, Nakanishi 2006, and Mustafa 2006).

[1] According to the data from *Chinese Gigaword*, there remain some cases where scalar particles do not appear with the 'one'-phrases in OV order in Modern Mandarin. These are fixed expressions or idioms, which can be viewed as vestiges from earlier stages.

[2] In this chapter, the Modern Mandarin data are collected from *Chinese Gigaword*. The data of Old Chinese, Middle Chinese, and Early Mandarin Chinese are from the *Academia Sinica Ancient Chinese Corpus* (ASACC).

(3) Japanese
Taro-wa kooen-de neko-o [ip-piki-**mo**] mi-na-katta
Taro-TOP park-at cat-ACC one-CLF-MO see-NEG-PST
'Taro did not see any cat in the park.'

(4) Korean
[han saram-**to**] an w-ass-ta
one person-TO NEG come-PST-DECL
'Not even one person came.'

(5) Malay (data from Mustafa 2006: 78)
dia tidak tidur [se-minit **pun]** sejak semalam
he NEG sleep one-minute PUN since last night
'He has not slept a minute since last night.'/ 'He didn't sleep at all.

Interestingly, YE in Modern Mandarin also has this dual function. It is an additive particle, but it turns into a scalar particle when it occurs in negative setting with a minimizer NPI. The same phenomenon occurring across different languages shows the specific connection between this particular type of particle and minimizers.

However, the 'one'-phrases as minimizers in Mandarin Chinese are different from those in other numeral classifier languages regarding the requirement of a scalar particle. When Mandarin 'one'-phrases are used as minimizers in the focal postverbal position, they do not need a scalar particle. They require a scalar particle only when they appear in the preverbal object position. Since the involvement of YE in OV order is a later occurrence in Mandarin Chinese, a diachronic study can help to explain its connection with minimizer NPIs and OV order. In this chapter, I will discuss how YE has developed as a focus-sensitive particle from the extant constructions which are scalar in nature, and how 'one'-phrases as minimizers have shaped YE into a scalar particle.

The other particle, DOU, has multiple functions including that of a universal quantifier, an emphatic marker, and a distributive operator (Hole 2004, Huang 1996, Szabolcsi et. al 2014). It patterns very similar to YE in the function as a scalar focus. Similar to YE, the scalar function of DOU has developed from Mandarin OV word order and has a close relationship with the 'one'-phrases as minimizers. In this chapter, I will discuss the similarities of DOU and YE regarding syntactic and semantic properties. The resemblance makes the two particles behave alike in terms of scalar particles. YE as an additive particle can implicate scalar reading, while DOU as an additive particle can implicate an additive reading. Yet, despite their given similarity, the two particles are not fully interchangeable in the scalar interpretation. I will adopt a constructional approach to show how they contribute differently to the scalar construction.

In the following sections, I will first introduce how DOU and YE behave in Modern Mandarin and offer a comparison between them in Section 4.1. In Section 4.2, OV order will be revisited since it is the environment where 'one'-phrases as minimizers require the presence of a scalar particle. Section 4.3 will discuss the issue of how DOU and YE have received the scalar sense from the construction where 'one'-phrases as minimizers occur. Section 4.4 briefly summarizes the development of DOU and YE as scalar particles.

4.1 Differences and Similarities of DOU and YE in Modern Mandarin

DOU and YE both have multiple functions, and they overlap in the function of evoking scalar inferences. DOU has attracted considerable attention in Chinese linguistics (Badan 2008, Hole, 2004, Lin 1996, Szabolcsi et. al 2014, Tsai 2004a). YE, in contrast, has not received as much attention. Although DOU and YE differ greatly in the range of functions they cover, they are interchangeable in some specific environments. I will first introduce their semantic and syntactic properties in Modern Mandarin before I move onto their interchangeability.

4.1.1 DOU as a multi-functional quantifier

DOU is responsible for multiple functions in Modern Mandarin, serving as a universal quantifier, a distributive operator, and a scalar particle. Due to its versatility, DOU has been given different labels in the literature, such as sum operator (Huang 1996), generalized distributor (Lin 1998), and maximal operator (Giannakidou and Cheng 2006, Xiang 2008). In this section, I will introduce the basic functions of DOU and how different analyses reflect the important characteristics of DOU.

4.1.1.1 Distributivity of DOU

The distributive function of DOU is the most discussed one. It denotes distribution of a predicate over its preceding plural noun phrase in the same clause (Huang 1996, Lee 1986, Liu 1990, Lin 1998, Xiang 2008). Since the predication is true of every atomic individual of the plural noun that the distributive operator interacts with, DOU is viewed to be equivalent to English *all*, *every*, and *each* (Hole 2004). As shown in (6), the presence of DOU distributes over the plural subject argument. The contrast of (6) and (7) shows that a collective reading is unavailable in a DOU sentence.

(6) 他們都吃了一個香蕉蛋糕

tāmen	**dōu**	chī	le	yí	ge	xiāngjiāo	dàngāo
they	DOU	eat	ASP	one	CLF	banana	cake

'Each of them ate a banana cake.'

(7) 他們吃了一個香蕉蛋糕

tāmen	chī	le	yí	ge	xiāngjiāo	dàngāo
they	eat	ASP	one	CLF	banana	cake

'Each of them ate a banana cake./ They as a group ate a banana cake.'

However, DOU does not have to distribute down to atomic individuals. Departing from English *each*, which is a strict distributor distributing down to atomic members, DOU can pick up pairs and distribute over these pairs (Lin 1998). As shown in (8), DOU is compatible with a collective predicate.

(8) 那些人都是夫妻 [Lin 1998: 227]

nàxiē	rén	dōu	shì	fūqī
those	person	DOU	be	husband-and-wife

'Those people are all couples.'

The distributive function can also be observed in a singular noun phrase, as in (9). Although only a single book is involved, the subparts of the book can be distributed.

(9) 那本書，我都看完了。[Lin 1998: 202]
nà běn shū, wǒ dōu kàn wán le
that CLF book I DOU read finish ASP
'I finished reading (all parts of) that book.'

To capture the distributivity of DOU, Huang (1996) proposes that DOU is a sum operator on events, as quoted in (10) (Huang 1996: 72).

(10) DOU(e, PRED) = ∪{ ePRED1, ePRED2, ... ePREDn }, and DOU(e, PRED) is true iff e is an event of minimum size consistent with the semantics of PRED.

The events of minimal size are defined as events that involve a minimal number of arguments required by the predicate. For instance, *walk* requires only one member of its argument, but a collective predicate as in (8) needs two arguments. Some events such as *buying a house* require at least an agent, but they are not limited to one, as shown in (11). This analysis captures DOU's sensitivity to the lexical semantics of the predicate. However, Xiang (2008) points out that the analysis may overgeneralize by predicting that DOU always asserts that the maximal plural event is true. For example, DOU as a sum operator predicts the first reading of (11), but it fails to account for the second reading, in which potentially some people jointly buy a house and each of the rest of them buys a house.

(11) 他們都買了房子 [Xiang 2008: 232]
tāmen dōu mǎi le fángzi
they DOU buy PRF house
'a. They each bought a house/ houses. b. They bought houses.'

The two specific properties of DOU, the vague distributive reading and the dependence of predicate, can be accounted for by analyzing it as a generalized distributor (Lin 1998). A generalized distributor does not operate on the atomic individuals, but operates on the members of the cover set instead. A cover is a set of sets. The value of a cover is determined by contextual factors (Schwarzschild 1996, Lin 1998). For example, if a set has three members, it can be partitioned into smaller sets in several ways. Some of the possibilities are shown in (12).

(12) Cover 1: {A, B, C}
Cover 2: {{A, B}, C}
Cover 3: {{A}, {B, C}}

However, this analysis makes the prediction that DOU can accommodate a single-cover or collective reading, which is not true in Mandarin, as claimed by Xiang (2008). As shown earlier in (6), a collective reading is not allowed in a DOU-sentence.

Xiang's (2008) analysis of the distributive DOU emphasizes its maximality. For example, (6) can only be true when each of them ate a banana cake. The maximal operator DOU operates at the level of a set of covers and returns an output of a maximal plural individual consisting of all the covers. In other words, the single-cover or collective reading is ruled out.

Each of the different analyses of DOU focuses on a different property. When they are put together, they bring out an integral description of DOU. The special semantics of its distributive function comes from its properties of maximality and exhaustivity.

4.1.1.2 Universal quantifier DOU

DOU can form a universal quantifier with indeterminate pronouns as well as with *which*-phrases (Szabolcsi et. al 2014), as shown in (13) and (14).

(13) 他哪個學生都喜歡

tā	nǎ	ge	xuéshēng	dōu	xǐhuān
he	which	CLF	student	DOU	like

'He likes every student.'

(14) 他哪兒都去過

tā	nǎr	dōu	qù	guò
he	where	DOU	go	EXP

'He has been everywhere.'

Giannakidou and Cheng (2006) notice that Mandarin has definite and indefinite Free Choice Items (FCIs). The definiteness distinction is determined by the presence or absence of DOU, as shown in the contrast of (15) and (16). Example (15) can be interpreted as 'he does not want to buy any particular book', but (16) can only be interpreted as 'there is absolutely no book whatsoever (from a contextually determined set) that he wants to buy'. Each member of this contextually determined set is exhausted.

(15) 他不想買哪本書

tā	bù	xiǎng	mǎi	nǎ	běn	shū
he	NEG	want	buy	which	CLF	book

'He doesn't want to buy any book (in particular).'

(16) 他哪本書都不想買

tā	nǎ	běn	shū	**dōu**	bù	xiǎng	mǎi
he	which	CLF	book	all	NEG	want	buy

'He doesn't want to buy any book at all.'

The above set of data seems to suggest that *dou* contributes specific and exhaustiveness to FCIs. Cheng and Giannakidou (2013) claim that DOU functions as a maximal operator, operating on an intensionalized domain. This use of DOU reflects its two salient properties: maximality and exhaustivity and these two properties of DOU are crucial in its development toward a scalar particle.

4.1.1.3 The relation between DOU and the scalar function

DOU has been claimed to contribute to an "even"-reading in Mandarin Chinese (Badan 2008, Hole 2004, Xiang 2008). Its "even"-reading has been observed in different syntactic constructions, without a unified term for them. Its function has been labeled differently, such as scalar particle and emphatic marker. Even so, the labels reflect two features closely related to

'one'-phrases as minimizers: scalarity and focal prominence, as already shown in (1). I will briefly summarize the types of syntactic construals where the scalar function of DOU has been found in past studies.

Building upon the relationship between DOU as a maximal operator and FCIs, Cheng and Giannakidou (2013) further suggest that the presence of DOU creates a stronger, more emphatic negative statement. This emphatic function can be illustrated by the contrast of (17) and (18) (from Cheng and Giannakidou 2013: 139). Example (17) is weak negative, whereas (18) is emphatic negative. (17) is used when there is no expected phone calls. It can be understood as: in the case that someone calls, just say that I'm not here. In contrast, (18) implies an expected call, so it is compatible with the existence of phone calls. It can be used when the phone is ringing. Cheng and Giannakidou (2013) claim that this DOU has a scalar component as English *even*, and it is likely that the emphatic effect is due to *even*.

(17) 如果(有)哪個人打電話來，就說我不在

rúguǒ	yǒu	nǎ	ge	rén	dǎdiànhuà	lái	jiù	shuō	wǒ	bú	zài
if	have	which	CLF	person	phone (v.)	come	then	say	I	NEG	be

'If anyone calls, just say that I'm not here.' [no specific referents]

(18) 無論哪個人打電話來，我都不在

wú-lùn	nǎ	ge	rén	dǎdiànhuà	lái	wǒ	dōu	bú	zài
no-matter	which	CLF	person	phone (v.)	come	I	all	NEG	be

'Whoever calls, I'm not here.' [in the event of expecting a phone call]

DOU therefore has been viewed to carry an emphatic function whether in its definiteness and exhaustivity (as in (16)) or its assertion of an existence (as in (18)).

In addition to the FCI construction, the scalarity of DOU can be found in a degree construction. For instance, DOU is not obligatory in (19), but its appearance adds a sense of maximal unexpectedness from the speaker's subjective viewpoint.

(19) 他氣得都哭了

tā	qì	de	**dōu**	kū	le
he	upset	EXT	DOU	cry	PRF

'He was so upset that he cried.'

Another scalar construction involving DOU is the famous LIAN…DOU construction in Chinese linguistics. *Lián* is generally glossed as 'even'. *Lián* is a later development than DOU or YE. It is noteworthy that *lián* cannot occur without DOU or YE. The LIAN…DOU construction is defined as a scalar construction in Mandarin Chinese (Badan 2008, Hole 2004, Huang 1996, Li and Thompson 1981, Tsai 2004a, Xiang 2008, among others). The two morphemes *lián* and DOU flank the NP to be emphasized, as shown in (20).

(20) 他很難過，連飯都不吃

tā	hěn	nánguò	**lián**	fàn	**dōu**	bù	chī
he	very	sad	even	meal	DOU	NEG	eat

'He is very sad, so he even doesn't eat.'

In most analyses, the scalar reading of the LIAN…DOU construction is claimed to come solely from *lián*. *Lián* is often analyzed as a focus marker (Paris 1998, Shyu 2004). It is similar to English *even*, which evokes a set of alternatives (Rooth 1985). As shown in Kay (2004), a scalar model consists in a presupposed set of interrelated propositions. DOU, the other morpheme of the construction, is claimed to play the role of a universal quantifier (Hole 2004), a sum operator (Huang 1996), a focus marker (N. Zhang 2000), or a maximal operator (Cheng and Giannakidou 2013, Xiang 2008). DOU interacts with the set of propositions in a scalar model. No consensus of the analysis of the LIAN…DOU construction has been reached so far, but it has been recognized as a scalar construction. Among the analyses, Xiang (2008) puts forward the analysis of DOU as a maximal operator to include maximality and exhaustivity in accounting for DOU's contribution to a scalar construction. She proposes that *lián* introduces a set of alternatives, and that DOU operates on the set and picks out the maximal degree of the likelihood degrees. For instance, when the most unexpected degree is true on a scale of unexpectedness, it entails that the other alternatives higher than the most unexpected degree are also true. In this case, all the alternatives are exhausted to induce a scalar reading.

However, in some cases, DOU alone without *lián* can still have a scalar reading, as in (21). If 'this book' is stressed, the sentence yields an *even*-reading. In previous studies, a covert LIAN is posited to account for the scalar reading of the construction where DOU is involved (Badan 2008, Xiang 2008). In other words, DOU is treated as a short version of LIAN…DOU. However, the scalar function of DOU developed earlier than the occurrence of *lián*. This analysis attributes the scalar interpretation to *lián*, but does not further explain why DOU alone also has the scalar interpretation.

(21) 他這本書都看完了

tā	[**zhè**	**běn**	**shū]**	dōu	kànwán	le
he	this	CLF	book	DOU	read	PRF

'He finished reading even this book.'

So far I have introduced the different functions of DOU, and how they are treated in different analyses. However, the issue of how the scalar DOU has built its diachronic connections with the maximal or distributive operator DOU and the issue of in which environments the scalar interpretation has developed have barely been discussed. In Section 4.2, I will approach the relationship between DOU and its related scalar constructions from a diachronic perspective.

4.1.2 YE as an additive particle

As noted in Hole (2004), YE has not received sufficient attention in the literature. It is often treated as a variant of DOU in the LIAN…DOU construction (Badan 2008, Li and Thompson 1981, N. Zhang 2000). For example, both DOU and YE contribute to a scalar reading, as shown in (22).

(22) 他連星期日也/都上班

tā	lián	xīngqírì	yě/dōu	shàngbān
he	even	Sunday	YE/DOU	work

'He even works on Sundays.'

However, YE is not simply a variant of DOU. It is different from DOU in several aspects. In this section, I will introduce the basic functions of YE in Modern Mandarin.

YE is often glossed in English as 'also'. It can apply to the subject (Li and Thompson 1981), as in (23). The morpheme has to immediately precede the main verb.

(23) 他買了這本書，我也買了。

tā	mǎi	le	zhè	běn	shū，	wǒ	**yě**	mǎi	le。
he	buy	PRF	this	CLF	book,	I	also	buy	PRF

'He bought this book, and I bought it, too.'

However, YE is not restricted to function upon the subject. Depending on the placement of the stress, it can be related to either the subject or the predicate. When the focus stress falls on the subject as in (24), it presupposes that someone else wants to read this book. If the VP receives the stress as in (25), then the sentence has the presupposition that *I* want to perform some other activities as well.

(24) 我也想看這本書

[wǒ]	**yě**	xiǎng	kàn	[zhè	běn	shū]
I	also	want	read	this	CLF	book

'I also want to read this book.'

(25) 我也想看這本書

wǒ	**yě**	xiǎng	[kàn	zhè	běn	shū]
I	also	want	read	this	CLF	book

'I want to read also this book.'

If the object is associated with YE, the object has to be preposed to a preverbal focal position, as in (26).

(26) 我這本書也看完了

wǒ	[zhè	běn	shū]	**yě**	kàn	wán	le
I	this	CLF	book	also	read	finish	PRF

'I finished this book also.'

Similar to English *also*, the function of YE is sensitive to focus. It presupposes that there is at least one alternative in a context determinate set.

In addition, YE has an emphatic function. It can relate back to a *wh*-word or an indefinite pronominal (Hole 2004). As in (27), YE attaches to the focused preverbal object.

(27) 他誰也不想見

tā	[shéi]	**yě**	bù	xiǎng	jiàn
he	who	YE	NEG	want	see

'He doesn't want to see anybody at all.'

YE can characterize a downtoning force on the criticism toward the addressee as in (28), or express resignation and concession, as in (29).

(28) 也不能全怪我們

yě	bù	néng	quán	guài	women
YE	NEG	can	all	blame	us

'cannot put all the blame on us'

(29) 她的年紀也不小了，還不結婚

tāde	niánjì	**yě**	bù	xiǎo	le	hái	bù	jiéhūn
her	age	YE	NEG	small	PRT	still	NEG	marry

'She is not young anymore. Why does she still not want to get married?'

The functions of YE discussed so far show that YE and DOU differ in several ways. It is not sufficient to treat YE and DOU as simply variants when they appear in Mandarin scalar constructions. In the next section, their interchangeability and the constraints of the environments will be discussed.

4.1.3 Interchangeability of DOU and YE

Although YE and DOU are responsible for different meanings, they are found to be interchangeable in some specific environments. The most famous one is the LIAN…DOU/ YE construction, as in (30). The use of YE or DOU is claimed not to alter the *even* reading.

(30) 我連啤酒都/也不喝

wǒ	**lián**	píjiǔ	**dōu/yě**	bù	hē
I	even	beer	DOU/YE	NEG	drink

'I don't even drink BEER.'

The function of *lián* can be viewed as the key to making YE and DOU interchangeable. *Lián* is often analyzed as *even*, which has been briefly discussed in Section 4.1.1.3. The semantics of *even* has been a popular issue in linguistics (Horn 1969, Kay 1990, Krifka 1995). The analyses of Mandarin Chinese LIAN have been built upon this literature, regarding it as the equivalent of English *even*. For example, Tsai (2004) claims that the presupposition and assertion of *lián* are the same as those of English *even* proposed by Horn (1969). What is controversial is the issue regarding its syntactic position in *lián*-phrases. It has been treated as focus (Paris 1994) or topic (Tsao 1989, Liu and Xu 1998). However, the two labels are assigned based on different terminologies and actually refer to the same emphatic phenomenon (Hole 2004). As defined by Krifka (1995), the interpretation of *even*-foci is tied to the interpretation of emphatic assertions. The presence of *even* can make the semantic or pragmatic effect of emphatic assertions more explicit. In the Mandarin case in (30), it can be observed that there is an emphatic assertion expressing the fact that the subject does not drink beer. The presence of *lián* implies that the subject does not consume other kinds of alcohol either. The LIAN…DOU/ YE construction marks the flanked element as the most unlikely or the most unexpected one in a contextually determined set of alternatives.

Since LIAN is responsible for the *even* reading, why is DOU or YE obligatory in the construction? Previous studies have focused on DOU, leaving YE barely touched upon. Two opposing positions exist in dealing with this issue. One position equates the meaning of DOU with *even* (Alleton 1972, R. Zhang 2000), while the other proposes that DOU is not equivalent to *even*

(Hole 2004, Huang 1996, Mok and Rose 1997, Tsai 2004a, Xiang 2008). The position of the latter is that DOU has other contributions. For example, Hole (2004) proposes that the appearance of DOU is mandatory because it is a universal quantifier quantifying over the domain of alternatives for *lián* to make emphatic assertions. Emphatic assertions are semantically strong because it includes all the alternatives. The universal quantification of DOU can serve the purpose of concluding all the relevant alternatives. Xiang's (2008) analysis offers a similar insight. DOU as a maximality operator imposes maxmiality on the set of alternatives defined by the context. In other words, DOU guarantees exhaustivity of all the alternatives, and makes that scalar reading of *lián* explicit. These two analyses also comment on the barely discussed issue of the interchangeability of DOU and YE in LIAN…DOU/YE construction. The free alternation of the two morphemes comes from the fact that DOU entails YE. YE is also classified as an existential quantifier because it makes reference to at least one alternative over the domain of alternatives (Hole 2004).[3] It is therefore related to the universal quantifier DOU and entailed by it. Most studies focus on the alternation of DOU and YE, with little attention paid to their semantic differences in the scalar construction. Xiang (2008) further points out that LIAN…DOU is semantically stronger than LIAN…YE. I will discuss how they contribute differently to the scalar construction in Section 4.2. In sum, the analyses reveal that the scalar reading of *lián* is the key environment where DOU and YE can alternate.

However, there are some cases where DOU and YE are interchangeable without the occurrence of *lián*. One of them is the sentences containing 'one'-phrases as minimizers. As shown in (31), although *lián* does not appear, DOU and YE can still alternate with each other. Although it is acceptable to add *lián* to the position in front of the 'one'-phrase, it is totally fine to leave it out. Notably, the 'one'-phrases as minimizers carry focal stress regardless of the appearance of *lián* since minimizers inherently attract focal prominence.

(31) 我身上一塊錢也/都沒有

wǒ	shēn	shàng	[yí	kuài	qián]	yě/dōu	méi	yǒu
I	body	on	one	MW	money	YE/DOU	NEG	have

'I don't have even a dollar on me.'

It is noteworthy that DOU and YE can exchange only when 'one'-phrases as minimizers appear as an object preverbally. The preverbal object position in Modern Mandarin is claimed to be associated with focus. This connection suggests that the interchangeability has to do with focus, which will be discussed later in this chapter.

The relation between NPIs and the interchangeability of DOU and YE has been commented upon by Hole (2004). In his analysis, DOU and YE are obligatory because they are responsible for providing alternatives relevant to the denotation of the NPIs which designate a small quantity. If the smallest possible quantity is not involved, then it entails that no larger quantities are involved either. In the case of NPIs, a covert *lián* is still assumed to be involved in this environment. Hence, DOU is still used as a universal quantifier, and YE as an existential quantifier. However, the occurrence of DOU or YE is not always required in sentences involving NPIs in Mandarin Chinese. The 'one'-phrases as minimizers in OV order do not obligatorily need the support of *lián*, DOU, or YE to induce scalar inferences. The 'one'-phrases as minimizers in VO order do not

[3] Hole (2004) proposes that the focus semantics of DOU-sentences (∀) entail the focus semantics of YE-sentences (∃). The subalternate sentences display one-way entailments.

even appear with DOU or YE. The unexplained issue of why DOU and YE become sensitive to scalar constructions will be dealt with in Section 4.2.

Another environment which permits the interchangeability of DOU and YE is the preverbal object position with focus stress (Badan 2008). As in (32), if the preverbal object marked in the bracket carries the pitch accent, DOU or YE are claimed to have an *even* interpretation. The sentence has an *even*-reading even without the presence of *lián*. It presupposes that its ordinary denotation is an unlikely proposition to obtain in the focus-related set. From the speaker's viewpoint, 'beer' is the most acceptable alcohol compared with other options.

(32) 我啤酒都/也不喝了

wǒ	[PÍJIǓ]	**dōu/yě**	bù	hē	le
I	beer	DOU/YOU	NEG	drink	SENTENCE-FINAL PTC

'I don't' drink even BEER.'

Examples (31) and (32) both show that DOU and YE are associated with a scalar reading when they are related to focal prominence in particular. The relations of the particles DOU and YE to ascalarity, focus, and minimizers will be laid out in the next section.

4.2 A Diachronic Perspective on the Association of DOU and YE with Scalar Constructions

The discussion so far shows that each of DOU and YE has its own characteristics. However, the two particles both have sensitivity to scalar environments. The issue of why the two particles have developed to be related to an *even*-reading has rarely been discussed. In Section 4.1.3, I have shown that the scalar use of DOU and YE has a connection with focus, especially when they are related to a preverbal object. In Section 4.2.1, I will discuss the relation between OV order and focal prominence from a diachronic perspective.

DOU has received much attention in the studies of Mandarin *even* construction, while YE is often treated as simply a variant of DOU. However, the development of YE as a scalar particle occurred earlier than that of DOU. A close examination of the development of YE helps to explain why DOU came to be associated with scalarity. I will discuss how YE and DOU have developed in relation to OV order in Section 4.2.2.

4.2.1 The property of OV order from Old Chinese to Modern Mandarin

The preverbal object position in Modern Mandarin is claimed to be a focus position (Tsai 2004). It can be of various types such as contrastive, restrictive, and additive (N. Zhang 2000). The type of focus relevant to the discussion of the scalar particles DOU and YE is the additive focus. However, the development of the association between the preverbal object and the scalar reading has rarely been discussed. In this section, I will discuss how the additive focus has been associated with the preverbal object position and how negation and 'one'-phrases as minimizers contribute to the association. Before moving on to the minimizers in the preverbal position, I will first show that OV word order has been employed as a focus construction since Old Chinese although the focus particles involved have changed.

4.2.1.1 OV order as a grammatical category

Any discussion of Chinese OV order must involve its comparison with VO order. The issues regarding the basic word order in Old Chinese and word order change have been much debated, as discussed earlier in Chapter 2. To summarize, Li and Thompson (1974), LaPolla (1994), Feng (1996), Xu (2006) among others hypothesize that Old Chinese was an SOV language and subsequently changed to SVO, whereas Aldridge (2012), Djamouri (2005), Dijamouri and Paul (2009), Light (1979), Peyraube (1996), Sun and Givón (1985), and among others, argue that SVO has been the basic word order throughout the attested history of Chinese. For the former camp, sentences with OV order in Old Chinese are treated as vestiges of the canonical OV order in pre-Archaic Chinese. For the latter camp, the same set of sentences is argued to be evidence of OV order as the marked order. The argument against the hypothesis of OV order as the earlier basic word order comes from the fact that the preposing object was motivated for a purpose. In this chapter I take the position that VO was the basic order, whereas OV order had its functional motivations. Below I will present the types of constructions involving OV order to show that they form a grammatical category. Then I will go on to discuss how OV constructions differ from prototypical sentences in VO order.

In Old Chinese, when the object is a full lexical NP, the basic word order should be VO, as in (33), but a few cases still remain where a full NP is found in the preverbal position for contrastive purposes as in (34) (Peyraube 1997a).

(33) 君必失國 [*Zuo Chronicle*: Xiang 13 from Peyraube 1997a: 5]
jūn bì shī **guó**
prince certainly lose state
'The prince will certainly lose the state.'

(34) 王祭不共 [*Zuo Chronicle*: Xi 4 from Peyraube 1997a: 6]
wáng **jì** bú gòng
king offering-of-sacrifice NEG contribute
'(You) will not contribute to the king's offerings of sacrifice.'

However, the cases of preverbal full NPs are very marginal. The most recognized preverbal objects are pronouns (Feng 1996, Peyraube 1997a, Xu 2006). The two most discussed types of preverbal objects are *wh*-pronouns and pronominals in the context of negation. As shown in (35)-(36), the *wh*-pronouns had to appear in the preverbal position. *Wh*-phrases are viewed as focus constituents in Mandarin Chinese (Huang et. al 2009). A formal analysis proposed by Aldridge (2012) shows that *wh*-phrases move to the preverbal position for focus in Old Chinese. His insight supports the hypothesis that OV order places focus on the object. It shows that OV word order is unlike Mandarin canonical SVO-sentences, which have predicate focus (Chao 1968).

(35) 吾誰欺？欺天乎? [*Analects*]
wú shéi qī？ Qī tiān hū？
I who deceive deceive Heaven Q
'Who do I deceive? Should I deceive Heaven?'

(36) 公誰欲與？[*Zhuangzi*]
gōng shéi yù yǔ
you who want give
'Who do you want to give it to?'

OV order can also be observed in the environments where pronominal objects occur under the scope of negation. As in (37)-(38), the pronominal objects appear in the position between the negator and the verb. The phenomenon has been attributed to different reasons, such as for prosody (Feng 1996) and for pronominal objects to obtain accusative case (Aldridge 2015).

(37) 不吾知也 [*Analects*]
bù **wú** zhī yě
NEG I understand SENTENCE-FINAL PTC
'(You) don't understand me.'

(38) 未之聞也 [*Zuo Chronicle*]
wèi **zhī** wén yě
NEG 3.SG.OBJ hear sentence final-PARTICLE
'(I) haven't heard of it yet.'

However, it is somewhat difficult to treat negative environments as the rule for preposing pronominal objects because there are also many exceptions found throughout the period of Old Chinese (Peyraube 1997a), as in (39) and (40).

(39) 吾不知之矣 [*Analects* from Peyraube 1997a: 9]
wú bù zhī **zhī** yǐ
I NEG understand 3.SG.OBJ SENTENCE-FINAL PTC
'I don't understand him (or this kind of man).'

(40) 有事而不告我[*Zuo Chronicle* from Peyraube 1997a: 10]
yǒu shì ér bú gào **wǒ**
have affair CONJ NEG tell me
'(He) had trouble and did not tell me.'

Therefore, the choice of word order for pronominal objects is more likely due to focal prominence. As suggested by Djamouri (2000), in Old Chinese, in the NEG-O-V order the focus is on the preverbal object, while the focus is on negation in the NEG-V-O order.

The cases discussed so far concern the pronominal objects. The occurrence of pronominal objects in the preverbal position has been treated as an important characteristic of Old Chinese. Nevertheless, the preverbal object position is not restricted to accommodating only pronouns. It also allows full NPs when preverbal markers are involved. The preverbal full NPs normally occur with a marker. These markers are diverse, but 是 *shì* is the most frequent one after the process of lexical unification (Peyraube 1997a). As shown in (41) and (42), the marker is used to indicate that the object appears in OV order, not in basic VO order.

(41) 四方是維 [*Odes*: Xiao ya from Peyraube 1997a: 11]
sì fāng **shì** wéi
four region PREVERBAL MARKER unite
'(You should) unite THE FOUR REGIONS.'

(42) 固敗是求 [*Zuo Chronicle*: Xi from Peyraube 1997a: 11]
gù bài **shì** qiú
naturally defeat PREVERBAL MARKER ask for
'Naturally, (one) asks for DEFEAT.'

The marker 是 *shì* is labeled as a preverbal marker by Peyraube (1997a). Its function is claimed to stress its preceding noun. Pulleyblank (1960) has a similar insight in the analysis that 是 *shì* recapitulates the object of a verb which has been shifted to the front due to emphasis or contrast. Their analyses of 是 *shì* both support that OV order places focal prominence on the object instead of the predicate.

Another context involving OV order is the use of 以 *yǐ*. 以 *yǐ* functions like an instrumental marker. It is treated as a light verb (Aldridge 2012) or a preposition/postposition (Peyraube 1997a). The contrast of (44) and (45) shows that 以 *yǐ* can follow or precede an NP. The majority of *yǐ*-phrases appear preverbally.

(43) 故以羊易之 [*Mencius*]
gù **yǐ** yang yì zhī
thus YI sheep change it
'Thus (I) exchange it for a sheep'

(44) 旃以招大夫 [*Zuo Chronicle* from Peyraube 1997a: 14]
zhān **yǐ** zhāo dàifū
flag YI call senior-official
'Call a senior with a flag.'

An interesting phenomenon observed by Aldridge (2012) is that the use of NP-YI seldom appears in an independent clause. The cases of NP-YI are normally found in parallel clauses as in (45). A contrastive reading can be found in the two NPs preceding 以 *yǐ*. The phenomenon shows that OV order has the connection with a contrastive focus.

(45) 弓以招士，皮冠以招虞人 [*Zuo Chronicle* from Aldridge 2012: 11]
gong **yǐ** zhāo shì pí guān **yǐ** zhāo yúrén
bow YI call gentleman leather cap YI call gamekeeper
'(He) summoned gentlemen by use of a bow, and the gamekeeper by use of a leather cap.'

In addition, the types of NPs which frequently appear in the preverbal position with 以 *yǐ* are *wh*-pronouns and the demonstrative pronoun 是 *shì*, as shown in (46) and (47) respectively.

(46) A: 何以事君？ B: 吾以事君也 [*Zuo Chronicle* from Aldridge 2012: 14]

A: **hé** yǐ shì jūn？ B: wú yǐ shì jūn yě
what YI serve lord I YI serve lord SENTENCE-FINAL PTC
A: 'With what do you serve the lord?' B: 'It is with myself that I serve the lord.'

(47) 是以政平 [*Zuo Chronicle* from Peyraube 1997a: 14]

shì yǐ zhèng píng
this YI politics peace
'With this, the politics will pacify (the State)'

Wh-pronouns are regarded as focused constituents, and the demonstrative pronoun 是 *shì* is claimed to have a stress function on its referent (Peyraube 1997a). Importantly, the two types of NPs with 以 *yǐ* are found only in OV order. Their occurrence indicates the semantic difference between OV order and VO order in Old Chinese, and demonstrates the focal prominence of the preverbal position.

OV word order is found in a variety of linguistic constructions in Old Chinese, including *wh*-questions, negative context with a pronominal object, clauses involving preverbal marker 是 *shì*, and clauses with the marker 以 *yǐ*. The set of constructions that exhibit OV order naturally form a coherent functional category. Semantic or pragmatic generalizations can be found among them, such as contrast and emphasis, as noted in past studies.

The sentences in OV order deviate from the prototypical VO sentences in several respects. The prototypical sentences have a typical predicate-focus information structure (Chao 1968), while the sentences with OV order have a narrow focus on the object argument. In addition, the prototypical sentences do not need additional markers, whereas many of the OV constructions require a marker between the verb and the object. Also, prototypical sentences are independent clauses, but some of the constructions involving OV order tend to appear in parallel clauses for contrast. The constructions that are in OV order overlap in a subset of attributes. Hence they form a functionally motivated category.

No OV construction has all the attributes from the central core of this grammatical category. However, the subsets of attributes which are from the central case can be instantiated in each of the conventionalized extensions (Goldberg 2006), as shown in Figure 4.1.

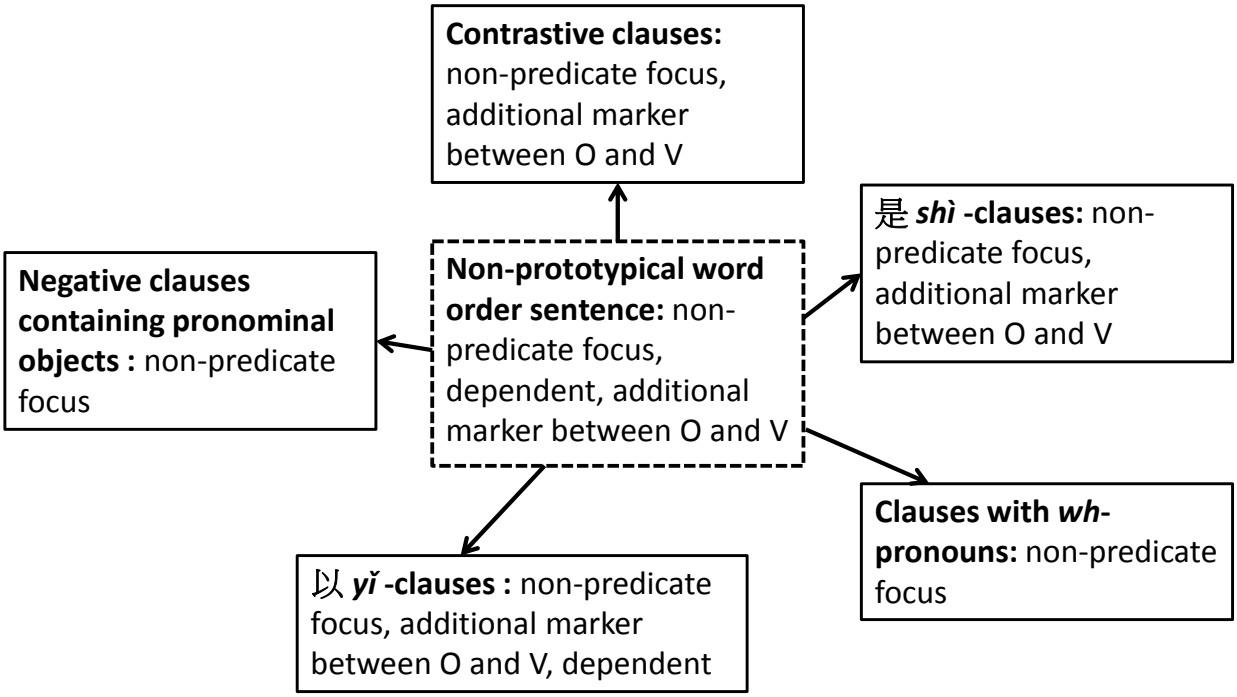


Figure 4.1: Grammatical category of OV constructions in Old Chinese

The dominant feature of OV construction is the lack of predicate focus. Each of the extensions is motivated from this feature. The involvement of OV in different clauses has functional motivations which can unify these idiosyncratic grammatical presentations. The OV constructions all serve the purpose of placing the object in focal prominence and making the information structure different from that of the prototypical SVO sentences.

With the exception of the contrastive clauses, the OV constructions in Old Chinese discussed so far gradually ceased to be used around the early stage of Middle Chinese (Wei 2000). Some of them even disappeared even earlier (Peyraube 1997a). Their discontinuation is taken as an important indicator of the transition from Old Chinese to Middle Chinese (Wei 2003). Even though this set of constructions did not continue into Modern Mandarin, the central core of the OV construction has remained unchanged. OV order remains in use in Middle Chinese, Early Mandarin, and Modern Mandarin to indicate a variety of purposes by profiling the object argument. The central core of the OV category is still instantiated in different conventionalized extensions at later stages of Chinese. For example, a wide array of particles, such as 連 *lián* 'even', the scalar particle 都 *dōu*, the additive particle 也 *yě* 'also', 只 *zhǐ* 'only', and 甚至 *shènzhì* 'even', started to appear in the OV constructions to indicate different types of focus in the preverbal object position in Early Mandarin. In Modern Mandarin, the occurrence of these markers has become obligatory.

In sum, the core characteristics of the OV constructions have not changed throughout the documented history of Chinese. The members of the grammatical category are coherently functionally motivated. Although the core remains unchanged, the instantiations have changed. The discontinuation of old OV constructions results in the recruitment of new ones due to the need for creating maximal distinction among related meanings of a polysemous form in the development of Chinese.

4.2.1.2 The OV construction involving 'one'-phrases as minimizers: a scalar construction

Another OV construction which has barely received attention is the one with 'one'-phrases as minimizers in the preverbal position. It is worth noting that when 'one'-phrases as the preverbal object appear with negation, they must be interpreted as minimizers, which means scalar inferences are guaranteed. The specific connection between 'one'-phrases as minimizers and OV order has been discussed in Chapter 2. In brief, 'one'-phrases as minimizers gradually showed a tendency to occur in the preverbal object position during the time period from Old Chinese to Modern Mandarin. The preverbal minimizers were not productive in Old Chinese. There are only 3 tokens of the OV construction involving 'one'-phrases as minimizers found in the *Corpus of Tagged Old Chinese*. An example of this type is repeated in (48). Although there is only a small number of tokens found in Old Chinese, they deliver an important message: when a 'one'-phrase appears in OV order under negation, it cannot be interpreted as a typical numeral phrase for counting or measuring purposes.

(48) 一毛不拔 [from *ASACC*]
[yì máo] bù bá
one fur NEG pluck
'not willing to pluck one hair' (very stingy, not willing to contribute)

The frequency of 'one'-phrase-NEG-V increased from Old Chinese through Middle Chinese to Early Mandarin, and it unequivocally conveyed a scalar reading. For ease of reference, the term *preverbal minimizer construction* is used to label the combination of a small quantity-NEG-V. Some OV constructions in Old Chinese discontinued around Middle Chinese, but the preverbal minimizer construction has always remained in use. The quantity-denoting expression of the preverbal minimizer construction is not restricted to 'one'-phrases. It has expanded to accommodate various expressions of small quantity. In Early Mandarin Chinese, a number of expressions denoting smallness of quantity appeared in the preverbal minimizer construction. As shown in (49), the phrase 絲毫 *sī háo* 'shred or hair' referring to a petty amount appears as the preverbal object. The phrase has become a fixed expression serving as a minimizer NPI. Another frequently occurring expression is the 半 *bàn* 'half'-phrase. 半 *bàn* 'half' is defined as a quantifier in Zhang (2013), but it must be followed by a unit word. 半 *bàn* 'half'-phrases behave like other typical numeral phrases referring to a precise quantity. However, when it appears in the preverbal minimizer construction, it is not used to refer to an exact quantity. As shown in (50), the *bàn* 'half'-phrase serves as a minimizer NPI to induce scalar inferences.

(49) 絲毫不剩[from *ASACC*]
[sī háo] bú shèng
shred hair NEG be left
'not even a shred or a hair left / nothing left'

(50) 這些飢民若不設法救濟，必定半個不存 [from *ASACC*]

zhèxiē	jī	mín	ruò	bú	shèfǎ	jiùjì
these	starving	people	if	NEG	try	relieve
bìdìng	[bàn	ge]	bù	cún		
certainly	half	CLF	NEG	exist		

'If (we) don't try to save these starving people, certainly none of them can survive.'

So far, the minimizers of the preverbal minimizer construction all involve a measure phrase. In Early Mandarin Chinese, the types of minimizers started to include non-quantity expressions, as shown in (51). 飯 *fàn* 'meal' and 茶 *chá* 'tea' are irrelevant to quantity but they are associated with the minimal requirement of sustaining life. The conventional set of alternatives is not made up of larger quantities of 'meal' and 'tea', but rather of representatives of the general class of daily activities. The failure of conducting the most basic activities entails that the subject does not do other alternatives of the set of daily activities either. Scalar inferences still arise even though the preverbal objects are not numeral phrases.

(51) 飯不吃，茶也不吃[from *ASACC*]

[fàn]	bù	chī，	[chá]	yě	bù	chī
meal	NEG	eat	tea	also	NEG	eat

'does not even eat nor drink'

The examples show that scalar inferences from the occurrence of 'one'-phrases in the OV construction with negation have become the fixed meaning of the preverbal minimizer combination. The types of nouns that can occur in the preverbal object position started from 'one'-phrases and then extended to diverse expressions of small quantities. The occurrence of non-quantity expressions in the construction is a later development. The host-class expansion shows the increase in type-frequency of the preverbal minimizer construction from Old Chinese to Early Mandarin. The preverbal minimizer construction can be viewed as a member of the OV grammatical category in Chinese, which is discussed in Section 4.2.1.1. What the OV constructions have in common is bringing focal prominence to the object argument. In a similar vein, the preverbal minimizer construction profiles the preverbal object. When expressions of a small quantity under negation are in focus, they become an indicator referring to the bottom of a scale and give rise to scalar inferences.

After introducing how 'one'-phrases contribute to the development of the preverbal minimizer construction, the next section will discuss how DOU and YE became associated with the construction and what kind of role the 'one'-phrases as minimizers play in the development of DOU and YE as scalar particles.

4.2.2 The emergence of DOU and YE in OV order

The two particles DOU and YE were not associated with the OV construction in the beginning. According to the data from the *Academia Sinica Ancient Chinese Corpus*, no cases of DOU and YE in the OV construction are found in the period of Old Chinese. At the time, the character 也 YE already existed but it was used as a sentence-final particle, whose function was unrelated to the additive function of 也 YE (Hole 2004). Since 也 YE was used as a sentence-final

particle, no examples of 也 YE in the OV construction are found. In the data from Middle Chinese, 也 YE is still found only in the use of a sentence-final particle. This means 也 YE was not recruited as an additive particle yet. In Old Chinese and Middle Chinese, the additive function of 也 YE in Modern Chinese is covered by 亦 *yì*. An analysis of how 亦 *yì* behaved can shed light on the syntactic and semantic properties of Chinese additive particles. In Old Chinese, the additive particle 亦 *yì* precedes the main verb in SVO order, as shown in (52). In this example, the additive particle targets the subject.

(52) 先君好酒，王亦好酒[from *ASACC*]
xiān jūn hào jiǔ， wáng **yì** hào jiǔ
previous lord love liquor king also love liquor
'The previous lord loved drinking. King also loves drinking.'

If the additive particle targets an object argument, the object must appear in the preverbal position, as shown in (53).

(53) 醫亦不誅[from *ASACC*]
yī **yì** bù zhū
doctor also NEG kill
'did not kill also the doctors'

The generalization is that the additive particle had to immediately follow its associated constituent. Although the words employed for the additive function may vary across periods of Chinese, the syntactic position of the additive particle has remained unchanged. This will be discussed in Section 4.2.2.1.

The other particle concerned here, 都 DOU, was also not found with a distributive function, a universal quantification function, or a scalar function in the data of Old Chinese. In Old Chinese, the word 皆 *jiē*, which is glossed as English *all*, served as a universal quantifier. If it distributes over a plural subject, it has to precede the main verb, as shown in (54). If it operates on the object argument, then the object has to appear in the preverbal position. As shown in (55), OV order is involved.

(54) 諸侯皆叛[from *ASACC*]
[zhūhóu] **jiē** pàn
vassal all revolt
'The vassals all revolted.'

(55) 四者皆棄[from *ASACC*]
[sì zhě] **jiē** qì
four NOM all abandon
'The four items are all abandoned.'

A comparison of the additive particle and the universal quantifier in Old Chinese shows that they behaved alike syntactically. When they are related to the subject, they occur in the SVO word order. If an object argument is associated with them, the OV construction must appear.

Crucially, although the particles were superseded at a later stage of Chinese, the syntactic constraints have remained unchanged.

The distributive DOU made its first occurrence in Middle Chinese. As shown in (56), the distributive DOU appears in VO order. However, tokens of DOU involved in OV order are not found at that time.

(56) 向使三賢都不曉畫[from *ASACC*]

xiàngshǐ	sān	xián	dōu	bù	xiǎo	huà
suppose	three	virtuous	DOU	NEG	know	painting

'suppose that the three virtuous people do not know painting'

According to corpus data, it was in Early Mandarin Chinese that DOU and YE began to occur in the OV construction. The discussion below will begin with YE and continue to DOU.

4.2.2.1 Involvement of YE in OV order in Early Mandarin Chinese

I will present an overview of the distribution of YE in multiple functions before moving on to its occurrence in the OV construction. The overview of YE in Early Mandarin Chinese is based on a random 5,000-token sample out of a total of 148,829 tokens from the *Tagged Corpus of Early Mandarin Chinese*.

The character 也 YE in Early Mandarin functioned as an additive particle (cf. English *also*), a scalar particle (cf. English *even*), a sentence connector, and a concessive marker, in addition to being a clause-final particle. In the 5,000 sample of YE, the vast majority of YE appear in two positions: the position preceding the verb in the canonical VO order and the clause-final position. There are also tokens in the position preceding the verb in OV order, but the proportion is smaller than that of VO order and that of clause-final position. Moreover, 也 YE behaved differently in VO and OV word orders. I will start from the characteristics of YE in VO order and move on to OV order. YE in VO order has several functions including additive, concessive, and scalar, as shown in (57)-(59), respectively.

(57) 羅公子也換了戰袍，出來相見 [from *ASACC*]

Luó	gongzǐ	**yě**	huàn	le	zhànpáo，	chū	lái	xiāngjiàn
Luo	mister (honorific)	YE	change	PRF	war robe	come	out	meet

'Mr. Luo also put on his war robe and came out to meet (people)'.

(58) 已經修煉成了，也算得是神仙了[from *ASACC*]

yǐjīng	xiūliàn	chéng	le，	**yě**	suànde	shì	shénxiān	le
already	cultivate	complete	PRF	YE	count	be	deity	PTC

'(He) has completed the self-cultivation. (He) can now be counted as a deity.'

(59) 連小女也有光輝[from *ASACC*]

lián	xiǎo	nǚ	**yě**	yǒu	guānghuī
even	small	girl	ye	have	glory

'Even I (female modest appellation) can share the glory.'

The uses as an additive particle, a concessive particle, and a clause-final particle indicating the end of a narration were the three main functions of YE in the Early Mandarin SVO order. The additive function is the center of the polysemous network. The concessive reading has developed from the additive reading because concession requires at least one more alternative for contrast. The additive marker has also developed as a narrative marker to indicate the boundary between two narrative topics. The use as a scalar particle in VO order is found in only 30 of the random 5,000 token sample. When YE functioned as a scalar particle in SVO order, it had to co-occur with *lián* 'even' to flank the subject argument, as in (59). The requirement of the addition of *lián* 'even' means that the LIAN…YE construction began in Early Mandarin Chinese.

With respect to OV order, there are 71 tokens of YE found in the random sample. YE in OV order is not observed in previous periods, so this can be viewed as the incipient stage of YE involved in the OV construction. Among these tokens, 13 tokens of YE co-occur with *lián* 'even', which all appear in negative environments. Among the 71 tokens, generalizations regarding the environments where YE is interpreted as a scalar particle can still be found in these OV cases. Figure 4.2 features two important characteristics of YE in OV order. First, in the OV construction, YE was more frequently used as a scalar particle. Second, the scalar YE occurred more frequently in the negative OV construction than in the non-negative one.

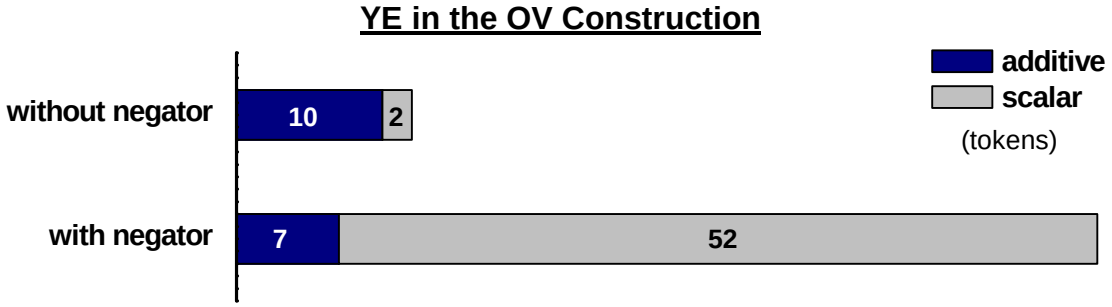


Figure 4.2: Tokens of YE in OV order classified by the co-occurrence with a negator

In the non-negative OV construction, YE was more frequently used in the additive function shown in (60) than in the scalar function. When negation was involved, the situation is reversed. YE has more tokens in the scalar function, as in (61), than in the additive function. The additive YE in OV order differs from that in VO order in that it tended to occur in parallel clauses to connect two alternatives, as in (62). A sense of scalarity can be found in this type of additive YE although its main purpose is to connect two parallel clauses. The connected two items have the implication that they are the most basic or likely activities for the subject. If the subject did not do the two activities, it implicates that he did not do other kinds of activities either. Hence its scalar reading is not as salient as that in (61). In brief, the distribution of the two functions of YE in Figure 4.2 indicates that the negative OV construction offers a special environment for YE to be connected to a scalar reading.

(60) 這部書我也曾看過[from *ASACC*]

zhè	bù	shū	wǒ	**yě**	céng	kàn	guò
this	collection	book	I	YE	up to now	see	ASP

'I also have read this collection of books.'

(61) 一句話也回答不出[from *ASACC*]

yí jù huà **yě** huídá **bù** chū
one CLF speech YE answer NEG out
'cannot answer even a word' [from ASACC]

(62) 兒自那日歸家，點心也不吃，飯也不吃，覺得身體不快 [from *ASACC*]

ér zì nà rì guī jiā， [diǎnxīn **yě** bù chī，
son since that day return home snack YE NEG eat

fàn **yě** bù chī]， juéde shēntǐ bú kuài
meal YE NEG eat feel body NEG comfortable
'Since the son came home, he has not eaten snacks nor meal. He doesn't feel good.'

The above overview leads us to notice the tendency of YE being interpreted as a scalar particle in the negative OV construction. Then the question is: what are the conditions of the negative OV construction for this scalar function to develop? A closer examination of the tokens of YE in the negative OV construction is necessary. The first step is to collect the combination of 也無 *yě wú* 'YE EXISTENTIAL.NEG' and 也不 *yě bù* 'YE NEG' from the corpus. Afterwards, the cases involving the OV construction are filtered from the two pools. Among a total of 2,913 clauses containing 也無 *yě wú* 'YE EXISTENTIAL.NEG', there are 88 tokens involving the OV construction. It is worth noting that all these tokens of YE are exclusively used as a scalar particle. The phenomenon clearly reflects the specific connection between the scalar interpretation of YE and the OV construction. The other functions of YE are not found when the OV construction is used. When the tokens are classified from the two periods, Early Mandarin Chinese I (7c. A.D. to 12c. A.D.) and Early Mandarin Chinese II (13c. A.D. to 19c. A.D.), the distribution shows that the 'one'-phrases as minimizers account for the biggest portion among the different types of scalar conditions, as indicated in Figure 4.3. The frequent collocation with minimizers can thus be treated as the main condition for YE to be interpreted as a scalar particle.

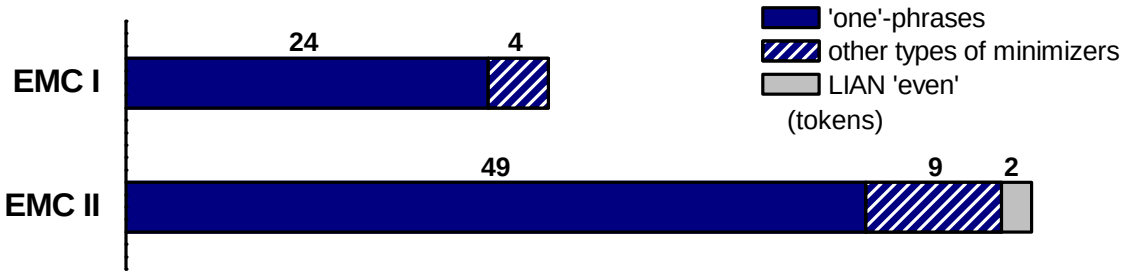


Figure 4.3: Types of the OV constructions involving YE and the existential negator *wú*

Particularly, in the group of Early Mandarin Chinese I, the tokens of YE all appear in the preverbal minimizer construction. In addition, 'one'-phrases as minimizers constitute the biggest portion of the minimizers in Early Mandarin I. In this type of construction, YE serves as a scalar particle, as shown in (63). The four tokens in the category of other types of minimizers are all *bàn* 'han'-phrases, which are also expressions of small quantity, as in (64). The data suggest that the scalar YE had its beginning in the combination with quantity-related minimizers.

(63) 不說即一字也無 [from *ASACC*]
bù shuō jí [yí zì] **yě** wú
NEG say then one word YE NEG
'(If he doesn't want to speak,) then there is not even a word.'

(64) 老僧半句也無 [from *ASACC*]
lǎo sēng [bàn jù] **yě** wú
old monk half sentence YE NEG
'The old monk does not have even a half sentence.'

Similarly, the majority of the tokens of YE in the group of Early Mandarin Chinese II also occur in the preverbal minimizer construction. In most cases, the type of the preverbal object is still the 'one'-phrases as minimizers, as in (65).

(65) 而且一株花木也無 [from *ASACC*]
érqiě [yì zhū huā mù] **yě** wú
moreover one CLF flower tree YE NEG
'Moreover, there is not even a flower nor a tree.'

The group of "other types of minimizers" in Figure 4.3 includes *bàn* 'han'-phrases as in (66), and minimizers of quality as in (67).

(66) 手內分文也無 [from *ASACC*]
shǒu nèi [fēn wén] **yě** wú
hand inside cent penny YE NEG
'There is not even a single penny in hand.'

(67) 只見空房開著，人影也無 [from *ASACC*]
zhǐ jiàn kōng fáng kāi zhe， [rén yǐng] **yě** wú
only see empty room open ASP human shadow YE NEG
'can only see the vacant room with its door opened, without even a human shadow'

The Chinese NPIs which are not expressions of quantity are noted by Hole (2004). These NPIs are conventionalized expressions referring to minimal experiences. They evoke possibilities related to the minimal experience in the same domain. As shown in (68), *chī fàn* 'eat rice' in Chinese is a fixed expression meaning the activity of eating a meal. It is viewed as a minimal everyday experience. The denial of having this minimal experience entails the denial of conducting other non-basic activities relating to daily life. Although there is neither a minimizer nor *lián* 'even' in (68), a scalar reading still arises.

(68) 哭了兩日，飯也不吃 [from *ASACC*]
kū le liǎng rì， fàn **yě** bù chī
cry PRF two day rice YE NEG eat
'(She) cried for two days and did not even eat.'

The bar of Early Mandarin Chinese II in Figure 4.3 shows that the *lián* 'even' construction is also a condition for YE to be understood as a scalar particle. The occurrence of

lián ‘even’ is later than the occurrence of the preverbal minimizer construction. *Lián* ‘even’ is constrained to immediately preceding its modified NP. As shown in (69), *lián* ‘even’ and YE sandwich the preverbal object. The preverbal object does not belong to the category of minimizers like ‘one’-phrases since *lián* ‘even’ guarantees a scalar reading.

(69) 連官也無心去做 [from *ASACC*]

lián	guān	**yě**	wú	xīn	qù	zuò
even	government official	YE	NEG	mood	go	do

‘even had no mood to complete his duties as a government official’

The examination of the data involving YE and the existential negator 無 *wú* shows that the OV construction with a scalar reading is the crucial environment for YE to develop its scalar function. When YE appears in a scalar environment, it is infused with a scalar reading. Among the three types of scalar constructions in Figure 4.3, the preverbal minimizer construction is the oldest one, having emerged around the transition of Old Chinese to Middle Chinese. Both the *lián* ‘even’-construction and the NPIs of quantity are later developments since their earliest occurrence can only be traced to Early Mandarin Chinese. Their difference on the timeline is also reflected in Figure 4.3. It is highly possible that the scalar YE developed from the preverbal minimizer construction first, particularly with ‘one’-phrases as minimizers. The bond between YE and the ‘one’-phrases as minimizers has become stronger over time. In Modern Mandarin, the preverbal minimizer construction generally includes YE unless an archaic overtone is used for a stylistic purpose.

A similar observation can also be made in the pool of 也不 *yě bù* ‘YE NEG’. In a random 5,000 sample out of 16,680 tokens of 也不 *yě bù* ‘YE NEG’, there are 389 tokens involving the OV construction. As shown in Figure 4.4, the majority of YE are used as a scalar particle, while there is a relatively small number of the additive YE. The distribution again shows the specific connection between the OV construction and the scalar reading.

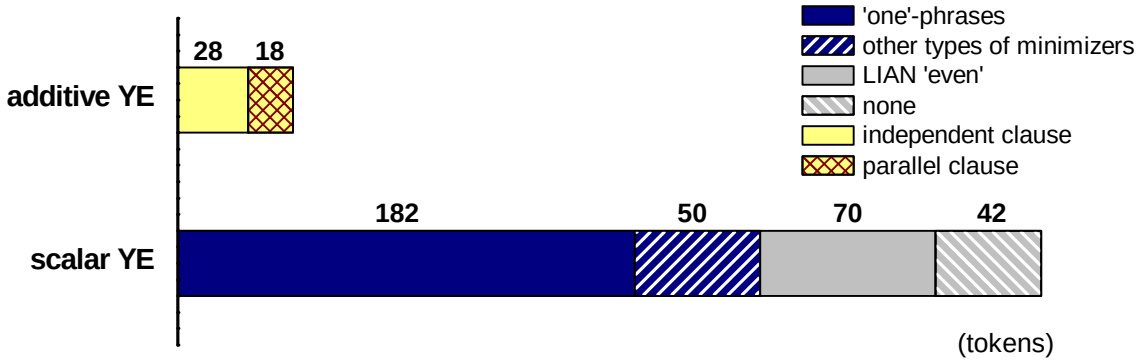


Figure 4.4: Types of the OV constructions involving YE and the negator *bù*

In the group of scalar YE, the preverbal minimizer construction, including ‘one’-phrases as in (70) and other types of minimizers as in (71), still constitute the majority. Among the different types of minimizers, the ‘one’-phrases as minimizers are still the most frequently occurring type.

(70) 餘下珠寶衣服，一件也不要 [from *ASACC*]

yúxià	zhūbǎo	yīfú，	[yí	jiàn]	**yě**	bú	yào
the rest	jewelry	clothes	one	CLF	YE	NEG	want

'did not take even a piece of the remaining jewelry and clothes'

(71) 我顆粒也不敢擅動 [from *ASACC*]

wǒ	[kē	lì]	**yě**	bù	gǎn	shàn	dòng
I	droplet	pellet	YE	NEG	dare	unauthorized	move

'I dare not move even a little something without authorization.'

Another scalar environment which contributes to a scalar interpretation of YE is the *lián* 'even'-construction, as shown in (72). However, it is less frequent than the preverbal minimizer construction.

(72) 連齋也不喫，拂衣而去 [from *ASACC*]

lián	zhāi	**yě**	bù	chī，	fú	yì	ér	qù
even	vegetarian meal	YE	NEG	eat	flick	clothes	and	leave

'(He) left in a huff without even eating the vegetarian meal.'

The group labeled by *none* in Figure 4.4 contains the cases where neither the preverbal minimizer construction nor *lián* 'even' is involved but YE is still used as a scalar particle, as shown in (73). These cases suggest that YE has become a full-fledged scalar particle since there are no other scalar elements in the sentences. It is noteworthy that this type of the scalar YE is restricted to the OV construction. The restriction again indicates the special effect of the OV construction on inducing scalar readings.

(73) 若此風聲一露，那小姐性命也不可保了 [from *ASACC*]

ruò	cǐ	fēngsheng	yí	lòu，	nà	xiǎojiě	xìngmìng	**yě**	bù	kě	bǎo	le
if	this	news	once	leak	then	miss	life	YE	NEG	can	keep	PAR

'If the news leaks, then the lady's life cannot even be kept.'

The discussion of the distribution of YE in Figure 4.4 so far shows that the interpretation of YE relies heavily on the environments where it occurs. The OV constructions are the crucial environments for YE to be used as a scalar particle. Specifically, the frequent co-occurrence with 'one'-phrases as minimizers has diachronically infused YE with a scalar reading.

The earlier discussion of the additive YE in OV order in Figure 4.2 shows that this type of YE tends to appear in parallel clauses. The same phenomenon can also be found in the combination of 也不 *yě bù* 'YE NEG'. As shown in (74), YE serves as a connector of the two clauses. Although it is mainly used in the additive function, it still carries a sense of scalar reading. In (74), the two activities connected by YE evoke a set of related activities which normally happen before going to bed. The denial of the two basic activities entails the denial of the other activities of the same set. The cases also show that when the NP modified by YE is in focus, for example, in the OV construction, it tends to evoke other related alternatives, which contributes to a scalar reading of the whole construction. This will be discussed in Section 4.3.1.

(74) 跌到房中，面也不洗，衣也不脫，爬上床 [from *ASACC*]

dié dào fang zhōng， [miàn **yě** bù xǐ， yì **yě** bù tuō]，
stumble ASP room inside face YE NEG wash clothes YE NEG take off

pá shàng chuáng
climb on bed
'(He) stumbled into the room. (He) didn't wash his face nor take off his clothes, and then climbed into the bed.'

To summarize, the distribution of YE in various constructions in Early Mandarin Chinese reveals that the interpretation of YE is relevant to word order. YE in VO order serves as an additive particle, while it tends to be used as a scalar particle in the OV constructions. In addition, the data show that the scalar YE prefers to occur in the preverbal minimizer construction, particularly with the 'one'-phrases as minimizers. Based on the diachronic analysis, YE has been shaped into a scalar particle in the OV constructions, encoding a scalar reading.

4.2.2.2 Involvement of DOU in OV order in Early Mandarin Chinese

As discussed in Section 4.1, YE is often viewed simply as a substitute of DOU in terms of the scalar function. However, the issues of what their relationship is and why they overlap in the scalar interpretation are barely touched upon in the literature. Although they differ greatly in function, they have a similar syntactic distribution. Particularly, they both became involved in the OV construction in Early Mandarin Chinese. This similarity offers them the same environment for developing their scalar function. How DOU has behaved diachronically in OV and VO order will be introduced below.

In Middle Chinese, DOU is found only in VO order, functioning only as a distributive marker or as a universal quantifier on the plural subject. No examples of DOU in OV order are found in that period. In Early Mandarin Chinese, DOU was no longer restricted to occurring in VO order. The overview of DOU in Early Mandarin Chinese below is based on a random 5,000 token sample out of 50,701 tokens from the corpus. In Early Mandarin Chinese, DOU in the SVO order was mostly used in its distributive function, as shown in (75). There are only 6 tokens of DOU used in its scalar function, as shown in (76). The tokens all have *lián* 'even' attached to the subject argument, suggesting that DOU was not an independent scalar particle yet in the SVO order yet.

(75) 男女老少都到車邊道謝送行 [from *ASACC*]

nán nǚ lǎo shào **dōu** dào chē biān dàoxiè songxíng
man woman old young DOU arrive carriage side thank see someone off
'Men, women, the old, and the young all came to the carriage to thank (him) and see (him) off.'

(76) 連那池中都枯竭了 [from *ASACC*]

lián nà chí zhōng **dōu** kūjié le
even that pond middle DOU dry PRF
'Even the middle of the pond went dry.'

How DOU is interpreted is determined by the environments where it appears. DOU is more likely to be interpreted as a scalar particle in the negative OV constructions. As shown in Figure 4.5, both the scalar and the distributive DOU can be found in the OV constructions in this sample. However, the distributive function tends to appear in the non-negative OV construction as in (77), while the scalar function tends to appear in the negative OV construction as in (78).

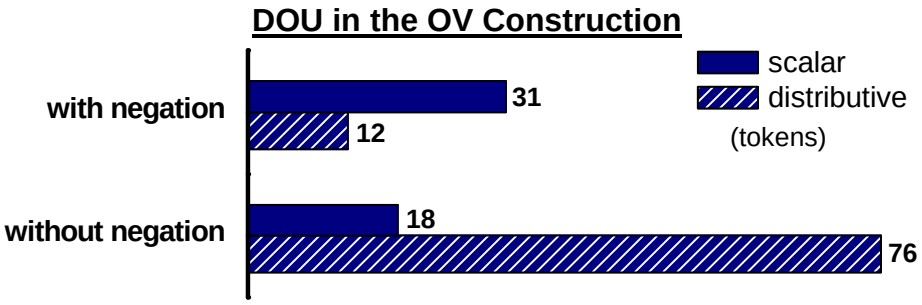


Figure 4.5: Functions of DOU in the negative and non-negative OV constructions

(77) 一交絆翻，碗碟都打碎了 [from *ASACC*]

yì	jiāo	bàn	fān，	[wǎn	dié]	**dōu**	dǎ	suì	le
one	fall	trip	overturn	bowl	plate	DOU	hit	broken	ASP

'One tripping over, and the bowls and plates were all shattered.'

(78) 一個都不在家 [from *ASACC*]

[yí	ge]	**dōu**	**bú**	zài	jiā
one	CLF	DOU	NEG	at	home

'Not even a single person is at home.'

Since the distribution in Figure 4.5 suggests that the scalar DOU leans toward the negative OV construction, it is necessary to examine the negative OV constructions involving DOU in order to distinguish the environments where DOU must be used as a scalar particle. All clauses containing the combination of 都不 *dōu bù* 'DOU NEG' are extracted from the *Corpus of Early Mandarin Chinese* to find the tokens which have both DOU and a preverbal object. Among a total of 2,724 tokens of 都不 *dōu bù* 'DOU NEG', there are 130 tokens occurring in OV order. The distribution of DOU in the additive and scalar functions is shown in Figure 4.6, divided into Early Mandarin I and II. In Early Mandarin I, DOU in OV order is mainly used as a distributive marker, with only 2 tokens as a scalar particle. The situation is reversed in Early Mandarin II, where there are more tokens as a scalar particle. This contrast supports the hypothesis that the scalar function is a later development.

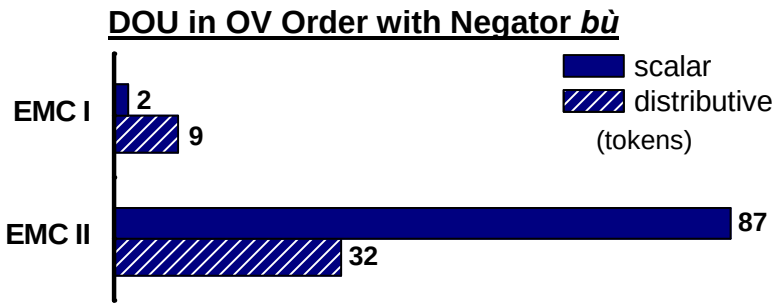


Figure 4.6: Functions of DOU in OV order with negator *bù*

The different types where DOU is used as a scalar particle are further classified in Figure 4.7[4]. In Early Mandarin Chinese I, only two scalar cases appear with the 'one'-phrases as minimizers. Early Mandarin Chinese II, however, offers more varieties. The *lián* 'even'-construction and the OV construction without markers began to get involved. The examples provided below show how DOU is used in each of these constructions.

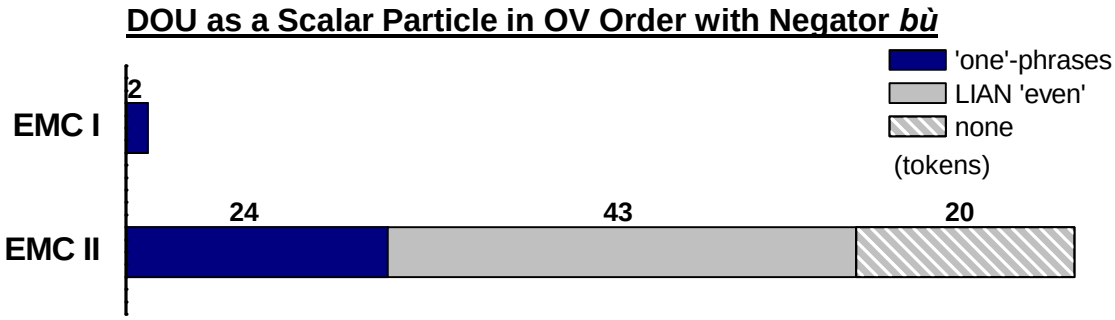


Figure 4.7: Types of the environments for the scalar DOU

The 'one'-phrases as minimizers provide the scalar environment for DOU to build its scalar function, as in (79). The process is similar to the development of the scalar YE.

(79) 一釐都不借 [from *ASACC*]

[yì lí]	**dōu**	bú	jiè
one UW (a small monetary unit)	DOU	NEG	lend

'did not lend even a cent'

Another environment for DOU to be used as a scalar particle is the *lián* 'even'-construction. As show in (80), DOU and *lián* 'even' flank the preverbal object.

(80) 連命都不要 [from *ASACC*]

lián mìng	dōu	bú	yào
even life	DOU	NEG	want

'(He) does not even care about (his) life.'

[4] In EMC II, there are 7 tokens which contain both 'one'-phrases as minimizers and *lian* 'even'. They are classified into the group of 'one'-phrases in Figure 4.7.

There are also cases where neither the 'one'-phrases as minimizers nor *lián* 'even' appears, but where a scalar reading is still available, as shown in (81). It is noteworthy that this type of scalar DOU without the co-occurrence of minimizers and *lián* 'even' can only be found in OV order, not in VO order. This implies that the scalar reading of DOU has a connection with the OV construction.

(81) 不見動靜，…晚飯都不吃 [from *ASACC*]
bú jiàn dòngjìng， [wǎnfàn] **dōu** bù chī
NEG see movement dinner DOU NEG eat
'did not see his reaction. …(He) did not even eat dinner.'

This distribution of DOU in Early Mandarin Chinese shows that the construction where DOU appears determines the function of DOU. When DOU occurs in scalar environments, such as the preverbal minimizer construction and the *lián* 'even' construction, it has only a reading as a scalar particle. In other words, the scalar function of DOU has been shaped out of the scalar environments.

The scalar reading determined by the OV constructions can be observed in the development of both DOU and YE. A comparison of them shows that they are not simply variants of each other since their core functions differ greatly. Furthermore, the scalar function is a later development. The fact that both DOU and YE have developed a scalar function is related to the construction types where they frequently occurred. In the next section, I will present how DOU and YE came to be associated with the OV construction due to their syntactic constraints and how they have acquired the scalar reading from the OV constructions.

4.3 Association of Scalar DOU and YE with the OV Construction

As discussed in Section 4.2.1.1, Mandarin OV order forms a grammatical category including a wide array of varieties of OV constructions. Most of the members in the OV category in Old Chinese ceased to be used, but the central core of the various OV constructions continues to contemporary Mandarin. New members of the OV grammatical category continue to emerge. For example, in Early Mandarin Chinese, different markers such as DOU and YE began to appear in the OV word order for different purposes. The relation between DOU or YE and the OV construction will be discussed in this section. I will first provide a constructional analysis of the OV construction to show how the grammatical category is motivated in Section 4.3.1. Then the discussion in Section 4.3.2 will focus on the syntactic constraints of DOU and YE, which are relevant to the two word orders, OV and VO. Section 4.3.3 adopts a diachronic perspective to discuss how DOU and YE came to be associated with 'one'-phrases as minimizers. The analysis will show how a lexical form develops new readings from frequent occurrence in a construction.

4.3.1 Information structure of Mandarin Chinese OV construction

The discussion of OV order in Section 4.2.1.1 has shown that various constructions involving Chinese OV order form a grammatical category which brings focal prominence to the object argument. The data from different periods of Chinese shows that OV order has a different information structure from that of the canonical VO order in Mandarin Chinese. The typical SVO word order in Mandarin Chinese has predicate focus whereas the OV construction is motivated for indicating object focus. In Mandarin Chinese, the salient part of the information structure is normally reflected in the pitch accent. As a result, the object argument in the OV construction generally carries a focus stress. In sum, Mandarin OV construction has its own syntactic, semantic, pragmatic, and phonological properties. These characteristics are presented in the box diagram in Figure 4.8.

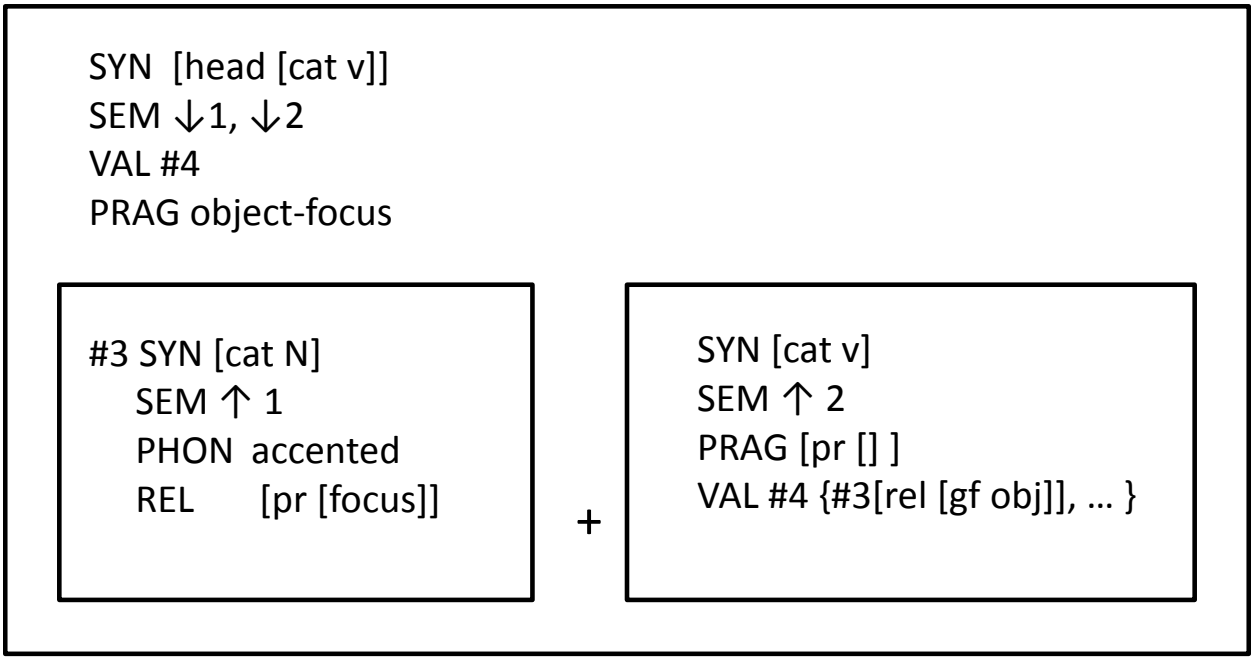


Figure 4.8: The Mandarin Chinese OV construction[5]

I will briefly introduce the Construction Grammar formalism (Kay and Fillmore 1999, Fried & Östman 2004a) in Figure 4.8 below[6]. For present purposes, the diagram only specifies the most relevant features. The notation has three major devices: box diagrams for representing constituent structure, feature structures for grammatical information, and co-indexation for keeping track of unification relations. The unification-based principle is crucial in the Construction Grammar framework. In other words, constructions and specifications within constructions have to unify in a non-derivational fashion in order to ensure only pieces of linguistic material that match can be licensed as a construct. The nested boxes can capture the linear order of constituents as well as their dominance relations. The + symbol indicates that there might be a variable number of elements between the two boxes, but at least one must be

[5] Abbreviations in the diagram: cat .lexical category, FE: frame element, gf: grammatical function, lform: lexical form, PHON: phonological, pr: pragmatic relation, PRAG: pragmatic, rel: relationship, REL: relational attributes, SYN: syntactic, SEM: semantic, VAL: valence requirements,

[6] For technical details, please refer to Fried & Östman (2004a), Kay and Fillmore (1999), and Michaelis (2012).

present for this diagram to represent a phrasal pattern. The formalism has the distinction between construction level and constituent level information. The outer boxes will specify characteristics of a construction as a whole to explain how a construction fits in a larger grammatical pattern. Regarding the internal characteristics, the make-up of a construction is represented by a set of boxes. The constructions that contain predicates have to specify how semantic arguments are expressed in the grammatical pattern in question. The linking between a predicate's semantics and its corresponding grammatical function is expressed by the predicate's valence. The symbol # is used to indicate semantic linking between frame elements and valence elements.

The form of bracketed attribute-value pairs represents grammatically relevant information. An attribute stands for a particular property of syntax, semantics, pragmatics, or phonology, etc. Value is a specification of a certain property in the construction. The Construction Grammar approach allows a value to be unspecified, marked by [ ]. If the notation is […], it is a shortcut for indicating that a value must be specified but currently is not. The information of a construction is supplied from the constituents passing on to the phrase. The kind of relationship is also labeled by the unification indices such as #1 and #2. They represent a connection between the semantic attributes of the constituents labeled by # and the external semantics of the construction as a whole. The semantic characterization of the construction includes integrating the frames of the constituents. To present this relation, the downward arrow ↓ refers to the integration of external semantics with the semantics of the constituents marked by the upward arrow ↑.

Information such as syntactic, pragmatic, semantic, and phonological properties is specified for each constituent and each construction. For example, in Figure 4.8 the SYN (syntactic) label in the top left corner of the outermost box characterizes the OV construction as a clause headed by a verb. Regarding the category value of the SYN attribute, it is the same as that of the lexical head. Also, the values of the attributes SEM (semantics) and VAL (valence) are the same as that of the head. The value of the focus-structure type to which the construction belongs is specified in PRAG (pragmatics) (Lambrecht 1994). An argument expression has relational attributes. The values of the pragmatic-relation attribute are either topic or focus (Lambrecht 2004). In the case in Figure 4.8, the OV construction has the focus type of object-focus, and therefore the lexical argument before the verb has a focus relation to the proposition. As defined in Lambrecht (2004), if the occurrence and role of a denotatum in the proposition are assumed by the speaker to be pragmatically non-recoverable at the time the sentence is uttered, it has a focus relation to a proposition. Specifically, the occurrence of the focus denotatum in a proposition is the key element that makes it possible for the sentence in question expressing the proposition to structure a potential piece of information. The focal prominence of the argument is marked by accent as specified in the attributes of PHON (phonological & prosodic properties of the construction). Since the verb may be neutral or non-focal, the value of the pragmatic-relation attribute of the verb is left unspecified. It waits for further specification from unification with other constructions.

The OV construction can be traced back to Old Chinese. Although the members of this grammatical category have changed, the macro construction has persisted through Old Chinese, Middle Chinese, and Early Mandarin to Modern Mandarin. In different periods, different markers became involved to specify the type of focus of the object argument. For example, in Modern Mandarin the OV construction can be further divided into various subtypes by the co-occurring markers, such as contrastive, additive, and restrictive (N. Zhang 1997, 2000), as shown in (82)-(84) respectively. A comparison of the Mandarin examples with their English translations

in (82) shows that languages employ different strategies to represent focus in discourse. The cleft construction is used for contrastive focus in English, while the variation in word order is used for contrastive focus in Mandarin Chinese. It is worth noting that the Mandarin additive focus defined in N. Zhang (2000) is also scalar, as shown in (83). The Mandarin restrictive focus appears in both VO and OV word orders, but the scope of focus in the two word order patterns is different. As shown in (84), the restrictive focus in VO can be either VP focus or object focus, while in OV order, the restrictive focus must fall on the preverbal object.

(82) Contrastive focus

a. 他是看了那部電影

tā **shì** kàn-le [nà bù diànyǐng]
he be watch-PFV that CLF movie
'It is THAT MOVIE that he has watched.

b. 他那部電影看了

tā [nà bù diànyǐng] kàn-le
he that CLF movie watch-PFV
'He has watched THAT MOVIE.'

(83) Additive focus

a. 他甚至看過那部電影

tā **shènzhì** kàn-guò [nà bù diànyǐng]
he even watch-EXP that CLF movie
'He even watched THAT MOVIE.'

b. 他連那部電影都看過

tā **lián** [nà bù diànyǐng] **dōu** kàn-guò
he even that CLF movie DOU watch-EXP
'He even watched THAT MOVIE.'

(84) Restrictive focus

a. 他只喝啤酒

tā **zhǐ** hē píjiǔ
he only drink beer
'He only drinks BEER.'/ 'He only DRINKS BEER.'

b. 他只有啤酒才喝

tā **zhǐyǒu** píjiǔ **cái** hē
he only beer only drink
'He only drinks BEER.'

Each pair shows how a given subtype of object focus is expressed in VO and OV orders. Different sets of markers are employed for the same type of focus in question in different word orders. For example, with respect to the contrastive focus, a marker is required in VO order, but no marker is needed in OV order. The additive focus needs to be marked in both orders, but in OV order it needs two markers surrounding the object argument. Similarly, the markers for

restrictive focus vary with word orders. The different natures of VO and OV make them require different types of markers to specify the types of focus.

In VO order, if there is a contrastive clause, there are two possibilities of the focus domain. It can be on the object argument or on the whole VP, as illustrated in the contrast of (85) and (86). The restrictive focus in the former is on the object argument, whereas in the latter it covers the whole VP.

(85) 他只喝啤酒，不喝紅酒

tā	zhǐ	hē	[píjiǔ]，	bù	hē	[hóngjiǔ]
he	only	drink	beer,	NEG	drink	red wine

'He drinks only beer. He doesn't drink red wine.'

(86) 他只喝啤酒，不吃東西

tā	zhǐ	[hē	píjiǔ]，	bù	[chī	dōngxī]
he	only	drink	beer,	NEG	eat	thing

'He only drinks beer. He doesn't eat.'

In OV order, on the contrary, the focus can only fall on the object argument. The establishment of the OV construction can efficiently delimit the focus domain. Since Old Chinese, the OV construction has been instantiated as diverse subtypes at different periods. The subtypes have their life cycles. Some discontinue, and some continue. The OV construction remains unchanged at the moment of this writing. The long-standing construction plays a crucial role in connecting focus and scalarity, which will be discussed in the next section.

4.3.2 Interaction of the OV construction with DOU and YE

This section discusses the connection between the OV construction and DOU and YE. I will first introduce their syntactic constraints, and relate the constraints to focal prominence. Then I will discuss the similarities and differences of DOU and YE when they appear in the OV construction. Finally, I will show how DOU and YE are accommodated in the OV construction.

Section 4.2.2 has shown that DOU and YE differed greatly in terms of meanings, but they behaved similarly regarding their syntactic positions in Early Mandarin Chinese. In Modern Mandarin, they still have much in common in their syntactic distribution. If they are related to the subject argument, they appear in the SVO order in the position immediately preceding the main verb, as in (24) (repeated in (87)) and (88). Despite the syntactic similarity, DOU and YE still have different constraints. In the SVO word order, YE can result in two possible readings. For example, (87) has different presuppositions depending on the placement of the stress, either on the subject or on the VP. Nevertheless, DOU can only distribute over a plural that precedes it, as shown in (88).

(87) 我也想看這本書

[wǒ]$_a$	**yě**	[xiǎng	kàn	zhè	běn	shū]$_b$
I	YE	want	read	this	CLF	book

a. 'I also want to read this book.'
   Presupposition: somebody else [also] wants to read this book.
b. 'I want to read also this book.'
   Presupposition: I want to do something else [also].

(88) 他們都想看這本書

[tāmen]	**dōu**	xiǎng	kàn	zhè	běn	shū
they	DOU	want	read	this	CLF	book

'They all want to read this book.'

The discussion so far leads to the generalization that in SVO order DOU and YE have to be adjacent to the constituent that bears the accent. In addition, they have to precede the main verb. Granted the two constraints, the question is what happens if they are associated with an object argument. According to the data, if the focus is placed on the object, the OV construction must be involved, as in (89). It is worth noting that the position of YE in this example still complies with the adjacency requirements which are relevant to the main verb and the accented element.

(89) 我這本書也想看

wǒ	[zhè	běn	shū]	**yě**	xiǎng	kàn
I	this	CLF	book	also	want	read

'I want to read this book, also.'

However, DOU follows a different rule in OV word order. If it functions as a floating quantifier associated with a plural (cf. *each, all*), the plural in question does not need to be adjacent to DOU (Szabolcsi et al 2014), as shown in the contrast between (90) and (91). Even so, DOU still immediately precedes the main verb.

(90) 這些書我都想看

[zhè	xiē	shū]	wǒ	**dōu**	xiǎng	kàn
this	PL	book	I	DOU	want	read

'I want to read all these books.'

(91) 我這些書都想看

wǒ	[zhè	xiē	shū]	**dōu**	xiǎng	kàn
I	this	PL	book	DOU	want	read

'I want to read all these books.'

Focal stress also plays a crucial role in determining how the associate of DOU is interpreted. If the plural object receives a focus pitch accent, it has to immediately precede the verb, as in (92). Interestingly, with proper contexts, it presupposes that the subject wants to read some other books. The use of DOU has the presupposition that other alternatives are entailed. It implies that the speaker already has in mind something he or she wants to read. 'These books' are contrasted with other choices with the assumption that 'these book' are not the books that the subject is most interested to read. Generally, a stressed object in OV order carries a scalar implication.

(92) 我這些書都想看了

wǒ	[zhè	xiē	shū]	dōu	xiǎng	kàn	le
I	this	PL	book	DOU	want	read	SENTENCE-FINAL PTC

Assertion: 'Now I want to read these books.'
Presupposition: I wanted to read something else.

Mandarin DOU does not have a corresponding function of the additive YE, but Cantonese DOU does. As pointed out by Szabolcsi et al. (2014), the Cantonese DOU is a focus-sensitive additive particle. If an object argument is related to Cantonese DOU, it has to appear perverbally as shown in (93). The sentence can have the additive reading without contextual support. Cantonese DOU in this sense is similar to Mandarin YE since both of them have the same presupposition. The phenomena in both Mandarin and Cantonese support the fact that the function of DOU is strongly related to the constructions where it occurs. To be more specific, when the argument related to DOU is a focus associate, at least one alternative is evoked. In this case, DOU is not used in its typical function as a universal quantifier.

(93) ngo^{5} $[syut^{3}gou^{1}]_{F}$ dou^{1} $soeng^{2}$ sik^{6} [from Szabolcsi et. al (2014): 30]

I	ice-cream	DOU	want	eat

'I want to eat $[\text{ice-cream}]_{F}$ also.'

The above comparison of DOU and YE shows that both their associates attract focal prominence. Due to the adjacency constraint, if an object argument is related to the two particles, it has to occur preverbally in the focus position, which is determined by the OV construction.

Based on their syntactic constraints, the construct that instantiates the involvement of DOU or YE in the OV construction is diagrammed in Figure 4.9. The box diagram in Figure 4.9 is a partial representation of the O-DOU-V and the O-YE-V constructs. Only the relevant attributes are annotated.

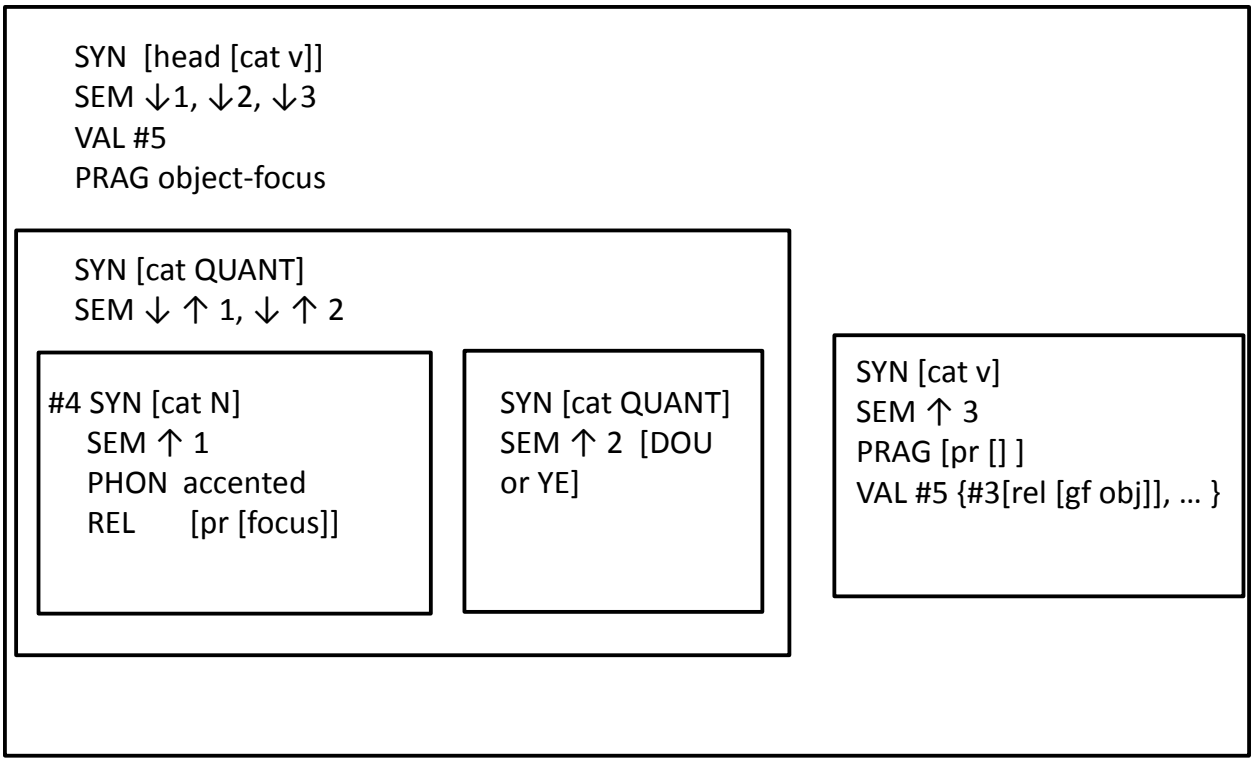


Figure 4.9: Mandarin O-DOU/ YE-V construct

The representation of the construct in Figure 4.9 can characterize the similarity in terms of syntactic constraints of DOU and YE as well as their relation with the OV construction. The constituent associated with DOU or YE attracts focal prominence, so the O-DOU-V and the O-YE-V construct are both established for object focus. The O-DOU-V or the O-YE-V construct contains all the specifications that hold for the OV construction. For instance, the focal prominence of the preverbal lexical argument and the focus accent are carried over to the O-DOU-V or the O-YE-V constructs. In the diagram in Figure 4.9, the semantics of the quantifier is not fully specified because it awaits DOU or YE to provide the details. When DOU or YE fills this position, it contributes its own semantic properties to the whole OV construction. The representation characterizes the similarities between DOU and YE regarding their relation to focus. It can also accommodate their differences in meanings through unification. As indicated by the upward and downward arrows in Figure 4.9, the semantic attributes of DOU or YE pass up to different phrasal levels. Based on this, the O-DOU-V and the O-YE-V constructs can maintain their idiosyncrasy. This shows the compositionality of the construction.

Note that the grammatical category of DOU and YE is labelled as Quantifier in the diagram to characterize their function of operating on the set of members evoked by the NP they attach to. Although the functions of a universal quantifier and an additive particle differ in nature, they can both refer to alternatives in a set determined by context. To be specific, DOU has been treated as a maximal operator exhausting a set of members relevant to its associated NP. When the box of quantifier in Figure 4.9 is filled with DOU, the property of exhaustivity passes up to its outer box and is unified with the preverbal NP. If the NP in question is plural, DOU imposes exhaustivity on all the components of the set. As shown in (94), the set related to the drinking predicate includes three kinds of liquor.

(94) 我白酒、紅酒、啤酒都喝

wǒ	[báijiǔ	hóngjiǔ	píjiǔ]	**dōu**	hē
I	white wine	red wine	beer	DOU	drink

'I drink white wine, red wine, and beer.'

However, if the NP in question is singular, the set of members is determined by the NP. As shown in (95), different types of beer are all included in the set. The example shows that the singular NP associated with DOU can induce a relevant set.

(95) 我啤酒都喝

wǒ	[píjiǔ]	**dōu**	hē
I	beer	DOU	drink

'I drink all kinds of beer.'

With respect to YE, it has been viewed as an additive particle. It presupposes that at least one alternative in the focus set of the sentence in question has been established. The most salient difference is that DOU has to exhaust all the alternatives within the relevant set, while YE does not have this requirement, as shown in the contrast between (95) and (96). In (96), YE presupposes that there are other kinds of liquors, but it does not necessarily have an exhaustive reading.

(96) 我啤酒也喝

wǒ	[píjiǔ]	**yě**	hē
I	beer	YE	drink

'I drink also beer.'

Based on the data of Modern Mandarin YE and DOU, the generalization is that the NP associated with a preverbal object position enjoys focal prominence. YE and DOU can be viewed as focus indicators (Liao 2011). Crucially, the focused NP can make reference to relevant alternatives. This property of introducing alternatives is a necessary condition for inducing scalar inferences. As defined in Israel (2011), a scalar model is a structured set of propositions ordered in terms of one or more conceptual scales. The input of a set of propositions is thus important in inducing scalar inferences. The possibility of contextually accessible alternatives offers the potential for YE and DOU to develop as scalar particles. Then the question concerned is what kind of environment caused the development, to be discussed in the next section.

4.3.3 DOU and YE in the preverbal minimizer construction

Section 4.2.2 has discussed the environments where DOU and YE are found in the scalar function in Early Mandarin Chinese. The data show that the preverbal minimizer construction plays a crucial role for them to develop their scalar function. I will discuss the characteristics of the preverbal minimizer construction first and then move on to their relations.

4.3.3.1 Characteristics of the preverbal minimizer construction

The Mandarin Chinese preverbal minimizer construction has been introduced in Section 4.2.1.2. The diagram in Figure 4.10 summarizes the formal, semantic, and pragmatic properties of the preverbal minimizer construction inasmuch as they are relevant to the present discussion.

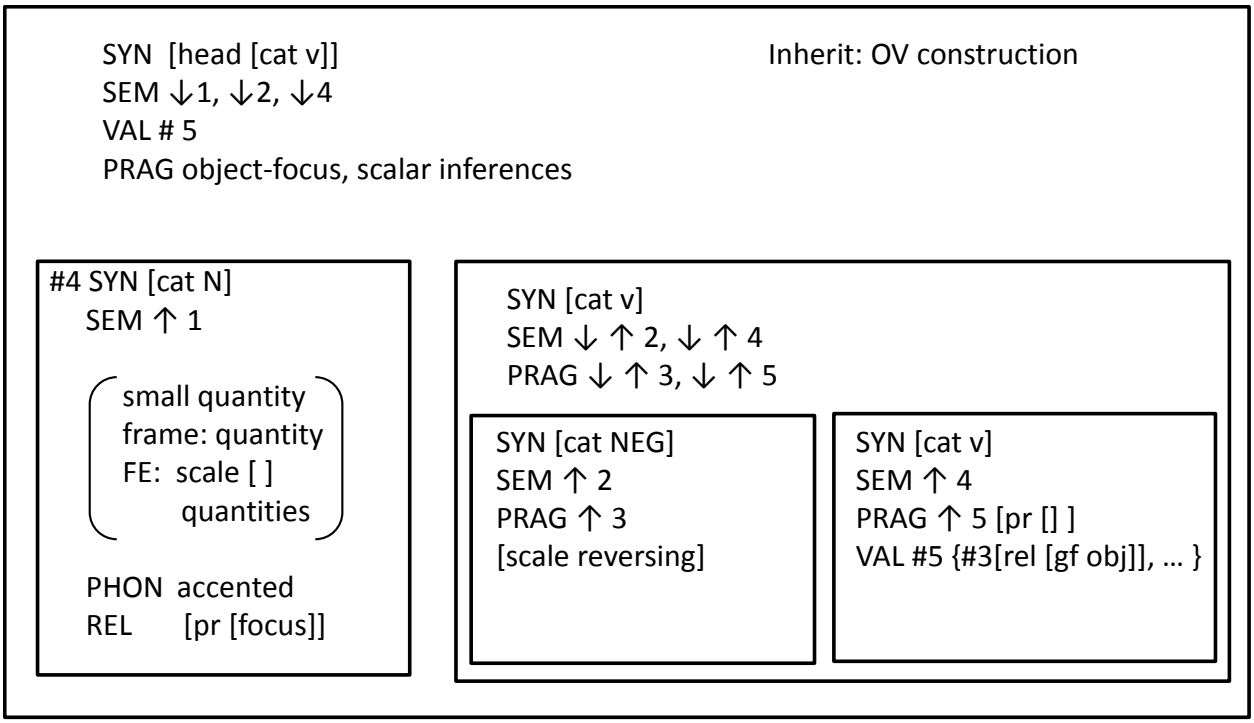


Figure 4.10: Mandarin preverbal minimizer construction

The outer box in Figure 4.10 represents the phrase externally as the preverbal minimizer construction. This box internally consists of three major constituents, indicated by the presence of the three boxes. The one on the left represents the 'one'-phrase as the minimizer and serves the preverbal object of the whole phrase, while the larger box on the right represents the negation phrase, which is also internally complex, consisting of a negation and a VP. A representation of the preverbal minimizer construction is shown in Figure 4.11.

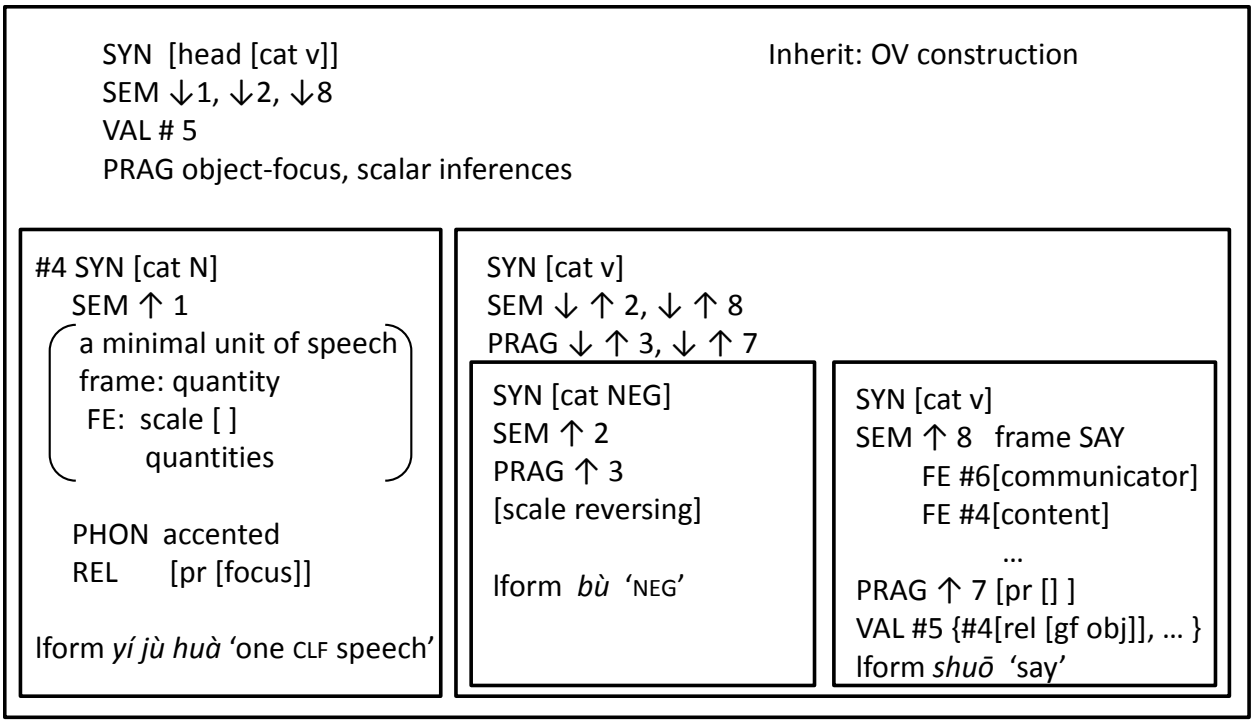


Figure 4.11: Representation of the construct *yí jù huà bù shuō*'didn't say even a word'

The nested boxes in Figure 4.11 show that the preverbal minimizer construction inherits the OV construction. The object is specified to be expressions of small quantity. The expression of a small quantity evokes a quantity-related frame, which includes different quantities and an ordered scale. The scale is the foundation for a scalar model. The inferences available in a scalar model are dependent on the schematic proposition that defines the model in question. The components of a scalar model include a propositional function or schema, P, and at least one variable which ranges over the ordered elements of a conceptual scale (Fillmore, Kay, and O'Connor 1988). The direction in which the scale is processed is crucial in determining the inferences. The scalar model in Figure 4.12 is adopted from Israel (2011: 58) to illustrate the directionality. For example, in a scalar model of hiking trails in Figure 4.12, the conceptual scale of hiking trails is ordered based on their difficulty. The specified values on the scale, T1, T2, T3…, are potential arguments for the function P. Within the scalar model, a schema P, 'Lily can complete T' licenses inferences from high to low values. In other words, if Lily can complete T5, P can be assumed to hold for the other easier trails lower than T5 on the same scale. The basic logic of the scale principle can be illustrated by the arrow in Figure 4.12, where the arrow pointing down from T5 indicates inferences starting from this point. However, when negation is involved, the schema ¬P has the inferences flowing from low to high values on the scale. This means that the validity of a low proposition entails that the validity holds of any proposition higher than that point. For instance, the scalar model in Figure 4.11 has the counts of words ordered, such as 0 word, 1 word, 2 words, and 3 words from the bottom to the top of a scale. The negation makes the inferences flow from low to high values: not saying one word entails not saying two words, three words,… and so on.

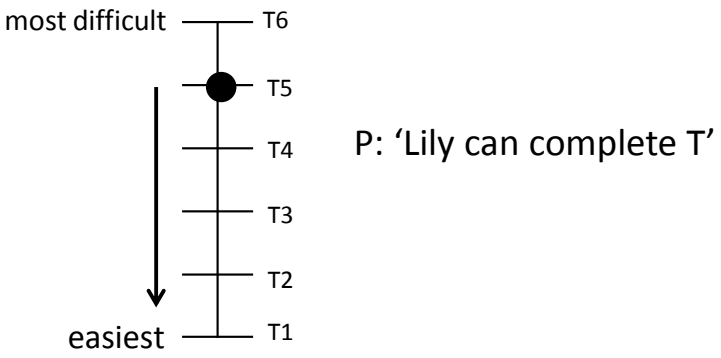


Figure 4.12: An example of scalar model

A general distinction between propositional schemas is proposed in Fauconnier (1978). One group, such as simple affirmatives, licenses inferences from high values to low values for a thematic argument in a scalar model. The other group, such as negative and affective contexts, reverses the entailments and licenses inferences from low values to high values for the same argument. Building on this distinction, Israel (2011) refers to schemas that license inferences from high values to low values as *scale preserving* since affirmative assertions are regarded to constitute the unmarked context, while those schemas licensing inferences from low values to high values is termed *scale reversing*.[7] The notion of the contrast in scale reversal and scale preservation is the reflection of polarity sensitivity. Therefore, the scale of the quantity expression has two possible values, either scale preserving or scale reversing. The value of the scale evoked by the small quantity expression in the preverbal minimizer construction is left unspecified. It awaits determination by other elements. In the construction, the scale receives its value from negation. Since negation reverses the scale, the inferences go from low to high values. On the other hand, the expression of a small quantity on an ordered scale refers to the smallest value toward the bottom end of the scale. Therefore, the combination of a reversed scale and an indicator to the bottom of the scale results in the entailments that the denial of any proposition of the small quantity low in the model pragmatically entails the denial of all propositions in the model higher than the one of the small quantity, as illustrated in Figure 4.13. The shaded part indicates the coverage of scalar inferences, which explains why minimizer NPIs have emphatic effects. When a minimizer NPI appears under the scope of negation, it is not only the expression of the smallest quantity per se that is negated. It also implies that any larger quantities are not possible.

[7] Scale preserving and reversing are characterized as upward entailment and downward entailment in Ladusaw (1980, 1983). Please refer to Chapter 3 for the discussion of a scalar model.

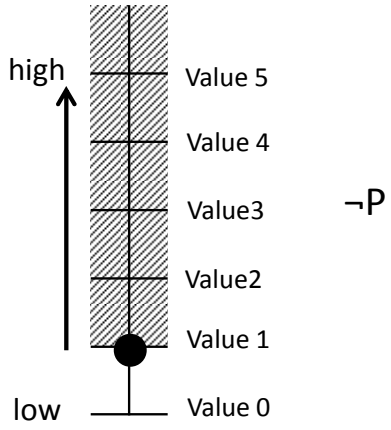


Figure 4.13: A scalar model of minimizer NPIs

Since the value of the scale of a quantity expression is not specified, its related inferences rely heavily on the environment where it occurs. The constructional analysis can characterize the construction-determined property. For example, expressions of small quantity, such as 'one'-phrases, have different interpretations in different environments. If a 'one'-phrase occurs in a scale reversing construction, it functions as a negation reinforcer. The analysis involving a scalar model also offers an answer to why an expression of small quantity lacks an emphatic function in affirmative environments. If a small quantity appears in a scale preserving construction, its coverage of scalar inferences only has a relatively small range, namely only from the small value in question to the bottom.

In analyzing the preverbal minimizer as a grammatical construction in the framework of Construction Grammar, the approach in principle allows the fact that the construction is non-compositional in some aspects. The construction is semantically non-compositional in the sense that at least some aspects of the meaning are not from the predictable sum of the lexical meanings of the components. For example, in Mandarin Chinese the object in this construction must be in focal prominence. Due to the constructional focus, the 'one'-phrase evokes quantity-scale, inducing scalar inferences. Since the object-focus is not guaranteed in VO order, the scalar reading must therefore be inherent in this particular syntactic and prosodic configuration of the OV construction. The semantic idiosyncrasy of the preverbal minimizer construction, however, does not lead to the conclusion that its relationship between form and meaning is random. On the contrary, the construction is syntactically, semantically, and pragmatically motivated because its relevant properties appear elsewhere in the Chinese grammar.

Specifically, the preverbal minimizer construction is also semantically compositional in the sense that the meaning of each component passes up to the whole construction. Each of the components, such as a quantity expression, negation, and a verb, contributes their attributes to the whole construction through unification. Regarding the syntactic properties, the construction is entirely composed of syntactic constructions which are frequently found elsewhere, such as the OV construction and the NPI licensing construction. Since the preverbal minimizer construction inherits a general and frequent syntactic construction, the OV construction, speakers of Mandarin Chinese know based on generalizations that its function is to place a constituent with a focal designatum in a non-canonical object position. Therefore, the preverbal minimizer construction is pragmatically motivated in the sense that it manifests the general information-structure

principle governing the distribution of Mandarin Chinese phrasal structure to achieve a pragmatic effect.

The analysis of the preverbal minimizer construction as a pragmatically motivated syntactic configuration is in favor of the view that pragmatics directly interacts with syntax, semantics, and prosody rather than being part of a discrete component in discourse.

4.3.3.2 DOU and YE in scalar constructions

The preverbal minimizer construction is compatible with DOU and YE both syntactically and semantically. Regarding syntax, they both co-occur with the OV construction. With respect to semantics, the preverbal minimizer construction and the two particles are both relevant to alternatives. Specifically, the scalar model of the preverbal minimizer construction needs different alternatives to be ordered on a scale for inducing inferences, while the main function of DOU and YE is to operate on a set of alternatives or members relevant to their associated constituent. The Mandarin scalar constructions have constructional focus on the preverbal object. This focused element evokes a scale for scalar inferences. Since DOU and YE are focus-sensitive particles as discussed in Section 4.3, it is natural that they came to be associated with the Mandarin focus constructions. The compatibility of DOU and YE and the preverbal minimizer construction in terms of form and function may increase the frequency of their unification, as evidenced in the data of Early Mandarin Chinese. The data show that it is highly possible that the scalar function DOU and YE started from the preverbal minimizer construction. When DOU or YE occurred in the preverbal minimizer construction, the construction imparted its meaning to DOU or YE. The diagram in Figure 4.14 represents the involvement of DOU or YE with the preverbal minimizer construction. The occurrence of DOU or YE does not produce conflicts in the process of unification. Instead, it fits the syntactic and semantic characteristics of the whole construction. The unification represented by arrows ensures that the piece of linguistic material matches at different levels of phrasal structures in different types of properties, such as syntax and semantics. The crucial property inherited from the OV construction is object-focus, which triggers alternations. The presence of a small-quantity expression induces a set of ordered alternations, which are the sources of scalar inferences. In sum, the pragmatics of the whole construction is determined by its inherited construction and the contribution from the components.

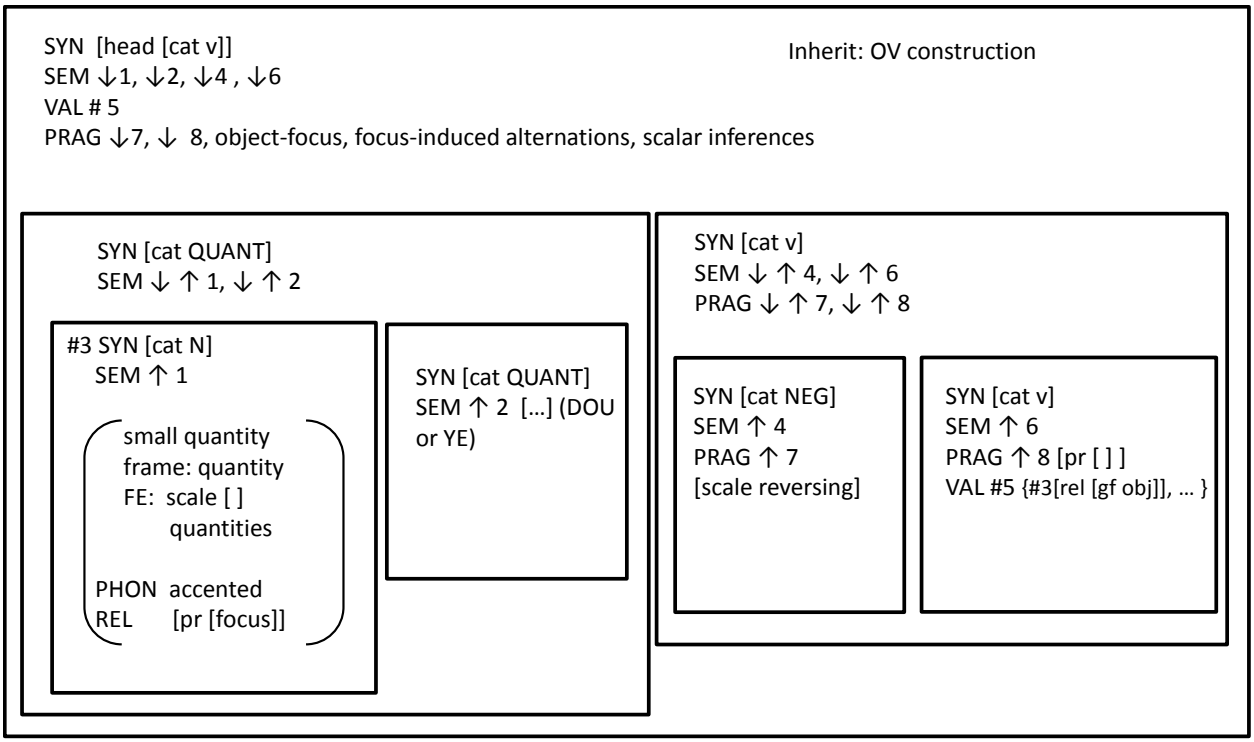


Figure 4.14: DOU and YE in the preverbal minimizer construction

A relatively full representation of the construct *yí jù huà dōu bù shuō* 'didn't say even a word' is shown in Figure 4.15. Internally, the outer box contains two major constituents, the quantifier phrase and the negation phrase, which are again internally complex. The instantiation of the preverbal minimizer construction shows that the meaning of the construction comes from the compositionality of the components and it also inherits from the OV construction.

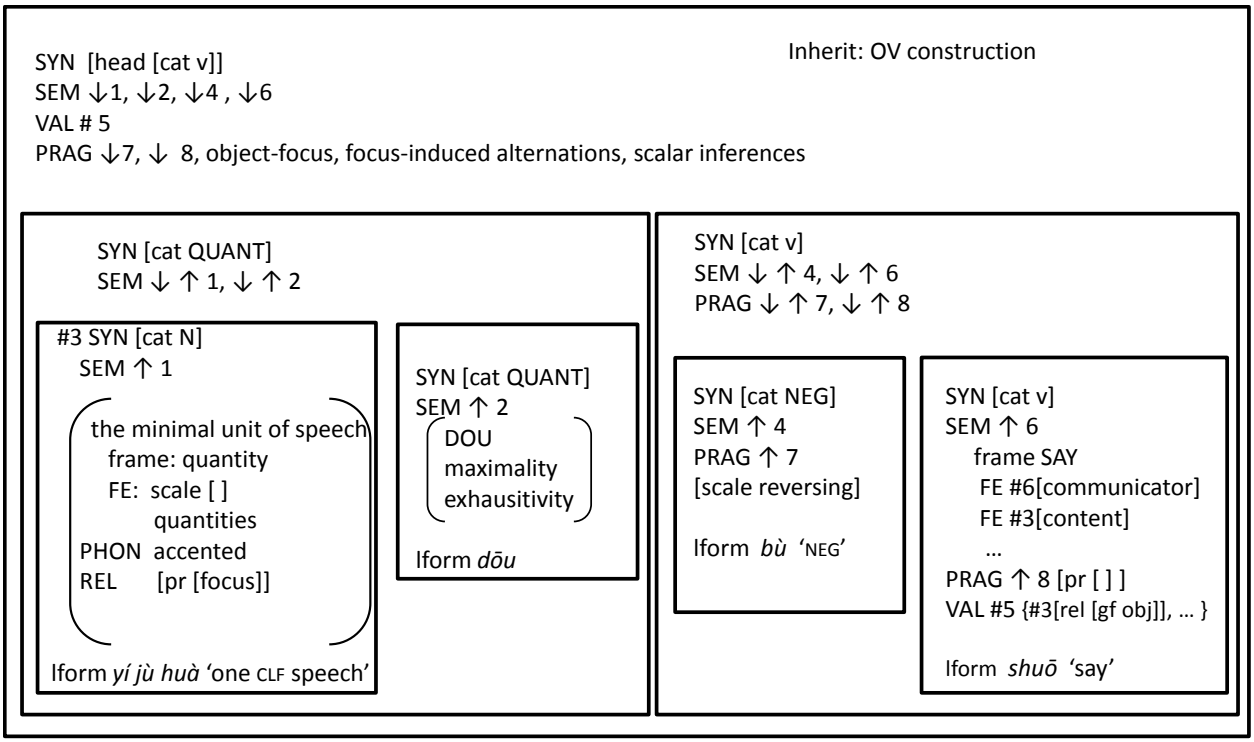


Figure 4.15: Representation of the preverbal minimizer construction with DOU

The OV construction provides the environments for DOU and YE to develop as an independent scalar particle. The interpretive mechanism of the combination of DOU and YE in the preverbal minimizer construction is analogous to the way that argument-structure constructions which are not lexically filled impart their meanings to the verb-complement sequences discussed in Goldberg (1995). For example, in her classic example *She sneezed the napkin off the table* the intransitive verb *sneeze* is claimed to take an additional argument due to the construction-specific meaning: a caused-motion construction, which is typically instantiated by sentences such as *She pushed the chair against the wall*. The verb *sneeze* can be said to inherit the caused-motion interpretation from the construction where it occurs. In a similar vein, DOU and YE have taken on a construction-specific scalar reading by virtue of its occurrence in the preverbal minimizer construction. The frequent co-occurrence of the preverbal construction and DOU and YE makes scalar meaning part of the semantics in DOU and YE. The compatibility in semantics and the resemblance in syntactic configuration attract DOU and YE to become involved in the preverbal minimizer construction.

It is worth noting that when DOU and YE occur in the preverbal minimizer construction, their semantic differences are minimized. For example, the minimal pair of (97) and (98) for Mandarin native speakers have almost the same meaning. The subtle difference is that the DOU one is slightly stronger in terms of emphasis, with an additional exhaustive reading such as all, entirely, or totally.

(97) 一滴水都沒喝

yì	dī	shuǐ	**dōu**	méi	hē
one	MW	water	DOU	NEG	drink

'didn't drink even a drop of water'

(98) 一滴水也沒喝

yì	dī	shuǐ	**yě**	méi	hē
one	MW	water	YE	NEG	drink

'didn't drink even a drop of water'

Note that DOU and YE have different meanings in either VO or OV order, as discussed earlier in Section 4.3.2. Their semantic distinction is dramatically reduced when they occur in a scalar environment. The lost semantic contrast reflects the fact that the meanings of DOU and YE are determined by the construction where they appear. More specifically, the scalar reading of DOU and YE is inherited by the preverbal minimizer construction. The meaning of the whole construction is more salient than the meanings of its individual components. However, an additional difference can still be detected between DOU and YE in the OV construction although they can alternate in most cases. The subtle difference is that in the same scalar environment the clause with DOU is judged to be more emphatic. This is due to their lexical differences: DOU imposes exhaustivity, but YE does not. The constructional analysis in Figure 4.15 accounts for the disappearance of the semantic contrast of DOU and YE but also respects their semantic idiosyncrasy. The construction as a whole has its own semantic properties as specified in the outermost box. Hence the reading of individual components is not as salient as that of the whole construction. On the other hand, the semantics of each component is integrated through unification. The attributes of DOU and YE can pass up to the whole construction, as indicated by the upward and downward arrows. Since DOU and YE have different semantics, they have different semantic contributions to the whole construction.

In addition to the preverbal minimizers, the other scalar condition that makes DOU and YE interchangeable is *lian* 'even'. *Lian* 'even' emerged around Early Mandarin Chinese, later than the preverbal minimizer construction. The occurrence of *lian* 'even' in a sentence guarantees a scalar reading. However, *lian* 'even' cannot be used alone. It must occur with DOU or YE to flank the element to be modified. Its syntactic position is therefore constrained by that of DOU or YE. For example, in SVO order, it can only modify the subject, as in (99). If *lian* 'even' modifies the object, then the OV construction must be involved, as shown in (100).

(99) 連我也/都想看這本書

lián	[wǒ]	**yě/ dōu**	xiǎng	kàn	zhè	běn	shū
even	I	YE/ DOU	want	read	this	CLF	book

'Even I want to read this book.'

(100) 我連這本書也/都想看

wǒ **lián**	[zhè	běn	shū]	**yě/ dōu**	xiǎng	kàn
I even	this	CLF	book	YE/ DOU	want	read

'I want to read even this book.'

More specifically, the dependence of *lian* 'even' on DOU and YE shows that it is a later addition to them. Since DOU and YE have developed more than one reading, the addition of *lian* 'even' helps to disambiguate by imposing the scalar reading. When *lian* 'even' occurs, the NP associated with DOU or YE does not have to be an element which tends to induce scalar inferences. As shown in (101), 'Chinese chess' is not scalar in nature, but *lian* 'even' creates scalar inferences relevant to it.

(101) 連象棋也沒心情下了 [from ASACC]

lián	xiàngqí	**yě**	méi	xīnqíng	xià	le
even	Chinese chess	YE	NEG	mood	play	PTC

'(He) even has no mood for playing Chinese chess.'

In the later stage of Early Mandarin Chinese, there are even some cases where *lian* 'even' appeared in the preverbal minimizer construction although the construction is already scalar in nature. As shown in an example from Early Mandarin Chinese (102), *lian* 'even' couples with the preverbal minimizer construction.

(102) 連一壺茶都不肯拏出來 [from ASACC]

lián	[yì	hú	chá]	**dōu**	bù	kěn	ná	chū	lái
even	one	pot	tea	dou	NEG	can	take	out	come

'(His family) is not willing to provide even a pot of tea.'

The involvement of *lian* 'even' again shows that meaning of DOU and YE is determined by the environments where they dwell. If they appear in a scalar construal, they are infused with a scalar reading.

The constructional analysis in this section attempts to explain why DOU and YE came to be scalar particles and how 'one'-phrases as minimizers contribute to the development. The information structure of the OV construction bridges DOU or YE and the preverbal minimizer construction. Their frequent co-occurrence allows the preverbal minimizer construction to impart the scalar reading to DOU and YE.

4.4 Summary of the Emergence of Scalar Particles in Mandarin Chinese

The constructions that share a particular feature form clusters of mutually related generalizations. In the case of Mandarin Chinese, the different types of OV constructions form a network of related and often overlapping grammatical patterns. The OV constructions all carry object focus, which differs from the focus type of the canonical word order, VO. Through inheritance, the relationship between the general OV construction, the preverbal minimizer construction, and the O-DOU-V/ O-YE-V construct can be characterized as a hierarchical network. The network reflects not only linguistic facts but also how generalization of patterns is made.

DOU and YE are compatible with the preverbal minimizer construction regarding syntactic, semantic, and pragmatic properties. The diachronic analysis in terms of the inheritance relationship shows that the preverbal minimizer construction, which is scalar in nature, provides the crucial environment for DOU and YE to become associated with a scalar reading.

The frequency of the co-occurrence of DOU or YE and the preverbal minimizer construction has increased over time. In Modern Mandarin, when 'one'-phrases appear in the preverbal object position, the appearance of DOU or YE has even become obligatory. The correlation of scalar reading, focus, and additive particles can be observed in the emergence of DOU or YE in the preverbal minimizer construction. The addition of scalar particles to 'one'-phrases as minimizers can also be found in other numeral classifier languages, as mentioned in the beginning of the chapter. The diachronic analysis of DOU and YE can explain the association between additive particles and NPIs, which may shed light on the studies of this areal feature.

Chapter 5

‘One’-phrases as Minimizers in Numeral Classifier Languages

The numeral ‘one’ is used for expressing not only quantity but also indefiniteness. Indeed, it is a common source of indefinite pronouns and indefinite particles, as reported in Haspelmath’s (1997) typological study. In many languages, the quantity and non-quantity functions have developed different forms. Such a case is English, in which there is a distinction between the numeral one and the indefinite marker a. However, Mandarin Chinese lacks such a division and thus Mandarin ‘one’-phrases are responsible for expressing both quantity and non-quantity meanings. Their functions include enumeration, reference, downtoning, and emphasis. The various functions are not purely functions of the lexical form, but depend heavily on the constructions where they appear for specification. For example, as observed in Chapters 2 and 3, Mandarin ‘one’-phrases as minimizers have a tendency to appear in the OV construction. This diachronic development has the desirable result of fully distinguishing the minimizer reading from the other readings of the ‘one’-phrases. The issue of how ‘one’-phrases as minimizers have developed in Mandarin Chinese also brings up a noteworthy issue about licensing minimizers. Negation is a necessary but not sufficient condition to distinguish the minimizer function from other functions. A ‘one’-phrase under the scope of negation does not necessarily lead to a minimizer reading. However, if ‘one’-phrases in a negative environment are in focus, an NPI reading is guaranteed. The diachronic development of Mandarin ‘one’-phrases as minimizers connects three important elements of emphatic NPIs: focal prominence, negation, and expression of minimal quantity.

‘One’-phrases are employed as minimizing constructions in other numeral classifier languages as well, such as Japanese and Korean. Like Mandarin Chinese, these numeral classifier languages lack articles, either definite or indefinite. The actual meaning of their ‘one’-phrases has to be determined by the constructions in which they occur. Interestingly, in both Japanese and Korean when ‘one’-phrases are used as minimizer NPIs, they are necessarily accompanied by markers which are sensitive to focus. This requirement also supports the claim that negation alone is not a sufficient condition for ‘one’-phrases to be interpreted as minimizer NPIs. This chapter will offer a comparison of ‘one’-phrases as minimizers in Mandarin Chinese, Japanese, and Korean in order to show that minimizer NPIs behave similarly in numeral classifier languages. ‘One’-phrases require the same conditions to be interpreted as minimizer NPIs although strategies among these languages vary.

The analysis in this chapter makes a crucial connection between word order and the NPI interpretations of Mandarin ‘one’-phrases. I will show how the information structures of VO and OV determine the scope of minimizers and the types of NPIs. First, the division of VO and OV can properly distinguish ‘one’-phrases as strong NPIs and weak NPIs. VO is compatible with the interpretations of both strong and weak NPIs, while OV allows only the interpretation of strong NPIs. Second, ‘one’-phrases as minimizers in VO can only give rise to a quality-contrast reading, whereas ‘one’-phrases as minimizers in OV allow quality-contrast as well as kind-contrast

readings. Third, OV allows variations of ordering within numeral phrases for profiling different scopes of focus, while VO does not allow such variations of ordering. These contrasts support my argument that information structure is an important determinant in shaping the interpretations of 'one'-phrases.

Section 5.1 will examine how 'one'-phrases as minimizer NPIs behave in different numeral classifier languages. The same set of core properties of the minimizer can be found in different numeral classifier languages. This will be discussed in Section 5.2, where special attention will be paid to the relation between scalarity and prosodic prominence. In Section 5.3, contextual variations in the readings of 'one'-phrases in Mandarin, Japanese, and Korean will be compared to show how the meanings of 'one'-phrases are determined by different constructions. 'One'-phrases are special in that they from a distinctive class of NPIs. Section 5.4 will discuss their special status from two properties: strictness of licensing and various types of scalarity. A brief summary of the 'one'-phrases in numeral classifiers will ensue in Section 5.5.

5.1 Similarities of 'One'-phrases as Minimizers in Numeral Classifier Languages

Mandarin Chinese is known for the use of numeral classifiers. As shown in Chapter 2, the numeral classifiers came into play around Middle Chinese. Modern Mandarin 'one'-phrases share the same pattern with a general numeral expression, where the classifier follows the numeral and precedes the noun. As noted by Zhang (2013), there is no variation in word order for the three components in a numeral phrase. In addition, the three elements stick together without allowing other functional elements to intervene between the components of a numeral expression (Zhang 2013). Yet although interventions are generally not allowed, there are some exceptions. For instance, intervention of adjectival modifiers is allowed, as in (1) and (2). Also, the modifying phrase containing the associate predicate DE can appear between the classifier and the noun as in (3).

(1) 五大頭牛
wǔ dà tóu niú
five big CLF cow
'five big cows'

(2) 五頭大牛
wǔ tóu dà niú
five CLF big cow
'five big cows'

(3) 三隻可愛的貓
sān zhī kěài de māo
three CLF adorable ASSOCIATE PTC cat
'three adorable cats'

In Modern Mandarin, when 'one'-phrases as minimizers are a grammatical object, they can occur in two positions, resulting from diachronic word order changes as discussed in Chapter 2. An asymmetry concerning an additional marker can be observed in the two positions. As

shown in the contrast of (4) and (5), where yi-phrase is the grammatical object of the transitive verb *shèng*,the preverbal minimizer requires a scalar particle, whereas the postverbal one does not. The involvement of a scalar particle in the OV order is a later development in Mandarin Chinese. The scalar particle overtly specifies the type of focus in the preverbal object position and introduces a set of alternatives related to the denotation of the 'one'-phrase for inducing scalar inferences, as discussed in Chapter 4.

(4) 八棵樹被鋸到不剩一片樹葉 [from *Chinese Gigaword*]

bā	kē	shù	bèi	jù	dào	bù	shèng	[yí	piàn	shùyè]
eight	CLF	tree	PASS	saw	ASP	NEG	remain	one	CLF	leaf

'The eight trees were sawed to the point that it did not even maintain a single leaf'

(5) 八棵樹被鋸到一片樹葉都不剩

bā	kē	shù	bèi	jù	dào	[yí	piàn	shùyè]	**dōu**	bù	shèng
eight	CLF	tree	PASS	saw	ASP	one	CLF	leaf	DOU	NEG	remain

'The eight trees were sawed to the point that it did not even maintain a single leaf.'

The co-occurrence of scalar particles with minimizing 'one'-phrases is not only observed in Mandarin Chinese. The same phenomenon is also found in other numeral classifier languages, such as Japanese, Korean, Malay, and Burmese. In these numeral classifier languages, numeral expressions have the same components as those in Mandarin: a numeral, a classifier, and a noun. However, their 'one'-phrases are different from those in Mandarin in two ways. First, they have variations in word orders which lead to different interpretations. Second, they allow case markers to intervene between the three elements. For instance, the Japanese example in (6) shows that the numeral expression allows the intervention of case markers.

(6) Japanese

Mio-wa	kooen-de	[neko-o	ip-piki]mi-ta
Mio-TOP	park-at	cat-ACC	one-CL see-PST

'Mio saw one cat in the park.'

With respect to the usage of 'one'-phrases as minimizers, although Mandarin 'one'-phrases as minimizers require a scalar particle only in certain syntactic positions, in other numeral classifier languages, it is obligatory for 'one'-phrases to be marked by a focus-sensitive marker. Section 5.1.1 will introduce how 'one'-phrases are used as minimizers in different numeral classifier languages. The 'one'-phrases as minimizers in a great number of numeral classifier languages have to be marked by particles. Notably, these particles have all developed from a similar source. A discussion of the particles related to minimizers in Mandarin, Japanese, and Korean will be offered in Section 5.1.2.

5.1.1 Formation of 'one'-phrases as minimizers

'One'-phrases are the main source of minimizers in numeral classifier languages. Negation is a canonical condition for the 'one'-phrases to be interpreted as minimizer NPIs, but it is not sufficient. The 'one'-phrases also need to occur with a specific type of particle to be used as emphatic NPIs. For example, the 'one'-phrases in (7) and (8) are employed as minimizer NPIs in Japanese, where the particle MO obligatorily attaches to the 'one'-phrases as a whole regardless of the difference in internal orders. The particle MO is claimed to be ambiguous

between an additive 'also' reading and a scalar 'even' reading (Nakanishi 2006), which will be detailed in Section 5.1.2.

(7) Japanese
Mio-wa kooen-de [neko-o ip-piki-**mo**] mi-nakat-ta
Mio-TOP park-at cat-ACC one-CLF-MO see-NEG-PST
'Mio didn't see any cats in the park.'

(8) Japanese
[it-teki-no koohii-**mo**] noma-nakat-ta
one-drop-GEN coffee-mo drink-NEG-PST
'I didn't drink a drop of coffee.'

Korean 'one'-phrases as minimizers similarly require the co-occurrence of a particle. As shown in (9) and (10), the 'one'-phrases referring to the smallest atomic unit or to the minimal amount are marked by TO. Without this accompanying particle TO, the 'one'-phrases cannot be interpreted as minimizer NPIs. The particle TO is claimed to be a concessive marker by Lee (2006). Although Korean TO and Japanese MO are given different labels in the literature, the two particles behave alike both semantically and syntactically and they have been viewed as focus-sensitive particles due to the fact that their associated NPs carry focal prominence.

(9) Korean
na-nun kongwon-eyse [kangaci han-mali-**to**] po-ci-mos-ha-yss-ta
I-TOP park-LOC dog one-CLF-TO see-CONN-NEG-do-ANT-DECL
'I didn't see any dogs in the park.'

(10) Korean
na-nun [mwul han-pangwul-**to**] masi-ci-anh-ass-ta
I-TOP water one-drop-TO drink-CONN-NEG-ANT-DECL
'I didn't drink a drop of water.'

'One'-phrases are also the main source of minimizer NPIs in Malay. The combination *se* 'one'-classifier-(noun)-*pun* is pervasively used as an NPI (Mustafa 2006). As shown in (11), with the occurrence of the marker *pun*, the 'one'-phrase designating the minimal unit of a cake is used as a negation reinforcer. The classifier in (12) helps to delimit the smallest atomic unit of the uncountable noun. The combination of the numeral 'one' and the classifier with the maker *pun* without a noun is also productively used as a minimizer NPI.

(11) Malay (data from Mustafa 2006: 78)
[se-biji kuih] **pun** tidak terjual hari itu
one-CLF cake PUN NEG sell day that
'Not a cake was sold that day.'

(12) Malay (data from Mustafa 2006: 78)
Ali tidak pandai bercakap Bahasa Jepun [se-patah] **pun**
Ali NEG master speak Japanese one-CLF PUN
'Ali cannot speak even a word of Japanese.'

Pun is labeled as an emphatic marker by Mustafa (2006). Notably, the marker *pun* is similar to Japanese MO and Korean TO in that it functions both as an additive particle and as a scalar particle. *Pun* in affirmative contexts is interpreted as an additive particle like English *also*. As shown in (13), the marker *pun* adds one more proposition to the sentence.

(13) Malay (data from Mustafa 2006: 77)
Kalai encik abu datang, pekerja-pekerja-nya **pun** akan datang juga
if mister Abu come RED-employee-his PUN FUT come also
'If Mr. Abu comes, his employees will also come.'

If *pun* appears with an expression of a small quantity in negative environments, it introduces scalarity similar to the function of English *even* (Mustafa 2006). For example, the use of *pun* plus a 'one'-phrase in (14) implies that if the smallest degree of the instantiation of the predicate is not possible, it entails that any higher degrees are also impossible.

(14) Malay (data from Mustafa 2006: 78)
dia tidak tidur [se-minit] **pun** sejak semalam
he NEG sleep one-minute PUN since last night
'He didn't sleep at all.' lit. 'He has not slept a minute since last night.'

The combination of *pun* with expressions of a minimal quantity is a productive morphological strategy to achieve emphatic negation. *Pun* can attach to a variety of minimal expressions such as *sedikit* 'a little bit' to form minimizer NPIs, as shown in (15). The word *sedikit* 'a little bit', which also contains the numeral 'one' *se*, has become a fixed expression used specifically as a minimizer NPI.

(15) Malay (data from Mustafa 2006: 79)
dia tidak mengalihkan [se-dikit] **pun** matanya
he NEG move a little bit PUN his eyes
'He didn't move his eyes away even a little bit.'

The same formation of minimizer NPIs can also be observed in Burmese, another classifier language. Burmese indefinite expressions require classifiers (Vittrant 2005) and 'one'-phrases are examples of such. 'One'-phrases have multiple functions in Burmese. When the numeral 'one' is followed by a reduplicated classifier, the combination can form an indefinite expression to mean someone/something or anyone/anything (Vittrant 2005), as shown in (16).

(16) Burmese (data from Vittrant 2005: 136)
/tə yɔʔ yɔʔ la Mɛ/
one CLF(human) CLF(human) come MOD
'Someone will come.'

In a similar way, Burmese negative indefinite expressions require the numeral 'one' with the appropriate classifier followed by the particle MA. As shown in (17), the NPI is formed by the combination of 'one' and a classifier plus the particle MA. The expression functions as a negative indefinite (cf. English *anything*) or as a minimizer NPI. The formation of Burmese NPIs is not different from those in Japanese, Korean, and Malay.

(17) Burmese (data from Vittrant 2005: 136)

ton	ta	[te	khu]	**ma**	me	pe	phu
ask	NOM.REALIS	one	CLF	MA	NEG	give	NEG

'He gives nothing (even not a thing) of what is asked for.'

The discussion thus far shows that 'one'-phrases in these numeral classifier languages have much in common. First, the 'one'-phrases as indefinites can have multiple functions; particularly, they are widely used as minimizer NPIs. The minimizers in numeral classifier languages are frequently composed of only the numeral 'one' and a classifier without a noun because numeral classifiers already contain enough information as to the gestalt shape or size of its denotatum. Second, when the 'one'-phrases are used as minimizer NPIs, they not only occur in a negative environment but are accompanied by a focus sensitive particle. Since the particles are the crucial element in determining the NPI reading of 'one'-phrases, their functions need further discussion. A comparison of the particles in Mandarin, Japanese, and Korean is laid out in the next section.

5.1.2 Semantic range of particles occurring in minimizer constructions in numeral classifier languages

In Modern Mandarin Chinese, when 'one'-phrases as minimizers appear in the preverbal object position, they require the co-occurrence of DOU or YE. The issues of the sources of the two particles and how they came to be associated with minimizers have been discussed in Chapter 4. To recapitulate, DOU mainly functions as a universal quantifier and YE functions as an additive particle, but they overlap in their use as scalar particles. Their scalar function has developed from the frequent collocation with minimizers. They are compatible with minimizers because they evoke alternatives related to the focused element for inducing scalar inferences. In Japanese and Korean, the particle required to appear with 'one'-phrases as minimizers also cover a similar range of functions which are shared by Mandarin DOU and YE, as will be compared below.

Japanese MO has various functions including an additive particle, a scalar particle, and a distributive marker. It can also form universal quantifiers with indefinite pronouns. These functions are divided between YE and DOU in Mandarin. Japanese MO is equivalent to Mandarin YE in its functions as an additive particle and a scalar particle. The NP that MO attaches to is interpreted as focus (Szabolcsi et. al 2013). The two functions of Japanese MO can be distinguished by intonation (Nakanishi 2006). When Japanese MO functions as an additive particle as in (18), no special prosody is required.

(18) Japanese

Mio-wa	[Kei]-mo	mi-ta
Mio-TOP	Kei-MO	see-PST

'Mio saw Kei, too.'

If Japanese MO is used as a scalar particle, its associated NP obtains a focal stress, as in (19). MO in this environment induces focus-related scalar presuppositions. Similar to English sentences with even, sentences with mo presuppose that its ordinary denotation is the most unlikely proposition in its focus set. In (19), the speaker presupposes that Kei is the least likely person to see among all the people in the relevant context.

(19) Japanese
Mio-wa [Kei]$_F$-mo mi-ta
Mio-TOP Kei-MO see-PST
'Mio even saw Kei.'

Similarly, in Modern Mandarin, the placement of stress determines the reading of YE. With the appropriate stress and context, Mandarin DOU can also function as a scalar particle even though it lacks the additive function.

On the other hand, Japanese MO is analogous to Mandarin DOU in another set of functions. Both of them can form universal quantifiers with indefinites and can be used as distributive markers. When Japanese MO is attached to an indefinite NP such as a *wh*-word as in (20), the combination yields a universal generalized quantifier. Mandarin DOU functions analogously. As shown in (21), DOU form a universal quantifier with a *wh*-word. Japanese MO can also produce a distributive reading, as in (22). MO imposes a strictly distributive reading, and therefore (22) does not allow a collective reading such as 'everybody bought one car altogether'. The Mandarin counterpart DOU functions analogously, as shown in (23), where DOU gives rise to distributive readings.

(20) Japanese [data from Szabolcsi et. al 2013: 32]
dare-**mo**-ga hohoen-da
who-MO-NOM smile-PST
'Everyone smiled.'

(21) 我肚子好餓，什麼都吃
wǒ dùzi hǎo è， shéme dōu chī
I stomach very hungry what DOU eat
'I am very hungry. I can eat whatever.'

(22) Japanese
dare-**mo**-ga ichi-dai-no kuruma-wo ka-tta
who-MO-NOM one-CLF-GEN car-ACC buy-PST
'Everyone bought a car.'

(23) 他們都買了一棟房子
tāmen dōu mǎi le yí dòng fángzi
they DOU buy PFV one CLF house
'They all bought a house (*together).'/ Each of them bought a house.

Japanese MO plays an important role in the formation of NPIs. For example, when the indefinite *nani* 'what' is marked by the particle MO, the phrase behaves as an NPI, as shown in (24).

(24) Japanese
nani-mo sira-nai
what-MO know-NEG
'I do not know anything.'

In a similar vein, Japanese minimizer NPIs are formed by indefinite expressions of small quantity marked by MO. As shown in (25), the attachment of MO to the 'one'-phrase results in

scalar inferences. 'One'-phrases are the most productive type of small-quantity expressions in Japanese and 'one'-phrases as minimizers are an open class since the template can be filled by various unit words and nouns. For example, the 'one millimeter' plus MO in (26) is used to emphasize that the speaker did not think about a certain event for the slightest degree. The 'one millimeter' is not used in its canonical measuring function for length; rather, the concept of minimal quantity is used as an anchor on a scale for inducing scalar effects. In Japanese, there are some fixed expressions of minimizers, which also contain the particle MO. As shown in (27), *chittomo* as a whole is strictly viewed as a unit since the minimal expression *chitto* 'a little bit' can no longer be used alone. The fixed expressions show that MO has become a crucial element specifically for scalar readings in the morphology of Japanese NPIs.

(25) Japanese
[ip-po]-**mo** yuzuru-na.
one-step-MO compromise-NEG
'Do not give way (to him) at all!' lit. 'Don't yield even one step!'

(26) Japanese
ichi-miri-**mo** omowa-nakat-ta-si
one-millimeter-MO think-NEG-PST-also
'I did not think of it at all, ….' lit. 'I did not think of it even for one millimeter.'

(27) Japanese
chitto-**mo** koe-wa todoka-nai
little-MO voice-TOP reach- NEG
'The voice does not reach there at all.'

The comparison of Japanese and Mandarin shows that Japanese MO has the important semantic characteristics of both Mandarin YE and DOU in that the three particles overlap in the function of forming NPIs and they can all attach to expressions of a minimal quantity such as 'one'-phrases to create emphatic NPIs.

The formation of Japanese minimizer NPIs is similar to that of Korean. In addition to appearing under negation, Korean 'one'-phrases or small-quantity expressions have to be marked by TO when they are used as minimizers, as shown in (28). The marker TO also attaches to other indefinites, such as *wh*-elements in order to form NPIs, as in (29).

(28) Korean
[han salam]-**to** an o-ass-ta
one person-TO NEG come-ANT-DECL
'Nobody came.'

(29) Korean
na-nun amu-**to**/ nwukuw-**to** an po-ass-ta
I-TOP any-TO who-TO NEG see-ANT-DECL
'I didn't see anybody.'

If 'one'-phrases are marked by other makers, the scalar effects cannot be observed even though the phrases are under negation. For example, the 'one'-phrase with a nominative marker is used

as an indefinite referential expression with a specific referent in (30). If the 'one'-phrase is marked by the contrastive topic marker as in (31), the 'one'-phrase is used to emphasize that one person and up to one person did not come (Lee 2006). It does not involve scalar reasoning.

(30) Korean
[han saram]-**i** an o-ass-ta
one person-NOM NEG come-ANT-DECL
'One person did not come.'

(31) Korean
[han saram]-**un** an o-ass-ta
one person-CT NEG come-PST-DECL
'(Whoever it may be,) one person did not come.'

Korean TO is claimed to be a concessive marker by Lee (2003), where concession is defined as going down to the lower bound for the most likely alternative on a contextually relevant scale of graded alternatives. This definition shows that Korean TO is similar to the scalar particle 'even'. Lee (2006) proposes that concession rather than focus is the key element for turning indefinites into minimizer NPIs based on the distinction between the contrastive topic (31) and the concessive marker (28). The NPs associated with both the contrastive topic and the concessive marker are in focus. According to Lee (2003), focus induces simple alternatives, whereas concession establishes the lowest bound of a scale. Specifically, the concession marker in (28) requires 'one' to be the lowest possible bound on a quantitative scale as expected in the discourse context. The combination denies propositions with any number greater than the lowest bound. However, focus is not completely irrelevant to scalar inferences. On the contrary, it is crucial in determining scalarity, which will be discussed in Section 5.3

The functions of TO discussed so far can also be found in Japanese MO. They are both used to form polarity items although Korean TO and Japanese MO are given different terminologies because most of the literature pertaining to Korean TO and Japanese MO relies on smaller subsets of data. Based on their great similarity, it is not surprising that Korean TO, like Japanese MO, can be used as an additive particle in addition to the function related to polarity items, as shown in (32).

(32) Korean
na-**to** koyangi-lul cohaha-y
I-TO cat-ACC like-INDIC
'I, too, like cats.'

Table 5.1 summarizes the functions of the markers attaching to 'one'-phrases as minimizers in Mandarin, Japanese, and Korean.

Table 5.1: Functional correspondences of minimizer markers in Mandarin, Japanese, and Korean

	Additive particle	**Scalar particle**	**Universal/ negative pronoun**	**Distributive marker**
Mandarin	YE	YE/DOU	Indefinite-ye/DOU	DOU
Japanese	MO	MO	Indefinite- MO	MO
Korean	TO	TO	Indefinite- TO	TO

The survey of the markers for minimizers above indicates that the overall distribution and interpretations of the particles in the three numeral classifier languages are extremely similar, particularly in the parallelism between Korean TO and Japanese MO. The salient difference is that these functions are divided between two particles in Mandarin Chinese. The comparison shows that the markers associated with 'one'-phrases as minimizers are used for the same core set of functions in their respective languages. They all have the property of introducing alternatives to their associated constituent, as discussed in the development of Mandarin DOU and YE in Chapter 4. This characteristic is the foundation to induce scalar inferences in minimizer NPIs. The involvement of the particles reflects that negation alone is not sufficient to license the 'one'-phrases as minimizers. Additional information is required in order to identify the actual reading of 'one'-phrases, which can have a wide array of interpretations.

5.2 Prosodic Prominence for 'One'-phrases as Minimizers in Numeral Classifier Languages

The use of 'one'-phrases as minimizer NPIs is a characteristic in numeral classifier languages. In addition to the usage of 'one'-phrases, the requirements for 'one'-phrases to be interpreted as minimizers are similar in these languages. As discussed in Section 5.1.2, the interpretation of these 'one'-phrases as minimizers arises when 'one'-phrases appear in environments with two conditions: negation and a scalar particle. Another property shared by the 'one'-phrases as minimizers in numeral classifier languages such as Mandarin, Japanese, and Korean is that they all bear focal stress or prosodic prominence.

As observed in Haspelmath (1997), sentence accent is a common type of surface manifestation of focus, which is often found in scalar-endpoint indefinites. Focus plays a crucial role in scalar phenomena. Focus can establish a relation between the value of a focused expression and a set of its relevant alternatives (König 1991). For example, English constituents have to carry sentence accent in order to refer to the endpoint of a scale[1]. This can be observed in superlatives (33), 'pragmatic superlatives'[2] (34), and free choice indefinites (35) (Haspelmath

[1] In English, bearing a sentence accent is also characteristic of other types of focus, such as contrastive focus and restrictive focus *only*.

[2] The pragmatic superlatives are not reflected in the morphology of superlative markers. They are the endpoints of a scale defined by contexts.

1997). If sentence accent does not fall on the small-capped elements in (33) and (34), the result is that the scalar interpretation disappears. Without an appropriate accent, the sentence containing free choice indefinite becomes very marginal, as in (35).

(33) She can solve the EASIEST problem.[3]

(34) The AMERICAN PRESIDENT would use the same solution.

(35) a. You may invite ANYONE.
b. ??You may INVITE anyone.

How prosodic prominence influences interpretations can also be observed in 'one'-phrases. When 'one'-phrases are interpreted as minimizers, they receive a focal stress for either the entire phrase or a part of the phrase. In this section, I will discuss the relation between scalarity and the stressed 'one'-phrases. The issue regarding the different elements of 'one'-phrases covered by a stress focus will be discussed later in Section 5.3.

In Mandarin Chinese, 'one'-phrases have multiple functions. It has been noted that 'one'-phrases are stressed when they are used as polarity items (Chao 1968). The stress is more salient for the 'one'-phrases as minimizers in the preverbal object position than in the postverbal position. Since focusing the preverbal nominal is the main function of Mandarin OV construction, it follows naturally that 'one'-phrases as minimizers in this position are more stressed. When Mandarin 'one'-phrases are used in a non-scalar reading such as a counting phrase or a specific indefinite, they normally do not bear a focal stress. As shown in (36), the sentence sounds odd if the non-scalar 'one'-phrase is stressed unless it is used for contrast.

(36) ?我想喝一杯水
?wǒ xiǎng hē [yì bēi shuǐ]$_{\text{stressed}}$
I want drink one glass water
'I want to drink a glass of water.'

The focal stress on 'one'-phrases serves as a parameter to distinguish different functions of 'one'-phrases in Mandarin.

Similarly, when Japanese 'one'-phrases are used as minimizers, they have a different prosodic pattern. For instance, the same 'one'-phrase attached by MO in (37) and (38) differ greatly in the prosodic pattern. In (37), the 'one'-phrase with a scalar reading bears an emphatic stress. In contrast, the 'one'-phrase in (38) has no scalar interpretation. It is neutral in prosody. Moreover, the MO attached to the non-scalar nominal has to be understood as an additive particle instead of a scalar particle.

(37) Mio-wa [ip-piki-no neko]- **mo** mi-nakat-ta
Mio-TOP one-CLF-GEN cat -MO see-NEG-PST
'Mio didn't see a cat.'

[3] The location of sentence accent is marked in small caps.

(38) Mio-wa ip-piki-no inu-o mi-ta soreto [ip-piki-no neko]-**mo** mi-ta
Mio-TOP one-CLF-GEN dog-ACC see-PST in addition one-CLF-GEN cat-MO see-PST
'Mio saw a dog, and she also saw a cat.

The distinctive prosodic pattern on minimizers makes a clear distinction between scalar and non-scalar 'one'-phrases. The same association between 'one'-phrases as minimizers and a stressed prosodic pattern is also found in Korean. When 'one'-phrases are attached by the scalar particle TO in negative environments, the stressed prosodic pattern is substantially different from 'one'-phrases used as a referential expression.

The 'one'-phrases as minimizers in different languages share the same prosodic saliency because prosodic prominence is an indicator of focal prominence. Since 'one'-phrases are polysemous in nature, they are interpreted as minimizers only when certain specific requirements are met. In other words, 'one'-phrases are relatively indeterminate. They have to acquire their meaning from a construction in systematically related ways. The construction for 'one'-phrases to be interpreted as minimizers in numeral classifier languages is summarized in Figure 5.1. Each component has a different contribution toward the emphatic effect. The 'one'-phrase evokes a relevant scale based on the unit specified by the classifier. In addition, the numeral 'one' refers to the endpoint of a scale. Negation reverses the direction of processing a canonical scale to cover as many contrasting alternatives as possible. The focused 'one'-phrase is used to contrast with other alternatives. With one end of a scale defined by the numeral 'one', it implies that the set of alternatives on a scale are fully ordered. The construction as a whole induces scalar inferences of minimizers. The function of 'one'-phrases can thus be specified from the entire construction.

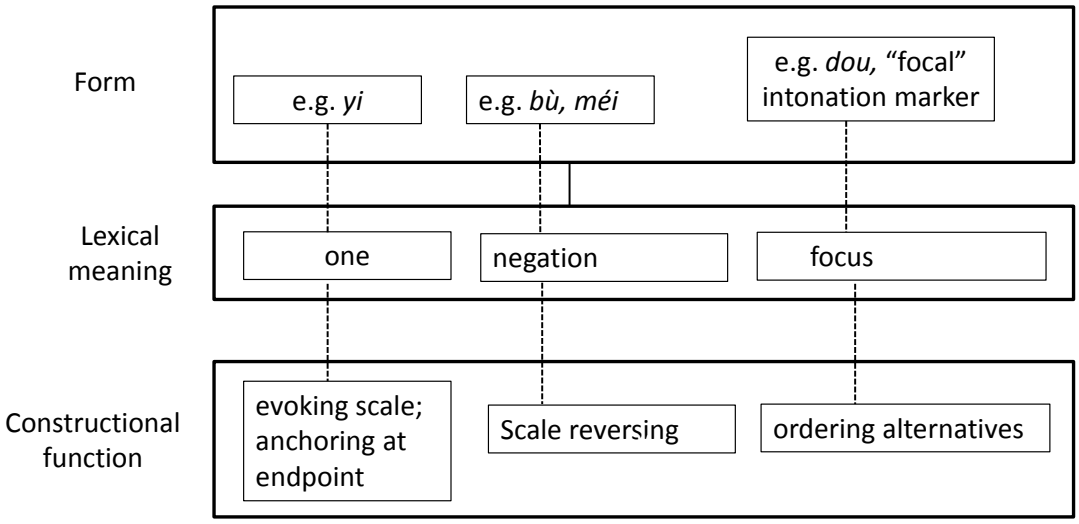


Figure 5.1: Schematic construction for 'one'-phrases as minimizers

Since the actual reading of 'one'-phrases is constrained by syntactic, semantic, and phonological conditions of the constructions in which they appear, a follow-up question is then: how do constructional variations influence the interpretations of minimizers? The discussion with respect to the contextual variations will be discussed in Section 5.3.

5.3 Contextual Variations in Readings of 'One'-phrases in Mandarin, Japanese, and Korean

Numeral phrases in Mandarin, Japanese, and Korean have two characteristics. First, they lack indefinite and definite articles. The properties of definiteness and specificity of indefinite NPs depend on the syntactic positions where they occur. Second, the numeral phrases contain classifiers. That is, 'one'-phrases have three components: a numeral 'one', a classifier, and a noun. The word order of the three components can influence the scalar inferences of 'one'-phrases as minimizers. In this section, I will discuss how the contextual variations in the readings of indefinites constrain the distribution of 'one'-phrases as minimizers in Mandarin, Japanese, and Korean.

5.3.1 Influences of positional variations and word order in 'one'-phrases as minimizers in Mandarin Chinese

Mandarin indefinites are interpreted differently in different syntactic positions. The constraints of interpreting indefinites can also be applied to 'one'-phrases, which are indefinites as well. 'One'-phrases as minimizers behave differently when they appear in different syntactic positions. The issue of how requirements for 'one'-phrases to be used as minimizers vary with syntactic positions will be discussed in Section 5.3.1.1. An asymmetry can be observed between preverbal and postverbal 'one'-phrases. Moreover, 'one'-phrases as minimizers in the postverbal and in the preverbal positions can lead to different sets of scalar inferences. The variation in these interpretations will be discussed in Section 5.3.1.2. In Section 5.3.1.3, the discussion moves on to the scope of minimizers and how it correlates with the word order of the three components of 'one'-phrases.

5.3.1.1 Positional variation in interpreting 'one'-phrases in Mandarin Chinese

Indefinite NPs have various ways of referring to a referent, as observed by Prince (1989). Under different conditions, indefinite NPs may yield various readings including specific, generic, non-specific, and NPI as shown in (39).

(39) Different ways to refer to a referent by indefinite NPs
   a. *A body* was found in the river yesterday. [specific]
   b. *A tiger* has stripes. [generic]
   c. I never saw *a two-headed man*. [non-specific]
   d. He won't say *a word*. [negative polarity item]

Although Mandarin lacks indefinite and definite articles, it does not prevent bare nouns from being interpreted with different readings; this is because the readings of bare nouns can be determined by their structural positions (Huang et al. 2009). A bare noun in the subject position can have either a generic reading as in (40) or a definite reading as in (41), but an indefinite reading is barred in this position. Bare nouns can have an indefinite reading when they appear in the postverbal object position, as in (42).

(40) 貓很可愛 [generic]
māo hěn kěài
cat very cute
'Cats are cute.'

(41) 貓跑走了 [definite]
māo pǎozǒu le
cat run away PFV
'The cat has run away. / The cats have run away.'

(42) 我看到貓 [indefinite]
wǒ kàn-dào māo
I see-RES cat
'I saw a cat/ cats.'

Mandarin Chinese does not permit an indefinite nominal expression in subject or topic position. The requirement of definiteness in the two syntactic positions is also reflected in the reading of bare nouns. For example, the bare noun in the subject position as in (43) or in the topic position as in (44) must receive a definite reading.

(43) 貓吃了蛋糕
māo chī le dàngāo
cat eat PFV cake
'The cats ate the cake.'/ *'(Some) cats ate the cake.'

(44) 貓，我認為吃了蛋糕
māo， wǒ rènwéi chī le dàngāo
cat I think eat PFV cake
'The cats, I thought they ate the cake.'/ *'(Some) cats, I thought they ate the cake.'

The interpretations of bare nouns show that the reading of NPs in Mandarin Chinese varies with syntatic positions. Different syntactic construals impose different interpretaions on NPs.

Mandarin 'one'-phrases belong to the category of numeral phrases, which have been regarded as indefinites (Cheng and Sybesma 1999). The interpretations of 'one'-phrases are also constrained by syntactic positions. 'One'-phrases are not allowed in the subject position, as shown in (45). 'One'-phrases can appear in the subject position only when they are not non-specific indefinites. For example, the existential predicate *you* in (46) gives the 'one'-phrase a specific reading, thus preventing the 'one'-phrase from being ruled out. The demonstrative marker in (47) can make the 'one'-phrase a definite NP, which satisfies the specificity requirement in the subject position.

(45) ??一個學生吃了蛋糕
[yí ge xuéshēng] chī le dàngāo
one CLF student eat PFV cake
??'One student ate the cake.' [subject position]

(46) 有一個學生吃了蛋糕

yǒu	[yí	ge	xuéshēng]	chī	le	dàngāo
EXT	one	CLF	student	eat	PFV	cake

'There is one student who ate the cake.' [subject position]

(47) 那一個學生吃了蛋糕

nà	[yí	ge	xuéshēng]	chī	le	dàngāo
that	one	CLF	student	eat	PFV	cake

'That student ate the cake.' [subject position]

Departing form 'one'-phrases in the subject position, when 'one'-phrases are used as the object in the canonical SVO word order, no special marker is required. As shown in (48) and (49), the indefinite 'one'-phrase has no problem occupying the postverbal object position.

(48) 我喝完了一杯咖啡

wǒ	hē	wán	le	[yì	bēi	kāfēi]
I	drink	finish	PFV	one	cup	coffee

'I finished a cup of coffee.'

(49) 我想喝一杯咖啡

wǒ	xiǎng	hē	[yì	bēi	kāfēi]	
I	would.like	drink	one	cup	coffee	

'I want to drink a cup of coffee. '

The asymmetry between subject and object positions in Mandarin Chinese is also reflected in 'one'-phrases as minimizers. When 'one'-phrases as minimizers appear as a postverbal object, they are not marked by scalar particles, as in (50). When they appear as the grammatical subject, as in (51), they have to be marked by a scalar particle, DOU or YE. The lack of one of these particles results in ungrammaticality, as in (52).

(50) 我進來時，沒看到一個人

wǒ	jìnlái	shí，	méi	kàn-dào	[yí	ge	rén]
I	enter	when	NEG	see-ASP	one	CLF	person

'When I entered, I didn't see anyone.'

(51) 一個人都/也沒來

[yí	ge	rén]	**dōu/yě**	méi	lái
one	CLF	person	DOU/YE	NEG	come

'Nobody came.'

(52) *一個人沒來

*[yí	ge	rén]	méi	lái
one	CLF	person	NEG	come

'Nobody came.'

This subject-object asymmetry has commonly been observed in indefinites that are used in both negative and non-negative contexts (Haspelmath 1997). Especially in SVO languages, such indefinites are not allowed in subject position, as illustrated in (53).

(53) English
a. I didn't see anybody.
b. *Anybody didn't come.

In order to comply with the constraint of the subject position, some languages have to resort to a different indefinite lexical item (i.e. *Nobody came*), to an existential construction, or to a change of word orders, as reported in the survey of indefinites in Haspelmath (1997). Haspelmath (1997) further points out that in many SVO languages, only postverbal constituents can be focused. In order to be interpreted negatively, an indefinite pronoun that also has non-negative uses needs to be focused.

Mandarin Chinese as an SVO language also has the subject-object asymmetry. Since 'one'-phrases as minimizers are indefinites, they are subject to the same focus constraint. When 'one'-phrases are used as minimizers, they need to be focused to get distinguished from their positive counterparts. Mandarin 'one'-phrases as minimizers do not need additional markers in the postverbal object position because the postverbal constituent is focused in the canonical VO order. If 'one'-phrases as minimizers appear in the subject position, they need to be associated with focus-sensitive markers to get focused. Therefore, the particles DOU and YE come into play because the constituents associated with them receive a focal stress. The requirement of the particles DOU and YE can also be observed when 'one'-phrases as minimizers appear as the preverbal object. As discussed in Chapter 4, Mandarin VO order and OV order have different information structures. The latter focuses on the preverbal object, as discussed in Chapter 4. Focus has been part of the semantics of the construction since Old Chinese. In Old Chinese, when 'one'-phrases as minimizers appeared as a preverbal object, no focus-sensitive particles were required since the OV construction has its focal prominence on the object. The particles DOU and YE began to get involved in the OV construction around Early Mandarin Chinese. In Modern Mandarin, the particle has become obligatory for the 'one'-phrases as minimizers in the preverbal object position, as shown in (54).

(54) 我進來時，一個人都/也沒看到

wǒ	jìnlái	shí，	[yí	ge	rén]	**dōu/yě**	méi	kàn-dào
I	enter	when	one	CLF	person	DOU/YE	NEG	see-ASP

'When I entered, I didn't see even a single person.'

In brief, how minimizers behave preverbally and postverbally shows that 'one'-phrases need to be focused in order to be interpreted as minimizers.

The indefinite NPs in the minimizer construction lack referential content of their own, and hence they are labeled as "phantom elements"[4] by Israel (2011). Although they do not have actually existent referents, they are still subject to the subject-object asymmetry of specificity for other indefinites, which have a referential function. The concept of phantom elements explains why both minimizers and indefinite NPIs (cf. English *any*) cannot introduce discourse referents. More generally, the phrase [*any* NP] in English does not have existential import, as observed by Horn (1997). [*Any* NP] does not entail that there are actual referents. In other words, minimizers

[4] Phantom elements are subject to the Implication Constraint defined by Israel (2011), as cited from Israel (2011: 179): Given a partially ordered set A with elements {a, b, c, …} and phantom α linked to A, α is licensed in a proposition P iff for every element x of A, P[α] → P [x].

and indefinite NPIs require their referents to be imaginable, but do not require them to exist. Israel (2011) points out that phantom indefinites are meaningful only in the conditions where reference to the phantom referent supports inferences about other instances of the same type since phantom indefinites lack their own referential content. For example, minimizers have to occur in contexts where their scalar inferences can be supported. Minimizers presuppose a contrast between a minimal value and an ordered set of alternative values. The phantom quantity denoted by 'one'-phrases as minimizers contrasts with other alternative quantities on an ordered scale.

In order to prevent 'one'-phrases as minimizers from being ruled out in the position which cannot accommodate indefinites, 'one'-phrases have to be associated with focus. Being in focus is an important property of minimizer constructions, as discussed in Section 5.2. When 'one'-phrases occur with prosodic prominence or emphatic stress in a negative environment, they are placed in a strong scalar construal and they profile a minimal value in an ordered set of alternatives. In other words, the association between focus and minimizers is reflected in the asymmetry in terms of the requirement of the focus-sensitive particles for 'one'-phrases as minimizers.

In sum, 'one'-phrases as minimizers lack substantial referents, but the phantom referents make them subject to the general syntactic constraints for indefinites in Mandarin Chinese. The comparison of 'one'-phrases in different syntactic positions shows that 'one'-phrases as minimizers maintain the characteristics of those of other Mandarin indefinites, but they also have their own properties.

5.3.1.2 Differences between preverbal and postverbal Mandarin 'one'-phrases as minimizers

When Mandarin 'one'-phrases as minimizers appear as a grammatical object, they can appear preverbally or postverbally. Mandarin preverbal object position has received much attention in the generative approach in the literature. The preverbal object is claimed to undergo movement from the postverbal position to a focus site for feature checking (Tsai 2004a and N. Zhang 2000, among others). Past studies focused on the structural connection between the VO and the OV word orders, while the semantic difference between the two types of constructions has barely been touched upon. This section will discuss how the two positions influence the reading of minimizers. The interpretations of 'one'-phrases as minimizers in the two object positions show that the VO and OV word orders have their own meanings.

As discussed in the diachronic development of Mandarin minimizers in Chapter 2, in the same negative environment, the preverbal object position can make 'one'-phases unambiguously interpreted as minimizers, whereas the postverbal object position does not guarantee a minimizer reading. In addition to this asymmetry, the two positions differ in their restrictions on the types of 'one'-phrases as minimizers. The preverbal object position can accommodate various kinds of 'one'-phrases as minimizers without additional contextual support, while in some cases the 'one'-phrases in the postverbal position require more information. The acceptability of 'one'-phrases in the postverbal object position is highly related to the frequency of use of the minimizer in question. Semantic anomaly will not arise if the minimizer is a commonly used expression. For example, the expression 'not say a word' in (55) and (56) has become a fixed

expression in Mandarin Chinese. This type of non-fixed 'one'-phrases can be nicely accommodated in both the postverbal (55) and preverbal (56) object positions.

(55) 他不說一句話
tā bù shuō [yí jù huà]
he NEG say one CLF speech
'He did not say a word.'

(56) 他一句話都/也不說
tā [yí jù huà] **dōu/yě** bù shuō
he one CLF speech DOU/YE NEG say
'He did not say even a word.'

Compared with non-fixed 'one'-phrases, fixed 'one'-phrases better fit the postverbal object position as in (57) since fixed 'one'-phrases have developed as an expression specifically for a minimizer reading. Fixed 'one'-phrases are welcome in both preverbal and postverbal object position, as illustrated in (57) and (58).

(57) 他沒有一點自尊心
tā méi yǒu [yì diǎn zìzūnxīn]
he NEG have one dot self-respect
'He did not have a bit of self-respect.'

(58) 他一點自尊心也沒有
tā [yí diǎn zìzūnxīn] **dōu/yě** méi yǒu
he one dot self-respect DOU/YE NEG have
'He did not have even a bit of self-respect.'

When 'one'-phrases as minimizers do not fall into the two categories above, semantic anomaly may arise in the postverbal object position. As shown in (59), the sentence is very marginal because 'not eating an apple' is not a commonly used expression for minimizers. Some native speakers even reject this sentence. More contextual information is required to make the minimizer legitimate.

(59) ???我沒吃一顆/個蘋果[5]
???wǒ méi chī [yì kē/ ge pínguǒ]
I NEG eat one CLF apple
'I didn't eat an apple.'

However, if the same 'one'-phrase occurs in the preverbal position, the sentence works perfectly fine, as in (60). The 'one'-phrase is undoubtedly a legitimate minimizer.

(60) 我一顆蘋果都/也沒吃
wǒ [yì kē/ ge pínguǒ] **dōu/yě** méi chī
I one CLF apple DOU/YE NEG eat
'I didn't even eat an apple.'

[5] *Kē* is the individual classifier for apples. In Modern Mandarin, the general classifier *ge* can also be used for apples.

It is worth noting that the scalar inferences from (60) have two possibilities depending on how the scales are structured. One is based on an objective scale, while the other is based on a subjective scale. The objective scale is related to the quantifiable value denoted by the 'one'-phrase in question. Minimizers have the presupposition that a minimal value is contrasted with an ordered set of alternative values. In the case of (60), *one* apple contrasts with other quantities of apples along an objective scale, such as two, three, four, and more apples. The scalar inferences are all relevant to the quantity of apples. In other words, the 'one'-phrase is used to profile a scale endpoint and it requires that the alternatives saliently contrast along that scale.

If the scale is structured subjectively, the 'one'-phrase profiles a specific instance within an ordered set of alternatives. The relevant scale evoked by 'one apple' is entirely subjective. In the case of (60), the category of apples can be contrasted with other kinds of fruits, or with other kinds of food. For example, the speaker usually has apples as part of breakfast, but one day the speaker did not have time for breakfast in the morning. The use of the sentence implies that the speaker did not eat apples, let alone other kinds of food, such as toast or pastries. Another scenario is that the only kind of fruit the speaker is willing to eat is an apple. When the speaker is asked whether he ate anything from the fruit basket, he can use sentence (60) as the answer to imply that no fruit was eaten. If the most acceptable kind of fruit is not eaten, it entails that other kinds of fruits are even more unlikely to be eaten. These possible scenarios show that the subjective scale can be broadly defined. Which type of scale is used relies on the context for specification. It is worth noting that the presupposition remains unchanged no matter which scale is used. The presupposition is that apples are the items most likely to be eaten for the speaker. In this case, the category of apples is located at the bottom of a conceptual scale. On both the subjective and objective scales, the phantom referent denoted by a minimizer 'one'-phrase must be the one at the scale endpoint.

The asymmetry between postverbal and preverbal 'one'-phrases as minimizers can also be illustrated in the contrast between (61) and (62). Sentence (61) can only be used when the scale is an objective scale which has quantifiable values. The phantom value denoted by 'one dog' contrasts with alternative values ordered on a scale such as two dogs, three dogs, and so on. The same scalar inferences can also be found in the preverbal object position, as in (62). However, (62) is not restricted to the reading based on a quantifiable scale. (62) can be construed on a subjective scale with the presupposition that the kind of animal *dog* is the most likely to be seen in the speaker's expectation. For example, dogs are the most possible kind of animal to encounter in a pet park. The denial of seeing dogs in the park implies that other kinds of pets such as cats are also not seen. It is worth noting that the preverbal 'one'-phrase carries focal stress in the two types of scalar inferences because the preverbal object position is the focus site, as discussed in Chapter 4. It relies on contextual cues to highlight quantity contrast or kind contrast.

(61) 沒看到一隻狗

méi	kàn	dào	[yì	zhī	gǒu]
NEG	see	ASP	one	CLF	dog

'(I) did not see a dog.'

(62) 一隻狗也沒看到

[yì	zhī	gǒu]	**dōu/yě**	méi	kàn	dào
one	CLF	dog	DOU/YE	NEG	see	ASP

'(I) did not see even one dog.'

The examples discussed so far clearly distinguish the differences between 'one'-phrases as minimizers in the preverbal and postverbal object positions. Based on the different interpretations of minimizers, I propose that how scales are structured is determined by syntactic positions in Mandarin. The major difference concerning how scales are construed preverbally and postverbally is summarized in Table 5.2.

Table 5.2: 'One'-phrases as minimizers functioning as the grammatical object

Preverbal object position	**OBJECTIVE SCALE:** quantifiable, contrasting values within the same type **SUBJECTIVE SCALE:** contrasting across types; contextually determined; the type denoted by the minimizer is located at the bottom-end of a scale
Postverbal object position	**OBJECTIVE SCALE:** quantifiable, contrasting values within the same type

The preverbal object position generally can accommodate all kinds of 'one'-phrases because this syntactic construal characterizes scalar inferences even without the help of contexts. How the scalar inferences induced by 'one'-phrases are construed can be further specified by contexts. This phenomenon is another piece of evidence for the special status of preverbal position for 'one'-phrases as minimizers. 'One'-phrases with negation in a preverbal object position have been unanimously interpreted as minimizers. In contrast, in some cases the postverbal 'one'-phrases as minimizers require sufficient contextual information to support their scalar inferences. For instance, sentence (63) is used in the situation when what the conversation concerns is cigarette butts. The scalar inferences can only be related to the quantity of cigarette butts. The same reading holds in sentence (64), but the sentence can also be used to imply that cigarette butts are the kind of trash which is most likely to be seen after the event according to the speaker's subjective scale. Following the scalar reasoning, if no cigarette butts are found, it entails that other kinds of trash are also not found.

(63) 整個會場在結束時找不到一根煙頭 [from *Chinese Gigaword*]

zhěng	ge	huìchǎng	zài	jiéshù	shí，
whole	CLF	venue	at	finish	when

zhǎo	bú	dào	[yì	gēn	yāntóu]
find	NEG	ASP	one	CLF	cigarette butt

'When the event finished, (people) could not find a cigarette butt at the venue.'

(64) 整個會場在結束時一根煙頭都/也找不到

zhěng	ge	huìchǎng	zài	jiéshù	shí，
whole	CLF	venue	at	finish	when

[yì	gēn	yāntóu]	**dōu/yě**	zhǎo	bú	dào
one	CLF	cigarette butt	DOU/YE	find	NEG	ASP

'When the event finished, (people) could not find even one cigarette butt at the venue.'

The asymmetry regarding hosting 'one'-phrases as minimizers in the two positions reflects the difference between the VO and OV word orders in Mandarin Chinese. The asymmetry also echoes the phenomenon that 'one'-phrases as minimizers have the tendency to appear as the preverbal object in their diachronic development.

5.3.1.3 Interpretations determined by word orders of 'one'-phrases as minimizers in Mandarin Chinese

The previous section shows that 'one'-phrases as minimizers in the preverbal position have different interpretations due to different ways of constructing conceptual scales. In this section, how different sets of scalar inferences arise in the preverbal position will be further discussed. How the scales of minimizers are constructed is related to the word orders of 'one'-phrases. The variation of word orders within a numeral phrase giving rise to various interpretations features numeral classifier languages. In Mandarin Chinese, numeral phrases are composed of three elements: a cardinal numeral, a classifier, and a noun. Although in Modern Mandarin the word order of a numeral expression is claimed to be fixed, with the classifier following the numeral and preceding the noun (Zhang 2013), variation of word orders can still be observed in some cases, particularly in 'one'-phrases as minimizers. Different combinations of the three elements in 'one'-phrases can give 'one'-phrases as minimizers different interpretations.

In Modern Mandarin, the variation of word orders is restricted to the preverbal position, as shown in (65) and (66). In (65), the 'one'-phrase has the canonical word order: NUM-CLF-NOUN, whereas in (66) the noun of the 'one'-phrase precedes the combination of the numeral and the classifier: NOUN-NUM-CLF.

(65) 他今天一粒米也/都沒吃

tā	jīntiān	[**yí**	**lì**	mǐ]	yě/ dōu	méi	chī
he	today	one	CLF	rice	YE/DOU	NEG	eat

'He did not eat even a grain of rice today.'/ 'He did not eat anything today.'

(66) 他今天米一粒也/都沒吃

tā	jīntiān	[mǐ	**yí**	**lì**]	yě/ dōu	méi	chī
he	today	rice	one	CLF	YE/DOU	NEG	eat

'He did not eat even a grain of rice today.'

However, in the postverbal position only the canonical word order of numeral phrases is allowed, as shown in (67). The other word order NOUN-NUM-CLF is barred in this position, as illustrated in the ungrammaticality of (68).

(67) 他今天沒吃一粒米

tā	jīntiān	méi	chī	[**yí**	**lì**	mǐ]
he	today	NEG	eat	one	CLF	rice

'He did not eat a grain of rice today.'

(68) *他今天沒吃米一粒

*tā	jīntiān	méi	chī	[mǐ	**yí**	**lì**]
he	today	NEG	eat	rice	one	CLF

'He did not eat even a grain of rice today.'

The question is then how the two word orders in the preverbal position differ in their interpretations. The scale evoked by the 'one'-phrase in (65) can be construed subjectively or objectively depending on the contexts. When the interpretation is based on an objective scale, the scalar inferences are all relevant to the values on a quantifiable scale. The reading is *He did not eat any rice*. If the interpretation is built upon a subjective scale, the rice is contrasted with other types of food. In this case, the same sentence can be used to imply that *He didn't eat anything*. The other word order in the preverbal position as in (66) does not have multiple possibilities. In (66), only the reading based on the objective scale is possible. The phantom value denoted by the 'one'-phrase contrasts with alternative values ordered along an objective scale – e.g. two grains of rice, three grains of rice, and so on. The basic unit for evoking a scale is reflected in the site of focal stress. For instance, the focal stress normally covers the entire 'one'-phrase in (65). In this case, subjective and objective scales are both possible. The stressed 'one' can evoke a quantifiable scale, while the stressed noun can evoke a subject scale involving speaker's judgments about the likelihood of various types of food. However, the focal stress in (66) covers only the numeral-classifier part rather than the whole 'one'-phrase. The profiled 'one' and the unit word thus evoke a quantifiable objective scale. Since the noun of the 'one'-phrase is not in the focal range, this word order lacks a subjective scale for contrasting types. In sum, the focal stress clearly delimits the range of focus and serves as an indicator of how scales are construed.

The same phenomenon regarding the scalar inferences can also be observed in the subject position. The variation of word orders of 'one'-phrases is allowed in the subject position, as shown in (69) and (70). Sentence (70) profiles the endpoint of a scale with different numbers of students ordered. As for (69), the 'one'-phrase has the canonical word order, making the interpretations for both subjectively and objectively structured scales possible. (69) can have the same reading as (70) if it is used to contrast different values. (69) can also be interpreted based on a subjective scale. For example, it can be used to imply that if no students came, it is also impossible for teachers or school staff to come. In this case, different types of categories are contrasted with the presupposition that students are the most likely category to instantiate the event denoted by the predicate.

(69) 一個學生也/都沒來

[yí	ge	xuéshēng]	yě/ dōu	méi	lái
one	CLF	student	YE/ DOU	NEG	come

'Not even a student came.'

(70) 學生一個也/都沒來
[xuéshēng yí ge] yě/ dōu méi lái
student one CLF YE/ DOU NEG come
'Not even a student came.'

The choice of different scales is relevant to the range covered by the two particles YE and DOU. The constituents associated with the two particles are focus associates, whose diachronic development has been discussed in Chapter 4. The placement of a focal stress can indicate the range of the focus. For example, the focal stress in (69) is located on the whole 'one'-phrase. In this case, both 'one-CLF' and 'students' are associated with YE and DOU. 'One-CLF' can introduce an objectively construed scale because it denotes a phantom value, while the emphasized 'students' may be related to subjective scales because it can be used to contrast with its relevant categories. The categories are not a random set of alternatives. Instead, they are ordered along a scale. On the contrary, the focal stress in (70) falls only on the combination of the numeral 'one' and the classifier, which means that the value denoted by the combination is profiled. In this case, a quantified scale is structured for the scalar inferences. In brief, the focus scope of the particles is the determining factor underlying the difference of the two word orders of 'one'-phrases for interpreting minimizers.

It is worth noting that the distinction between the two word orders already appeared in Old Chinese, as is discussed in Chapter 2. The word order NOUN-NUM-UW in Old Chinese emphasized a precise quantity. The form was responsible for enumeration and specifying quantity. However, the other word order NUM-UW-NOUN did not place its emphasis on a specific quantity. The combination of the numeral and the unit word was used to modify the noun. The form NUM-UW-NOUN is used to describe the quantifiable properties of the noun such as size, length, or weight. This distinction disappeared around Middle Chinese (Wei 2003) and the word order NUM-UW-NOUN has since become the canonical one. The order covered all the functions which used to be divided by two forms in Old Mandarin. The historical trace of the two forms explains why the two word orders of 'one'-phrases as minimizers give rise to variations in scalar inferences. The NUM-UW-NOUN can have its new information either on the quantity or on the noun and it can therefore evoke different kinds of scales. On the other hand, the form NOUN-NUM-UW is a vestige from Old Chinese. The new information of the word order is the value denoted by the numeral and the unit word. Hence the scale evoked by the numeral-classifier combination in this form must be an objective one with relevant alternative values ordered.

An alternative analysis for (70) is to treat the noun 'students' as the sentence topic. For example, the noun 'students' in (71) is regarded as a topic in Huang et. al (2009). *Xuéshēng* 'students' and *liǎng-ge* 'two-CLF' are treated as two separate constituents.

(71) 學生，兩個已經回去了 [from Huang et. al 2009: 303]
xuéshēng， liǎng-ge yǐjīng huí qù le
student two-CLF already back go PTC
'Among the students, two have returned home.'

The Mandarin Chinese topic construction has the topic precede the subject. A bare noun in the topic position must be interpreted as definite, as in (71). However, the topic analysis is only part of the story. It may not account for the variation of word order patterns in the preverbal object

position. For example, in sentence (72) the subject precedes the 'one'-phrase, and therefore *kāfēi* 'coffee' in (72) does not function as the topic. Furthermore, *kāfēi* 'coffee' is not interpreted as a definite. These two observations indicate that the word order variation is not simply a result of topicalization.

(72) 我今天咖啡一口都沒喝

wǒ	jīntiān	[kāfēi	yì	kǒu]	dōu	méi	hē
I	today	coffee	one	mouth	DOU	NEG	drink

'I didn't drink even a sip of coffee today.'

In sum, each of the two word order patterns of numeral phrases has its own meaning. The position of the focal stress determines how a conceptual scale evoked by a minimizer is construed.

How word orders of 'one'-phrases as minimizers influence interpretations can also be observed in other numeral classifier languages, such as Japanese and Korean. These will be discussed in the following two sections.

5.3.2 Interpretaions determined by word order of numeral phrases in Japanese

Japanese numeral phrases appear in at least three word orders, as shown in (73)-(75). The combination of the numeral and the classifier can appear prenominally when it is accompanied by the genative marker NO, as in (73). The same combination can also appear post-nominally. In this case, the numeral-classifier combination is followed by a case marker, as shown in (74). The last variant is that the numeral-classifier combination appears postverbally, but not marked by a case particle. Instead, the noun gets the case marker, as shown in (75). The three sentences are claimed to be truth-conditionally equivalent in that all of them are ture if Taro saw one cat in the park (Nankanishi 2006).

(73) NUM-CLF-GEN NP-CASE

Taro-wa	[ip-piki-no	neko-o]	mi-ta
Taro-TOP	one-CLF-GEN	cat-ACC	see-PST

'Taro saw a cat.'

(74) NP NUM-CLF-CASE

Taro-wa	[neko	ip-piki-o]	mi-ta
Taro-TOP	cat	one-CLF-ACC	see-PST

'Taro saw a cat.'

(75) NP-CASE NUM-CLF

Taro-wa	[neko-o	ip-piki]	mi-ta
Taro-TOP	cat-ACC	one-CLF	see-PST

'Taro saw a cat.'

Although they have the same truth condition, the three variants can lead to different interpretations of numeral phrases. In particular, the difference is in specificity. Specificity has been observed to have a three-way contrast in numeral phrases (Huang & Ochi 2012, Kakegawa 2000). This contrast is summarized in (76).

(76) Specficity of Japanese numeral phrases

Type	Word order	function
Type I	NUM-CLF-GEN NP-CASE	specific, non-specific
Type II	NP NUM-CLF-CASE	Specific
Type III	NP-CASE NUM-CLF	non-specific

Type I can be used regardless of whether there is a specific referent. The combination of the numeral and the classifier modifies the quantity-relevant properties of the noun (Miyamoto 2009). Type II is used only in the situation when a specific referent exists. In contrast, Type III assumes that there is no particular referent. The subtle difference is highlighted when the three types of numeral phrases are placed in a context where a non-specific reading is forced (Huang and Ochi 2012, Kishimoto 2000). As shown in (77), Type I and Type III can fit the context, but Type II cannot. The constrast shows that the numeral phrases appearing in Type II must have specific referents.

(77) Japanese [cited from Huang & Ochi 2012: 6]
heikin-suru to, maishuu kono byooin-de-wa...
average-do, every week this hospital-at-TOP

Type I: san-nin-no akanboo-ga umareru
three-CLF-GEN baby-NOM be born

Type II: *akanboo san-nin-ga umareru
baby three-CLF-NOM be born

Type III: akanboo-ga san-nin umareru
baby-NOM three-CLF be born
'On average, three babies are born in this hospital every week.'

The distnction between spsecific and nonspecific indefinites has been viewed as a reflection of differences in the size of nomimal expression (Muromatsu 1998, Borer 2005, and Huang and Ochi 2012). The analysis of the three variants in Huang and Ochi (2012) leads to the generalization that a specific indefinite has a larger structure than a nonspecfic indefinite. The three elements in Type I and Type II are treated as a constituent of numeral phrases. The phrase does not tolerate any intervetion between each of the three elements. As for Type III, the case marker delimits the size of the nominal phrase. The combination of the numeral and the classifier is not part of the nominal domain. Type III is smaller than Types I and II in terms of the phrasal size. The numeral-classifier combination of Type III in the literature has been treated as a floating quantifier (Huang and Ochi 2012). This analysis is supported by the fact that intervetion is allowed between the NP and the combination of the numeral and thc classifier, as shown in (78).

(78) Taro-wa kooen-de neko-o kinoo ip-piki mi-ta
Taro-TOP part-at cat-ACC yesterday one-CLF see-PST
'Taro saw a cat in the park yesterday.'

The distinction of the three variants of numeral phrases is also reflected in the interpretations of 'one'-phrases as minimizers. The formation of Japanese minimizers has been briefly discussed in Section 5.1.1. To review, when MO attaches to an expression of a minimal amount, such as a 'one'-phrase, the expression behaves as a minimizer NPI. Like other numeral phrases in Japanese, when 'one'-phrases are used as minimizers, they also have the three types of word orders, as shown in (79)-(81). The difference between the minimizers and their corresponding positive sentences in Type I and Type III lies in the choice of markers. The case marker is replaced by the scalar particle MO. It is noteworthy that the case marker in Type II cannot be replaced by MO. Moreover, MO is not allowed to attach to the numeral-classifier combination in Type II (Nakanishi unpublished manuscript in preparation)[6].

(79) Japanese: Type I
Taro-wa kooen-de [ip-piki-no neko-mo] mi-nakat-ta
Taro-TOP park-LOC one-CLF-GEN cat-MO see-NEG-PST
'Taro did not see any cat in the park.'

(80) Japanese: Type II
Taro-wa kooen-de [neko ip-piki (*-mo)] mi-nakat-ta
Taro-TOP park-LOC cat one-CLF-MO see-NEG-PST
'Taro did not see any cat in the park.'

(81) Japanese: Type III
Taro-wa kooen-de [neko-o ip-piki-mo] mi-nakat-ta
Taro-TOP park-LOC cat-ACC one-CLF-MO see-NEG-PST
'Taro did not see any cat in the park.'

Although the three sentences have the same English translation, (79) and (80) appear in a scenario different from that of (81). Sentences (79) and (80) are used when the situation is out of the speaker's expectation. For example, the park is famous for its cats. In the speaker's expectation, cats should be the type of animal which is most likely to be encountered in this park. Such an expectation is not entailed in (81). The expression in (81) is judged by native speakers to be the most natural one among the three types if there is no contextual information. The sentence can be used in a neutral environment, whereas (79) and (80) require more contexts about the speaker's expectation. The semantic difference between minimizers in Type I, Type II, and Type III can be understood in terms of the types of alternatives contrasted along an ordered scale. For example, Type III contrasts different values along a quantified scale, such as one, two, and three cats. Type I and Type II also have this implication, but they also entail that if cats are not seen in this park, chances are that other kinds of animals, such as dogs and human beings, are also not found. In other words, only (81) is felicitous in the context where Taro saw no cats but saw other kinds of animals. Sentences (80) and (81), but not sentence (79), are felicitous in the context

[6] The issue regarding whether the particle MO can appear or not is still controversial. I checked with five Japanese native speakers. Three rejected the occurrence of MO, while two thought that the occurrence of MO is legitimate in Type II.

where Taro has seen neither cats nor other kinds of animals. This scenario also implies that cats are the most likely animal which people may encounter in this park.

The semantic differences among the three types of 'one'-phrases is amplified if the categories contrasted by 'one'-phrases reflect not only the speaker's viewpoint but also people's general understanding. The following two sets of data adopted from Nakanishi (unpublished manuscript in preparation: 4) illustrate these differences[7]. In the two types of food in (82) and (83), generally bread is the typical food that people more often eat, while steak is less typical. In (82), Type I and Type II can be interpreted in two ways, while Type III can have only one reading. In other words, Type III contrasts only the values within one type of food. In the case of less typical food, as in (83), only Type III is a natural expression. Since steak is not the typical food that people often eat, the subjective scale is not available in Type I and Type II. Interestingly, Type III is felicitous if Alan does not eat the type of food referred to by the 'one'-phrase in question, although he might eat other kinds of food.

(82) Japanese

Type I

Alan-wa	[iti-mai-no	pan-mo]	tabe-nakat-ta
Alan-TOP	one-CLF-GEN	bread-MO	eat-NEG-PST

'Alan did not eat any bread.'/ 'Alan did not eat anything.'

Type II

Alan-wa	[pan	iti-mai(*-mo)]	tabe-nakat-ta
Alan-TOP	bread	one-CLF-MO	eat-NEG-PST

'Alan did not eat any bread.'/ 'Alan did not eat anything.'

Type III

Alan-wa	[pan-o	iti-mai-mo]	tabe-nakat-ta
Alan-TOP	bread-ACC	one-CLF-MO	eat-NEG-PST

'Alan did not eat any bread.'

(83) Japanese

Type I

??Alan-wa	[iti-mai-no	suteeki-mo]	tabe-nakat-ta
Alan-TOP	one-CLF-GEN	steak-MO	eat-NEG-PST

'Alan did not eat any steak.'/ *'Alan did not eat anything.'

Type II

??Alan-wa	[suteeki	iti-mai(*-mo)]	tabe-nakat-ta
Alan-TOP	steak	one-CLF-MO	eat-NEG-PST

'Alan did not eat any steak.'/ *'Alan did not eat anything.'

Type III

Alan-wa	[suteeki-o	iti-mai-mo]	tabe-nakat-ta
Alan-TOP	steak-ACC	one-CLF-MO	eat-NEG-PST

'Alan did not eat any steak.'

[7] The interpretations of (82) and (83) are checked with two native speakers. The interpretations are slightly different from the examples in Nakanishi's manuscript.

In (82), all three types can be used to contrast different quantities within the category of bread. When the minimizer is used in this sense, the phantom value denoted by the numeral-classifier combination is contrasted with any larger values on an objectively structured scale. In addition to the contrast of values, Type I and Type II in (82) can also be used to imply that 'Alan didn't eat anything.' In this case, the scale is a subjective scale defined by the speaker. Since bread is assumed to be the most typical item of food, it is used to contrast with other less typical types of food. The logic in Type I and II is that if the most possible alternative is negated, it implies that other alternatives are also negated. The scalar inferences based on a subjective scale in (82) are closely related to the representativeness of different kinds of food for people. The reading from a subjective scale disappears if the type of food denoted by the 'one'-phrase is not generally assumed to be a typical one. As shown in (83), only the reading from an objectively structured scale is legitimate. The contrasting of different values is within the category of steaks. The Type III in (83) is still felicitous in the situation that Alan did not eat steaks, but he might have eaten something else.

The distinction between Type I/ Type II and Type III in 'one'-phrases as minimizers is determined by the focus site defined by the particle MO or the focal stress. The range of the focal stress covered is included in a square bracket, as shown in (84).

(84) Focal stress in the three types of numeral phrases in Japanese

Type I	**[NUM-CLF-GEN NP]-MO**
Type II	[NP NUM-CLF]
Type III	NP-CASE [NUM-CLF]-MO

In Type I, the focal stress falls on the whole numeral phrase. It indicates that the entire numeral phrase is associated with the scalar particle MO. Although MO may not be involved in Type II, the focal stress also can specify that the three components of a numeral phrase are in focus. In Type III, only the numeral-classifier combination is covered by the focal stress. The difference concerning the focus site explains why the three types of minimizers yield different interpretations. The scale evoked by 'one'-phrases as minimizers is determined by focused elements. The constituent covered by the scalar particle MO is the basic unit used to define its relevant scale. For example, in Type III, the numeral-classifier combination is used to structure the scale, so the alternatives on the scale are values. Since the noun is not involved in the focus site, no contrast in types is evoked. Type I and Type II, on the other hand, have a larger site of focus, including the noun of a numeral phrase. In this case, both an ordered scale of value alternatives and an ordered scale of alternatives in types become legitimate. This contrast also explains why the minimizers in the form of Type III are considered to be more natural in a neutral environment, whereas the minimizers of Type I and Type II require more contextual information to pin down the actual reading of the minimizers. The analysis regarding the relation between the focus site and the relevant scale for minimizers can be further supported by the 'one'-phrases in the sentence-initial focus position. In Japanese, the numeral-classifier combination of 'one'-phrases can appear in the sentence-initial position for a particular emphasis if it bears a strong focal stress, as shown in (85). In this example, the scale evoked by the 'one'-phrase must be an objective scale with ordered values.

(85) [it-teki-mo] John-wa biiru-o noma-nakat-ta
one-CLF-MO John-TOP beer-ACC drink-NEG-PST
'John did not drink even a drop of beer.'

The 'one'-phrases as minimizers of Type I and II seem to behave similarly. Since they have the same focus site, both of them can accomodate a subjective and an objective scale. However, subtle differences can still be observed in the two types. Some fixed or idiomatic expressions of minimizers can appear in Type II, but not in Type I. As shown in the contrast between (86) and (87) cited from Nakanishi (unpublished manuscript in preparation: 13), the expression *hitokko hito-ri*, ' human child one-CLF' can appear in Type II, but not in Type I.

(86) Type II
Taro-wa hitokko hito-ri mi-nakat-ta
Taro-TOP human child one-CLF see-NEG-PST
'Taro didn't see a human child.'/ 'Taro didn't see anyone.'

(87) Type I
*Taro-wa hito-ri-no hitokko mi-nakat-ta
Taro-TOP one-CLF-GEN human child see-NEG-PST
Intended reading: 'Taro didn't see a human child.'/ 'Taro didn't see anyone.'

One more example illustrating the contrast is shown in the comparison of (88) and (89). *Nomida hitotsu* 'tear one-CLF' is allowed only in Type II, but not in Type I. The case is special in that *nomida* 'tear' goes with the classifier *teki*, which is used to describe a droplet-shaped object. However, when 'a drop of tear' is used as a minimizer, the general classifier *tsu* is used. Hence the expression *nomida hitotsu* 'tear one-CLF' is treated as a frozen expression here.

(88) Type II
namida hito-tsu-mo mise-nakat-ta[8]
tear one-CLF-MO show-NEG-PST
'(He) didn't let a tear be seen.'

(89) Type I
*hito-tsu-no namida-mo mise-nakat-ta
one-CLF-GEN tear- MO show-NEG-PST
Intended reading: '(He) didn't let a tear be seen.'

The contrast between Type I and Type II in terms of idiomatic expressions shows that minimizer-based interpretation is preferred in a particular construction. For instance, in Japanese, idiomatic expressions of minimizers generally appear in the word order of Type II. Mandarin Chinese also has a specific word order for numeral phrases where idiomatic minimizers appear. As shown in (90), Mandarin 'not see one shadow' is an idiomatic expression meaning 'not see anybody'. This fixed expression appears in the word order NUM-UW-NOUN rather than NOUN-NUM-UW. The contrast again reflects the fact that a certain type of construction is more likely to undergo grammaticalization.

[8] The occurrence of the scalar particle MO is obligatory in this sentence according to my Japanese consultant.

(90) 我一個影子都沒看到
wǒ [yí ge yǐngzi] dōu méi kàn dào
I one CLF shadow DOU NEG see ASP
'I didn't see even a shadow./ I didn't see anybody.'

In sum, this section has shown that each of the three types of word orders in Japanese numeral phrases is responsible for a particular function. The range covered by the focus is different in the variants of the word orders and this difference greatly affects the interpretations of 'one'-phrases as minimizers. The discussion of Japanese minimizers shows that how a conceptual scale is construed is relevant to what is profiled in a numeral phrase.

5.3.3 Interpretations determined by word order of numeral phrases in Korean

The effect of word orders on the interpretations of indefinite NPs in Korean is similar to that in Japanese discussed in Section 5.3.2. Like Mandarin Chinese and Japanese, Korean lacks articles for definiteness. Korean bare nouns are thus ambiguous among definite, specific, and nonspecific readings (Kim 2005), as shown in (91). Without further specification from context, the bare noun in (91) can yield three possible readings.

(91) Korean
John-ga chek-ul ilk-ess-ta
John-NOM book-ACC read-PST-DEC
'John read the book/a book (specific/nonspecific).'

Korean numeral phrases have a different story. Semantic differences of numeral phrases can be distinguished by the ordering of the three components within numeral phrases. There are three variants of word orders, as shown in (92)-(94). The object in Type I has a nonspecific reading. In Type II, the object can be interpreted as either specific or nonspecific, whereas in Type III the object can only have a nonspecific reading. A comparison of the three types shows that the ordering of the three elements plays a crucial role in determining the reading of a numeral phrase.

(92) Type I: NUM-CLF-GEN NP-CASE
John-nun [han-mali-uy kangaci-lul] po-ass-ta
John-TOP one-CLF-GEN dog-ACC see-ANT-DECL
'John saw a dog.'

(93) Type II: NP NUM-CLF-CASE
John-nun [kangaci han-mali-lul] po-ass-ta
John-TOP dog one-CLF-ACC see-ANT-DECL
'John saw a dog.'

(94) Type III: NP-CASE NUM-CLF
John-nun [kangaci-lul han-mali] po-ass-ta
John-TOP dog-ACC one-CLF see-ANT-DECL
'John saw a dog.'

Since the main source of minimizers in Korean also comes from 'one'-phrases, the same variation of word orders can also be observed in minimizers. When the components of 'one'-phrases are arranged in different ways, different scales are used for inducing scalar inferences. Korean has three types of orders for 'one'-phrases as minimizers, as shown in (95)-(97). The three types correspond to the three types of general numeral phrases in (95)-(97). The difference is that the accusative marker in (95)-(97) is substituted by the scalar particle TO. It is noteworthy that the three types of 'one'-phrases as minimizers in Korean correspond to those in Japanese, which are discussed earlier in Section 5.3.2. However, the two languages differ in Type II. In Japanese, the occurrence of the scalar particle MO is not allowed, whereas in Korean the occurrence of the scalar particle TO is obligatory.

(95) Type I

na-nun	kongwon-eyse	[han-mali-uy	kaemi-to]	po-ci-mos-ha-yss-ta
I-TOP	park-LOC	one-CLF-GEN	ant-TO	see-CONN-NEG-do-ANT-DECL

'I didn't see any ants in the park.' / 'I didn't see any living beings/ anything.'

(96) Type II

na-nun	kongwon-eyse	[kaemi	han-mali-to]	po-ci-mos-ha-yss-ta
I-TOP	park-LOC	ant	one-CLF-TO	see-CONN-NEG-do-ANT-DECL

'I didn't see any ants in the park.'/ 'I didn't see any living beings/ anything.'

(97) Type III

na-nun	kongwon-eyse	kaemi-lul	[han-mali-to]	po-ci-mos-ha-yss-ta
I-TOP	park- LOC	ant-ACC	one-CLF-TO	see-CONN-NEG-do-ANT-DECL

'I didn't see any ants in the park.'

In Korean Type I as in (95) and Type II as in (96), there are two possible readings.[9] One is based on a scale of values, whereas the other one is based on a scale of types. The scale of values yields the reading 'I didn't see any ants in the park' because the value denoted by the 'one'-classifier combination contrasts with any other larger cardinals. The scale of types has the reading 'I didn't see any human' since the category of *ants* is used to contrast with other kinds of animals. The involvement of a subjective scale in sentences (95) and (96) presupposes that the category of *ants* is judged by the speaker to be the most likely animal to be encountered in the park. The logic is that if there are no ants seen in the park, it entails that other kinds of animals are also not seen. The minimizer reading in (97) is not ambiguous because only the reading based on an objective scale is possible.

The difference in readings for the three types is related to what part of 'one'-phrases is associated with focus. The phenomenon is the same as that of the relation between focus and scalar inferences in Japanese. In Korean, the location of a focal stress is an indicator of the range covered by focus. In Type I and Type II, the entire 'one'-phrase has the focal stress, which means the whole phrase is associated with the scalar particle TO. Since the stressed elements are used to construe a scale, both the numeral-classifier combination and the noun are possible candidates. It relies on the context to identity which scale, subjective or objective, is used. In Type III, the focal stress falls only on the numeral-classifier combination. Therefore, only the

[9] According to native speakers' judgment, the default reading of Type I in (95) is 'I didn't see any ants in the park'. The other reading 'I didn't see any human/ anything' requires being coerced by more contextual support.

reading from a quantifiable scale related to the numeral-classifier combination appears. The focus site in Type III also suggests that the noun and numeral-classifier combination does not form a constituent. The fact that Type III allows intervention in a numeral phrase as in (98) also supports this analysis. It is worth noting that the numeral-classifier combination is unusually stressed in this case (Lee 2000). This is an indicator of the association with focus. The word order of numeral phrases in Type III constrains the size of the focus, and thus influences focus-related interpretations.

(98) na-nun kaemi-lul kongwon-eyse [han-mali-to] po-ci-mos-ha-yss-ta
I-TOP ant-ACC park-LOC one-CLF-TO see-CONN-NEG-do-ANT-DECL
'I didn't see any ants in the park.'

Korean 'one'-phrases as minimizers behave like those in Japanese. In both languages, each of the word orders of numeral phrases is responsible for a specific function. In addition, different word orders have different focus sites. The range of focus determines how 'one'-phrases as minimizers induce scalar inferences. In sum, Korean and Japanese 'one'-phrases as minimizers illustrate the correlation between focus and how scalar inferences are constructed.

5.4 'One'-phrases as a Distinct Class of NPIs in Numeral Classifier Languages

The pervasive use of 'one'-phrases as NPIs is a characteristic of numeral classifier languages. 'One'-phrases as minimizers can be regarded as a specific class of NPIs because they have special syntactic, semantic, and pragmatic properties which make them distinct from other types of NPIs. In this section, I will discuss how numeral minimizers differ from other types of NPIs based on two points. One is about their syntactic and semantic licensing constraints, which will be covered in Section 5.4.1. The other pertains to the puzzle of why 'one'-phrases are intuitively judged to be "stronger" or more "emphatic", which will be discussed in Section 5.4.2.

5.4.1 Minimizers as strict NPIs

Minimizers are often labelled as "strong" or "strict" NPIs in the sense that they are licensed very narrowly. Specifically, they appear only with negation or the antiveridical connective *without* (Giannakidou 2011). In Japanese and Korean, the 'one'-phrases belong to the class of strong NPIs as opposed to the broad NPIs, which are regarded as "weak". The "strictness" of the 'one'-phrases as minimizers can be illustrated in the contrast between (99) and (100). The 'one'-phrase 'a student' can be used as an NPI if there is negation, as in (99). However, the same phrase is not allowed in a conditional.

(99) Japanese
Taro-wa [gakusei-o hito-ri-mo] mi-nakat-ta
Taro-TOP student-ACC one-CLF-MO see-NEG-PST
'Taro didn't see any students.'

(100) Japanese
*[gakusei-o hito-ri-mo] mita-ra siras-ero
student-ACC one-CLF-MO see-if inform-IMP
'If you see any student, inform me.'

Japanese has a clear distinction between strict NPIs and broad NPIs. If a 'one'-phrase is attached by the particle *demo*, the 'one'-phrase can be treated as an NPI in the environments without negation (Nakanishi 2006). For example, the 'one'-phrase plus *demo* induces scalar inferences in conditionals, as shown in the two word order variants in (101) and (102). The 'one'-phrase profiles the end-point of a scale and covers the alternatives above the value 'one'.

(101) Japanese
iti-mai-no pan-demo tabe-ta-ra ogoru-yo
one-CLF-GEN bread-DEMO eat-PST-if get angry-EMP
'If you even eat one slice of bread, I'll get angry at you.' Or 'If you eat anything, I will get angry at you.'

(102) Japanese
pan-o iti-mai-demo tabe-ta-ra ogoru-yo
bread-ACC one-CLF-DEMO eat-PST-if get angry-EMP
'If you even eat one slice of bread, I'll get angry at you.'

The type of NPIs belongs to the class of broad NPIs because the NPIs are used in the environments without canonical negation, such as questions, conditionals, and affective predicates like *surprise* as in (103).

(103) hito-ri-demo kita-to-wa odoroi-ta
one-CLF-DEMO come-CONN-TOP surprise-PST
'I was surprised that anyone came.'/ 'I was surprised that even one person came.'

In Japanese, when the 'one'-phrases are attached by different kinds of particles, they yield different types of NPIs. The strong and weak NPIs show a complementary distribution.

Korean also has the distinction between strict and broad NPIs. The 'one' -phrases with the particle TO are strict NPIs (Lee 2003) since they are required to appear with negation, as shown in (104). They are not allowed in other NPI-licensing environments such as questions and conditionals, as can be seen in the ungrammaticality of sentence (105).

(104) Korean
na-nun [han-mati-to] malha-ci-anh-ass-ta
I-TOP one-CLF (a small token of sound)-TO say-CONN-NEG-ANT-DECL
'I didn't say even a word.'

(105) Korean
*ku-nun [han-mati-to] ha-ess-ta
he-TOP one-CLF (a small token of sound)-TO say-ANT-DECL
'Did he say a word?'

Korean ‘one’-phrases can also be used to form broad NPIs if they are attached by the marker IRATO. The kind of NPIs behaves as broad NPIs. For instance, they are allowed in conditionals, as in (106). The ‘one’-phrases with TO and those with IRATO are complementary in contexts.

(106) Korean
han-saram-irato o-myen malhay
one-person-IRATO show up-if say
‘Tell me if even one person shows up.’

In Japanese and Korean, different morphemes can be used to distinguish strict and broad NPIs. The ‘one’-phrases with MO in Japanese and TO in Korean have a strict distribution. They do not appear in nonveridical environments that are not negative. The “strict” property of MO in Japanese and TO in Korean is also reflected in their adverbial function or fixed expressions, which are later developments than the nominal function. For example, the combination of Japanese MO and an expression of a small amount in (107) and (108) is viewed as a frozen expression. They function as adverbial NPIs and they are restricted to only negative environments.

(107) Japanese
[sukosi-mo] ki-ni site-i-nai
a little-MO care-DAT do-ASP-NEG
‘I do not care about it at all.’

(108) Japanese
[chitto-mo] koe-wa todoka-nai
a little-MO voice-TOP reach-NEG
‘The voice does not reach there at all.’

Analogously, some ‘one’-phrases with MO also have developed as adverbial minimizers. As shown in (109), the ‘one’-phrase behaves as an adverbial to modify the predicate. The adverbial minimizer keeps the property as a strict NPI when it is used as a nominal.

(109) Japanese
boku-wa [ichi-do-mo] chichi-to atte-i-nai
I-TOP one-time-MO father-with meet-ASP-NEG
‘I have not seen my father even once (since then).’

The ‘one’-phrase in (110) can be used to refer to a wide range of objects since the classifier is a general classifier and the noun of the numeral phrase does not appear. The phrase with MO has become a frozen expression in Japanese and the type of minimizer adverbials formed with MO must be used under negation.

(110) Japanese
[hito-tsu-mo] mooshite-i-nai.
one-CLF-MO say-ASP-NEG
‘I have said nothing.’

Similarly, in Korean, when the ‘one’-classifier combination is stressed and marked by TO, the entire phrase has become frozen as a strict NPI. Moreover, the combination of a stressed ‘one’

and TO without a classifier has developed as an adverbial NPI, as shown in (111). The adverbial NPI is also restricted to appearing in negative environments.

(111) Korean

John-nun	yangsin-i	hana-to	eps-ta
John-TOP	conscience-NOM	one-TO	not exist-DECL

'John has no conscience at all.'

The examples of more fixed usages of minimizers show that 'one'-phrases in the two numeral classifier languages have formed a distinct class of NPIs – strict NPIs. The combination involving the numeral 'one' and a scalar particle must behave as a strict NPI regardless of its grammatical category.

The strict and broad NPIs based on 'one'-phrases in Japanese and Korean can be distinguished by the particles attached to the 'one'-phrases. Mandarin Chinese 'one'-phrases as NPIs have a different story. Mandarin does not rely on different markers to distinguish the two kinds of 'one'-phrases as NPIs; instead, Mandarin is known for its asymmetry between the preverbal and postverbal positions, as discussed in Section 5.3.1.2. My earlier analysis has shown that the asymmetry is also reflected in how 'one'-phrases as minimizers behave preverbally and postverbally. To briefly recapitulate, Mandarin 'one'-phrases can appear postverbally as in (112) and preverbally as in (113), but the preverbal position can accommodate a wider array of 'one'-phrases. This is because the position is obligatorily focused and is profiled in the information structure, which is a necessary condition for scalar inferences.

(112) 他沒說一個字

tā	méi	shuō	[yí	ge	zì]
he	NEG	say	one	CLF	word

'He didn't say even a word.'

(113) 他一個字也/都沒說

tā	[yí	ge	zì]	yě/ dōu	méi	shuō
he	one	CLF	word	YE/ DOU	NEG	say

'He didn't say even a word.'

Based on the asymmetry, I propose that the strict NPI and broad NPI interpretations of 'one'-phrases can be distinguished by the division of the preverbal and postverbal positions. For instance, in Mandarin, 'one'-phrases can behave as NPIs in conditionals, as shown in (114); however, they are only allowed to appear postverbally. They are not acceptable in the OV word order, as shown in the ungrammaticality of (115).

(114) 如果你敢說一個字，我就殺了你！

rúguǒ	nǐ	gǎn	shuō	[yí	ge	zì]，	wǒ	jiù	shā	le	nǐ
if	you	dare	say	one	CLF	word	I	then	kill	PTC	you

'If you dare say even a word, I will kill you.'

(115) *如果你一個字也敢說，我就殺了你！

*rúguǒ nǐ gǎn [yí ge zì] yě/dōu shuō，
if you dare one CLF word YE/DOU say

wǒ jiù shā le nǐ
I then kill PTC you

Intended reading: 'If you dare say even a word, I will kill you.'

Mandarin 'one'-phrases can also be used as NPIs in the environments with affective predicates, as in (116). However, the same constraint in the conditionals can be observed in contexts with affective predicates. This type of broad 'one'-phrases cannot appear in the OV word order, as shown in (117).

(116) 我很懷疑他有一點良心

wǒ hěn huáiyí tā yǒu [yì diǎn liángxīn]
I very doubt he have one CLF conscience
'I doubt that he has even a little bit of conscience.'

(117) *我很懷疑他一點良心也有

*wǒ hěn huáiyí tā [yì diǎn liángxīn] yě/dōu yǒu
I very doubt he one CLF conscience YE/DOU have
'I doubt that he has even a little bit of conscience.'

Mandarin 'one'-phrases as NPIs are different from those in Japanese and in Korean in that Mandarin ones seem to behave more toward broad NPIs. In addition to negation, Mandarin 'one'-phrases can appear in nonveridical environments which are not negative, as in (114) and (116). However, a clear distinction can be found in their asymmetrical distribution in preverbal and postverbal positions. Their use as broad NPIs is not allowed preverbally. The distribution is relevant to the information structure of the SVO and SOV word orders, which has been discussed in Chapter 4. In numeral classifier languages, the 'one'-phrases as minimizers require focal prominence in addition to negation in order to induce scalar inferences. Mandarin OV construction is motivated for profiling the preverbal constituent, which departs from the canonical VO word order. The OV construction is employed for emphasizing the information which is not foregrounded in the VO word order. Moreover, the OV construction has been an unambiguous environment for minimizers in the diachronic development of Mandarin 'one'-phrases. The connection between the focal prominence of the OV construction and strict minimizers has remained unchanged. Therefore, the difference in the OV and VO word orders regarding focus functions serves to distinguish the strict and broad types of 'one'-phrases as NPIs in Mandarin Chinese.

'One'-phrases are widely used as minimizers crosslinguistically because the numeral 'one' functions as a cognitive anchor on a scale which is processed reversely for inducing scalar inferences. When 'one'-phrases are used as NPIs, the division of strict NPI and broad NPI interpretations is distinguished by the constructions where 'one'-phrases occur. In numeral classifier languages such as Korean and Japanese, a clear distinction between strict and broad NPIs is specified by the particle co-occurring with the polarity items. In Mandarin Chinese, the difference depends on constructions with different information structure for distinction. This

phenomenon shows that strict NPIs require more focal prominence than broad NPIs. An ensuing question is why 'one'-phrases have the tendency to form a distinct class as strict NPIs. How minimizers differ from other indefinite polarity items will be discussed in the next section.

5.4.2 Differences of scales between 'one'-phrases as minimizers and other kinds of NPIs

In Mandarin Chinese, Japanese, and Korean, 'one'-phrases are widely used as NPIs. They form a class distinct from other types of NPIs although they overlap in some of the functions. All of these languages have different kinds of NPIs which correspond to English *any*-series such as *any*, *anyone*, and *anything*. I will compare minimizers and indefinite NPIs below. With respect to indefinite NPIs, the three languages are similar in that they make extensive use of the combination of interrogatives and a particle to form NPIs. For example, in Modern Mandarin Chinese, the bare interrogatives plus either YE or DOU are used as NPIs. As shown in (118), the interrogative 什麼 *shéme* 'what' with the particle DOU/YE forms an NPI. Japanese has the same formation of NPIs. As shown in (119), the combination of interrogative and the particle MO behaves as an NPI. Similarly, when Korean indefinites are marked by the particle TO, they are commonly used as NPIs. It is noteworthy that the particles used for NPIs are the same ones used to form minimizers of 'one'-phrases.

(118) Mandarin Chinese
我什麼都/也不知道
wǒ [shéme-**dōu/yě**] bù zhīdào
I what-DOU/YE NEG know
'I don't know anything.'

(119) Japanese
nani-mo sira-nai
what-MO know-NEG
'I do not know anything.'

(120) Korean
ku-nun amu-to/ nwukwu-to an po-ass-ta
he-TOP any-TO who-TO NEG see-PST-DECL
'He did not see anybody.'

The indefinite NPIs in Japanese, Korean, and Mandarin are formed with the same particles for 'one'-phrases as minimizers. The following comparison will focus on the 'one'-phrases with MO, TO, and DOU/ YE and indefinite NPIs with MO, TO, and DOU/ YE. As discussed in Section 5.4.1, 'one'-phrases with MO, TO and DOU/ YE behave as strict NPIs, which appear in negative environments. The NPIs formed from indefinite pronouns differ from those formed with 'one'-phrases in that they are not limited to appear only with negation. In addition, the 'one'-phrases as minimizers sound more emphatic, whereas indefinite NPIs can sometimes sound more neutral than emphatic, as observed in Israel (2011). The question is then how the two types of NPIs differ in meanings. Since minimizers are classified as emphatic NPIs (Israel 2011), the main difference should lie in the emphatic effects. I will first introduce the emphatic effects and then move on to the issues regarding how the emphatic effects arise.

The contrast between emphatic versus non-emphatic indefinites has been briefly mentioned in Haspelmath (1997).[10] Different strategies are used to make a distinction between emphatic and non-emphatic indefinites in different languages. For example, in English the distinction between emphatic and non-emphatic indefinites is only marked by the stress, as shown in the contrast between (121) and (122). The subtle difference is that (122) involves a scale of alternative values of which the chosen value is the endpoint, but no such scale appears in (121). Although Haspelmath (1997) admits that it is not clear whether only the stressed indefinite involves a scale, the sentence with the stressed indefinite is claimed to be intuitively 'stronger'.

(121) I didn't SEE anything.

(122) I didn't see ANYTHING.

In many languages, two different indefinites are used to render the two meanings. Mandarin Chinese is such a case, as shown in the contrast between (123) and (124). The concept of scale endpoint is entailed in (124), but there is no such implication in (123). Importantly, *rènhé* 'any' in (124) usually carries a focal stress.

(123) 我沒聽說什麼人來過

wǒ	méi	tīngshuō	**shéme**	rén	lái-guò
I	NEG	hear	what	people	come-ASP

'I haven't heard that anyone CAME.'

(124) 我沒聽說任何人來過

wǒ	méi	tīngshuō	**rènhé**	rén	lái-guò
I	NEG	hear	any	people	come- ASP

'I haven't heard that ANYONE came.'

The observation of the contrast of emphatic versus non-emphatic indefinites reveals the connection between emphasis and scales. The next question must be how scales are associated with the strength of emphasis.

Scales play an important role in creating pragmatic emphasis because they are the foundation for introducing scalar inferences. The profiling of scales can result in pragmatic enhancement. The placement of stress is used to indicate whether a scalar endpoint is profiled. For example, English *any* has long been viewed as a scalar operator (Fauconnier 1975, Kadmon and Landman 1993, Lee and Horn 1994, Haspelmath 1997, and Israel 2011). The semantic parallels between *any* and quantificational superlatives (*the easiest question*) are often used as evidence to show that *any* denotes an endpoint on a pragmatic scale. Lee and Horn (1994) push further the scalar property of *any* by proposing that *any* is equivalent to the incorporation of *even* and an indefinite. *Even* presupposes a pragmatic scale associated with the sentence in which it occurs (Horn 1971), and therefore the phrase *any* NP equates the phrase *even a* NP. However, *any* is not always an emphatic scalar operator; instead *any* can be neutral in some cases (Israel 2011). The stressed *any* bolded in (126) is emphatic and involves reference to a scalar extreme,

[10] The term emphasis is used in a deliberately loose way in Haspelmath (1997). It is used to indicate any 'stronger' meanings. The line of emphatic versus non-emphatic indefinites is not further pursued in Haspelmath (1997) because the semantic distinction is considered to be very subtle and not easy to identify across languages.

while the unstressed *any* in (125) is not understood as 'even the smallest amount of water'. In other words, the *any* in (125) does not contrast with other scalar alternatives.

(125) I am very thirsty. Do you have any water?

(126) A: Do you have any water?
B: I don't have **any** water at all. I wish I could give you some.

Yet, the unstressed *any* is treated as a scalar operator in a broad sense by Israel (2011) because it still profiles an indefinite instance within a set of alternatives. The lack of stress indicates that the scalar content is not the focus of attention. Therefore, the scalar effects are relatively backgrounded. In this setting, the backgrounded scale tends to be more subjectively construed (Langacker 1990). However, whether the unstressed *any* is scalar or not is still an unsettled issue. For instance, Duffley & Larrivée (2010) and Giannakidou (2011) suggest that *any* is not intrinsically scalar, so scalarity is a side effect. Yet although how to analyze the unstressed *any* is still an ongoing debate, the consensus is that stressed *any* can have scalar entailments. Since stress is a signal of the focus of attention, the connection between focus and scalar inferences is clearly revealed.

With respect to 'one'-phrases as minimizers, these are not controversial in the issue of scalarity because the numeral plus a classifier unambiguously profile a scalar endpoint. When 'one'-phrases are interpreted as minimizers, they must receive focal stress. Since 'one'-phrases as minimizers are scalar in nature, the next question is if there is any difference between minimizers and emphatic indefinites such as English stressed *any* and Mandarin Chinese *rènhé* 'any'. Different types of NPIs within a language differ in the ways they evoke inferences. NPIs like English stressed *any* and Chinese *rènhé* 'any' are indefinites. Indefiniteness as a grammatical category is specific in the property of expressing reference. For instance, *any* is a pure indefinite because it construes a profiled instance within a set of possible instances (Haspelmath 1997). In other words, what *any* denotes is the idea of an instance. The fictive reference is labelled as "phantom instance" by Israel (1995), which refers to an instance but does not distinguish features of the instance in question. Due to this property, it lacks the ability to be anchored to a particular referent. Since *any* lacks existential import (Horn 1997), its referent is commonly something imaginable.

Any involves an imaginative process by which the hearer can freely choose from a set of alternatives in identifying referents to fill out the speaker's proposition (Horn 2005). The process of conceptualizing an indefinite can vary a great deal. Therefore, the scale evoked by *any* is entirely subjective (Israel 2011). The scale is defined not by the inherent property of referents since the referent lacks an actually existent referent. Instead, scales for the type of NPIs are structured by imaginative instances of the relevant type. The alternative instances evoked by an indefinite do not require being exhaustively ordered amongst themselves. As discussed in Israel (2011), no particular alternative needs to take more mental effort than any other to distinguish each other. Therefore, minimizers and indefinite NPIs differ crucially in ordering. The minimal value of minimizers contrasts with an ordered set of alternative values, whereas indefinite NPIs do not necessarily have a particular ordering among alternatives. In this case, only the phantom referent itself is ordered with respect to other alternatives. However, indefinite NPIs can have an ordered scale if they bear a focal stress such as English stressed *any* and Mandarin Chinese *rènhé* 'any'. When they are stressed, the phantom referent is profiled as an extreme value in a fully ordered set of alternatives. The profiled instance can thus contrast with other alternatives ordered

along a scale. The difference in the requirement of ordering alternatives clearly distinguishes emphatic NPIs from non-emphatic NPIs.

Departing from the indefinite NPIs, 'one'-phrases as minimizers always require an exhaustively ordered scale. As discussed earlier in Section 5.3.2.1, the 'one'-phrases as minimizers can denote both a quantity scale and a kind scale. Whether they highlight an objective quantity or quality scale depends on the constructions. In both cases, the numeral-classifier part of 'one'-phrases receives focal stress. The focal stress indicates that alternatives are exhaustively ordered along a scale. With respect to an objective scale, the phantom value denoted by the numeral-classifier combination is used to contrast with alternative values ordered along a quantity scale. The numeral 'one' profiles an extreme value of a scale. This profiling requires that the alternatives evoked by the numeral 'one' saliently contrast with other alternative values. The important character of 'one'-phrases as minimizers is the involvement of the numeral 'one', which obligatorily evokes a fully ordered scale. To clarify, the emphatic effects from an ordered scale can be observed in the subtle contrast between English minimizers formed with *a* and *one*, as shown in (127) and (128). With the numeral 'one', (128) is judged to be more emphatic than (127) although *a* and *one* have the same origin.[11]

(127) He didn't say **a** word.

(128) He didn't say **one** word.

In the case of a subjectively construed scale, the focal stress must also cover the noun of a 'one'-phrase. The phantom element denoted by a 'one'-phrase can contrast with a set of possible instances. Where the indefinite NP of a 'one'-phrase occurs with emphatic stress, it receives a strong scalar construal and profiles an instance on a scale where the alternative instances are fully ordered. In short, the requirement of an ordered scale is a crucial property of minimizers.

The comparison of 'one'-phrases as minimizers and other indefinite NPIs shows that 'one'-phrases as minimizers form a distinct class of NPIs. The emphatic effects arise where a profiled phantom value or instance is structured as an extreme one, which contrasts with ordered alternatives. 'One'-phrases as minimizers evoke a fully ordered scale, while indefinite NPIs do not necessarily have to. Due to the way alternatives are ordered, the 'one'-phrases as NPIs are judged to be pragmatically "emphatic" or "strong" among various types of NPIs.

5.5 Summary

This section has discussed the characteristics of minimizers in numeral classifier languages. They form a distinct class of NPIs. The conditions for 'one'-phrases to be interpreted as emphatic NPIs are relatively "strict". Negation is a necessary condition but not the whole story. Focus plays a crucial role in distinguishing scalar and non-scalar uses of 'one'-phrases. Mandarin Chinese, Japanese, and Korean differ in the surface manifestation of focus, as summarized in Table 5.3.

[11] It is noteworthy that *one* in (128) must be stressed, but *a* does not require a stress. If *a* also receives an emphatic stress, the subtlety between (127) and (128) may not be detected.

Table 5.3: Strategies of focus

Language	Strategy
Mandarin Chinese	preverbal and postverbal asymmetry, focal stress
Japanese	stressed prosody, obligatory occurrence of scalar particle
Korean	stressed prosody, obligatory occurrence of scalar particle

The ‘one’-phrases as minimizers in the three languages belong to the category of strict NPIs due to their narrow distribution. The strict ‘one’-phrases are stronger in emphatic effects when they are compared with other types of NPIs in their respective languages. The degree of emphasis is a reflection of how scales are construed in various types of NPIs. The ‘one’-phrases as minimizers must evoke an exhaustively ordered scale, which enhances scalar reasoning.

The use of expressions involving ‘one’ as minimizers is common crosslinguistically. However, ‘one’-phrases are special in numeral classifier languages because they are composed of three components: the numeral ‘one’, a classifier, and a noun. The ordering of the three components can lead to different sets of scalar inferences. Most importantly, the correlation between ordering, focus, and the choice of scales makes ‘one’-phrases more versatile.

Chapter 6

Synchronic Variations: 'One'-phrases as Minimizers in Modern Mandarin Chinese

The previous chapters have discussed how 'one'-phrases have been shaped as polarity items under the constraints of a sequence of syntactic changes in Chinese. The 'one'-phrases gradually came to be associated with OV word order when they were used as minimizer NPIs during the time span from Old Chinese to Early Mandarin Chinese. Until this day, 'one'-phrases remain the main source of minimizer NPIs in Modern Mandarin Chinese. This chapter will associate the synchronic distribution of Modern Mandarin minimizers with their diachronic development. In Modern Mandarin, negation is still a prototypical condition for 'one'-phrases to be interpreted as minimizers. However, this alone is not sufficient to secure the minimizer interpretation since 'one'-phrases are a polysemous construal. The minimizer function tends to appear in the constructions with focal prominence, such as the OV construction, scalar DOU/YE construction, and degree modification. In Modern Mandarin, the association of minimizers with these constructions is even more salient than that in the previous stages of Chinese. The result is increased distinction among various readings of 'one'-phrases, and the development of a polysemous model.

Although fixed 'one'-phrases developed later than the non-fixed 'one'-phrases, they appear to have a stronger connection with the OV construction in Modern Mandarin. This asymmetry reflects the fact that fixed 'one'-phrases have been more fully grammaticalized as a specific construction than non-fixed 'one'-phrases. In this Chapter, I will discuss how the requirement of focal prominence is reflected in the constructionalization of fixed 'one'-phrases in Modern Mandarin.

Section 6.1 provides an overview of the synchronic distribution of 'one'-phrases as minimizers in Modern Mandarin, focusing on how different types of negation influence the distribution in VO and OV word orders. Section 6.2 discusses the asymmetrical development of fixed and non-fixed 'one'-phrases in Modern Mandarin. The former have an additional function as an adverbial modifier through the process of constructionalization, while this process is not found in the latter. Section 6.3 covers the variants of 'one'-phrases as minimizers. Their behavior under the constraints of the two word orders will be related to the functional difference of the word orders. A summary of these synchronic variations will be provided in Section 6.4.

6.1 The Distribution of Minimizers in Two Word Order Patterns in Modern Mandarin

The Modern Mandarin 'one'-phrase data have been collected from *Chinese Gigaword*[1]. The combination of 'one'-phrases and three types of negation are examined based on two types

[1] The *Chinese Gigaword Corpus* contains approximately 1.1 billion Chinese characters. The data come from two main sources. One is from Taiwan's Central News Agency (around 700 million characters) and the other is from

of word orders, OV and VO. The three types of negation include the generic/ stative negator 不 *bù*, the negator for negating the instantiation of an event 沒 *méi*, and the existential negative predicate 沒有 *méiyǒu* 'there be not' (Li and Thompson 1981). The three negators are used in different environments. 不 *Bù* is the most general and neutral form of negation. It is used for simple denial of assertions and for refusal, as shown in (1) and (2).不 *Bù* negator does not involve completion regardless of the time frame, past or present

(1) 他不聰明
tā bù cōngmíng
he NEG smart
'He is not smart.'

(2) 他不讀書
tā bù dúshū
he NEG study
'He does/did not study.'

When instantiation of events is concerned, the negator 沒 *méi* is used. The form 沒 *méi* is used when the main verb of the sentence is 有 *yǒu*. 有 *yǒu* has a number of different meanings, such as existential, possessive, perfective, presentational, and assertive (Cheng 1978, Huang 1987, Tsai 2004b), as shown in (3)-(7). Tsai (2002b, 2004b) divides the functions into two groups based on their argument structure: possessive and existential 有 *yǒu* is a two-place predicate appearing in the form of NP+ *yǒu* +NP, while perfective, presentational, and assertive *yǒu* is a one-place predicate taking a proposition as its argument and appearing in the structure of *yǒu* +clause. The perfective and assertive functions appear only in the negative form.[2] In (3), the NP following *yǒu* is the unaccusative subject.[3] It appears postverbally due to the structure of the Mandarin existential construction, and therefore the postverbal NP looks as though it is in the object position of the canonical VO order. In (4), the possessive *yǒu* and its two arguments occur in the canonical SVO word order. The presentational function in (5) is claimed to be equivalent to the English existential construction. In this construction, the NP introduced by *yǒu* must be indefinite. This presentational function is the result of grammaticalization of the locative-existential *yǒu*. As proposed by Tsai (2002b), the development started from possessive *yǒu*, locative-existential *yǒu*, and then to presentational *yǒu*. In the process, the verb *yǒu* gradually became the model *yǒu*. Concomitantly, *yǒu* developed as a one-argument predicate from a two-argument predicate. Although the function of the modal *yǒu* in (6) is called perfective in the literature[4], I use the label non-instantiation *yǒu* in order to better characterize its nature of denoting the non-instantiation of events instead of the completion of events. The assertive *yǒu*

China's Xinhua News Agency (around 400 million characters). The data from this corpus are supposed to reflect the current use of Modern Mandarin in different geographical areas and cultures. *Chinese Word Sketch*, the application of Word Sketch Engine to *Chinese Gigaword Corpus*, is a search platform provided by *Academia Sinica*.

[2] Other Chinese dialects such as Southern Min and Taiwanese Southern Min have all the five functions in positive environments.

[3] Tsai (2002b) treats the locative NP as the subject of *yǒu*, and points out that the NP following *yǒu* must be indefinite as a characteristic of existential constructions (Heim 1987).

[4] In Tsai (2002b)'s analysis, the perfective *yǒu* functions as an aspectual inflectional affix conveying the completion of an event. However, 'students have not come' is not equivalent to the meaning of (6). The *yǒu* emphasizes more the instantiation of an event.

combined with the negator in (7) servers to indicate negation of a prior assertion. This function of *yǒu* emphasizes the truth condition of the proposition. For instance, (7) emphasizes the negation of the proposition that students did show up.

(3) 桌子上有書 [locative-existential]
zhuōzi shàng yǒu shū
table on YOU book
'There is a book on the table.'

(4) 我有一輛車子 [possessive]
wǒ yǒu yí liàng chēzi
I YOU one CLF car
'I have a car.'

(5) 有人走了 [presentational]
yǒu rén zǒu le
YOU people leave PRF
'Some people left.'

(6) 學生沒有來 [perfective/ non-instantiation]
xuéshēng méi yǒu lái
student NEG YOU come
'The students did not come.'

(7) 我沒有很挑剔！ [assertive/ emphatic]
wǒ méi yǒu hěn tiāotì！
I NEG YOU very picky
'I am not very picky!'

The existential verb 有 *yǒu* can be optionally omitted when the negator 沒 *méi* appears. This chapter concerns two major functions of the negative predicate 沒(有) *méi(yǒu)*. The first one is negating the instantiation of an event, as shown in (8). 沒 *méi* in (8) negates the instantiation of the drinking event. This function is different from the generic/ stative negator 不 *bù*. As shown in (9), 不 *bù* negates habituals or states.

(8) 他沒喝酒[5]
tā méi hē jiǔ
he NEG drink wine
'He didn't drink wine.'

[5] The Mandarin spoken in Taiwan allows the perfective *yǒu* in positive environments, as shown in (i). *Yǒu* refers to the instantiation of the drinking event, contrasting with (8). The use of *yǒu* in (i) is a combination of Southern Min perfective *yǒu* and assertive *yǒu* (Tsai 2002b).

(i) 他有喝酒
tā yǒu hē jiǔ
he YOU drink wine
'He did drink wine.'

(9) 他不喝酒

tā	bù	hē	jiǔ
he	NEG	drink	wine

'He doesn't drink wine.'/ 'He refused to drink wine.'

The other major function of the negator 沒(有) *méi(yǒu)* is the negation of the existential verb 有 *yǒu*, which is the main focus in this chapter. As in (10), the negator 沒有 *méiyǒu* includes both negation and an existential verb. The existential verb 有 *yǒu* is optional when 沒 *méi* appears.

(10) 沒有水了

méi	yǒu	shuǐ	le
NEG.EXT	there be	water	sentence-final particle

'There is no more water.'

This section concerns the interaction between 'one'-phrases as minimizers and the three types of negation, stative or generic 不 *bù*, event-non-instantiation negator 沒 *méi*, and existential negative predicate 沒有 *méiyǒu*. In terms of syntactic positions, 不 *bù* and non-existential 沒 *méi* follow the subject and precede the verb, while existential negative predicate 沒有 *méiyǒu* generally precedes the NP whose existence is being introduced. Its position is the same as its positive counterpart, existential predicate 有 *yǒu*. Please refer to Chapter 1 for the overview of the Mandarin existential construction. As shown in (11), the existence of 'one person' is introduced by existential predicate 有 *yǒu*. It is also possible to have a locative NP preceding 有 *yǒu* (Huang 1987), as in (12). Due to the specific arrangement of the existential verb and the unaccusative subject in the Mandarin existential construction, the NP in the position of the unaccusative subject patterns like the object in the canonical VO order. As in (11) and (12), the 'one'-phrases are preceded by an existential verb. As discussed in Chapter 2, I follow Huang's (1987) analysis of Mandarin existential sentences and include V subject/ subject V in this broader definition of VO/ OV construction due to the shared properties between them. The combination of an existential verb followed by a postverbal NP is labeled as VO order for the purpose of comparing how word order influences the interpretation of minimizers under the scope of various negators. When the focus construction is involved, the NP whose existence is concerned precedes the existential predicate, as shown in (13). Analogously, the combination of a preverbal NP and the existential predicate is labeled as OV order.

(11) 有一個人很討厭你 [*Chinese Gigaword*]

yǒu	[yí	ge	rén]	hěn	tǎoyàn	nǐ
EXT.V	one	CLF	person	very	dislike	you

'There is a person who dislikes you very much.'

(12) 桌上有一本小說很有趣[*Chinese Gigaword*]

zhuō	shàng	**yǒu**	[yì	běn	xiǎoshuō]	hěn	yǒuqù
table	top	EXT.V	one	CLF	novel	very	interesting

'There is a novel on the table which is very interesting.'

(13) 桌上一本書也沒有

zhuō	shàng	[yì	běn	shū]	yě	méi	**yǒu**

desk top one CLF book YE NEG EXT.V
'There is not even a book on the desk.'

The three types of negation have different influences on 'one'-phrases as minimizers regarding their distribution in word orders. The three types can be divided into two groups based on the principle of existentiality because 'one'-phrases as minimizers have a particular relation with existential constructions. The following discussion will begin with non-existential negators 不 *bù* and 沒 *méi* and continue to the existential negative predicate 沒有 *méiyǒu*.

6.1.1 'One'-phrases as minimizers under non-existential negation

For each of the non-existential negators 不 *bù* and 沒 *méi*, the two combinations of **NEG-V…'one'** and **'one'…NEG-V** are collected from the corpus. The former targets 'one'-phrases in VO order, while the latter targets 'one'-phrases in OV order. The 'one'-phrases as minimizers in the two word orders are summarized in Figure 6.1.

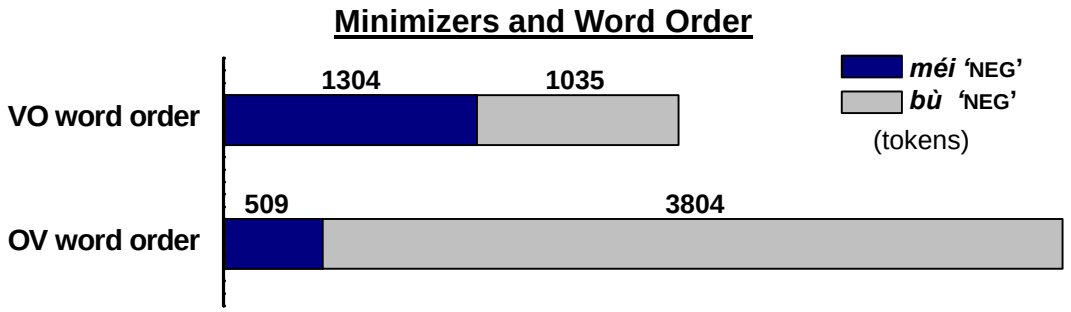


Figure 6.1: 'One'-phrases as minimizers in VO and OV orders under non-existential negation

Notably, the overall number of 'one'-phrases as minimizers in OV order outnumbers that in VO order. The distribution shows that the frequency of 'one'-phrases as minimizers in OV word order has become much more salient when compared to that in the previous stages of Chinese. It should be mentioned that the genres from *Chinese Gigaword* are restricted to newspaper and press releases. In other words, the 'one'-phrases as minimizers here are collected from written Chinese, which is stylistically formal. SVO word order is normally preferred in a formal style. Even given the restriction of genres, however, there are still more tokens in OV order than in VO order, as indicated in Figure 6.1. The association between minimizers and OV order in Modern Mandarin should be more prominent when the genres expand to include colloquial Mandarin.

The asymmetry of VO and OV orders in terms of accommodating 'one'-phrases as minimizers is reflected in how the minimizers behave in the two orders, which will be discussed below. The 'one'-phrases with negator 不 *bù* or 沒 *méi* in VO order may be interpreted in various ways. The interpretation as minimizers, as shown in (14)-(17), is only one of these ways. In Modern Mandarin, the inclusion of a classifier in numeral phrases has become mandatory. Classifiers overtly specify the basic unit of the object since they denote some prominently perceived or imputed properties of the entity to which associated nouns refer, as defined in Allan (1977). They are compatible with the concept of a minimal unit and express the concept overtly. For example, the classifiers in (14) and (15) designate the smallest atomic unit, and the measure

words in (16) and (17) refer to the smallest quantity. With the classifiers, the 'one'-phrases unambiguously profile the minimal unit of a scale, which is the foundation for inducing scalar inferences.

(14) 看不到一張友善的面孔 [*Chinese Gigaword*]
kàn bú dào [yì zhāng yǒushànde miànkǒng]
see NEG ASP one CLF friendly face
'did not see even one friendly face'

(15) 沒流過一滴淚 [*Chinese Gigaword*]
méi liú guò [yì dī lèi]
NEG tear ASP one drop tear
'hasn't even shed a tear'

(16) 不喝一口水 [*Chinese Gigaword*]
bù hē [yì kǒu shuǐ]
NEG drink one MW(mouth) water
'did not drink even one mouthful of water'

(17) 沒喝群眾一盅酒 [*Chinese Gigaword*]
méi hē qúnzhòng [yì zhōng jiǔ]
NEG drink people one MW wine
'hasn't drunk a cup of wine from the people'

In addition to the function of minimizers, 'one'-phrases can also function as indefinite referential expressions under negation in VO order, as in (18) and (19), where the 'one'-phrase is the object of the verb. In these examples, the 'one'-phrases emphasize the indefiniteness instead of the quantity of the denotatum; this is reflected in the corresponding English translation '**a** NP'. In the referential function, the numeral 'one' cannot be substituted with other numerals because 'one' cannot contrast with other numerals.

(18) 我們不需要一個獨立的國家 [*Chinese Gigaword*]
women bù [xūyào]$_{v}$ [yí ge dúlìde guójiā]$_{o}$
we NEG need one CLF independent country
'We don't need an independent country.'

(19) 我不想成為一位政治領袖 [*Chinese Gigaword*]
wǒ bù [xiǎng chéngwéi]$_{v}$ [yí wèi zhèngzhì lǐngxiù]$_{o}$
I NEG want become one CLF political leader
'I don't want to become a political leader.'

The 'one'-phrase under negation in VO order can also be a canonical numeral phrase denoting quantity, as in (20) and (21). In the two examples, the numeral 'one' can be used to contrast with other numerals. The numeral 'one' can be replaced with other numerals.

(20) 這類事情很可能不止一件 [*Chinese Gigaword*]

zhè	lèi	shìqíng	hěn	kěnéng	bù	zhǐ	[yí	jiàn]
this	kind	affair	very	likely	NEG	stop	one	CLF

'It is likely that this is not the only one of this kind of affair.'

(21) 中國穩定不應繫於一人 [*Chinese Gigaword*]

zhōngguó	wending	bù	yīng	xì	yú	[yì	rén]
China	stability	NEG	should	tie	at	one	person

'The stability of China should not be tied to one person.'

These different interpretations of 'one'-phrases show that VO order under negation can have various interpretations. A minimizer reading is not guaranteed.

However, when 'one'-phrases appear under negation in OV word order, they are unambiguously understood as minimizer NPIs, as in (22) and (23). The 'one'-phrases emphasize total negation.

(22) 波音公司不賣飛機，一架也不賣 [*Chinese Gigaword*]

Pōyīn	gōngsī	bú	mài	fēijī，	[yí	jià]	yě	bú	mài
Boeing	company	NEG	sell	airplane	one	CLF	YE	NEG	sell

'Boeing does not sell airplanes. It does not sell even one airplane.'

(23) 送了他四本書，他一本都沒看完 [*Chinese Gigaword*]

sòng	le	tā	sì	běn	shū，	tā	[yì	běn]	dōu	méi	kàn	wán
give	PRF	he	four	CLF	book	he	one	CLF	DOU	NEG	read	ASP

'…gave him four books. He did not finish even one book.'

No tokens from the corpus show that 'one'-phrases in the preverbal object position are used as indefinite referential expressions or quantity-denoting phrases. This is because the focus of the preverbal object position in OV order forces 'one'-phrases to be interpreted as minimizers. The specific connection of the minimizer reading and OV order is already attested in Old Chinese, but not frequently. Their marginal existence has not been discussed in the literature of Mandarin NPIs. The connection became a little bit more frequent in Middle Chinese due to a series of word order changes; it became statistically prominent in Early Mandarin Chinese. According to the corpus data of Early Mandarin Chinese, the tokens of 'one'-phrases as minimizers under non-existential negation in OV order even slightly exceed those in VO order. The association of minimizers and OV word order is even stronger in Modern Mandarin. The diachronic development of the association has been motivated by the requirement of focal prominence for a minimizer interpretation. A detailed discussion of the distribution of 'one'-phrases is provided in Chapter 2.

The distribution of minimizers in Modern Mandarin clearly illustrates the asymmetry of OV and VO orders in terms of securing a minimizer NPI reading. Since VO order is open to multiple interpretations, additional mechanisms, such as the occurrence of 任何 *rènhé* 'any' and 'one'-phrases, guarantee the minimizer reading. Mandarin 任何 *rènhé* is functionally similar to English NPI *any*. In VO order, when 任何 *rènhé* 'any' is added to a 'one'-phrase under negation, the 'one'-phrase must be understood as a minimizer NPI, as shown in (24) and (25).

(24) 不放棄任何一次協商機會 [*Chinese Gigaword*]
bú fàngqì **rènhé** [yí cì xiéshāng jīhuì]
NEG give up any one CLF negotiation opportunity
'did not give up any chance of negotiation'

(25) 去年沒買任何一本書 [*Chinese Gigaword*]
qùnián méi mǎi **rènhé** [yì běn shū]
last year NEG buy any one CLF book
'last year did not buy any book'

Interestingly, both 任何 *rènhé* 'any' and minimizers are polarity items. Each of them can be used alone for scalar readings, as shown in (26) and (27). When 任何 *rènhé* 'any' and the minimizer appear in VO order, their associated NPs have prosodic prominence or emphatic stress. This indicates that they profile an extreme value in an ordered set of alternatives. Since both of them occur in a scalar construal, they induce similar scalar inferences. Although the subtle differences between the two types of polarity items are hard to distinguish in the VO order, it is clear that the combination of two polarity items as in (25) has a stronger emphatic effect. Importantly, such a combination must be an NPI. It does not allow alternative interpretations.

(26) 去年沒買任何書
qùnián méi mǎi **rènhé** shū
last year NEG buy any book
'last year did not buy any book'

(27) 去年沒買一本書
qùnián méi mǎi [yì běn shū]
last year NEG buy one CLF book
'last year did not buy any book'

In contrast, the 'one'-phrases under negation in OV word order are not ambiguous in nature. In this case, the addition of 任何 *rènhé* 'any' does not help much in terms of turning the 'one'-phrases into minimizers. Following this logic, there should be fewer cases of 任何 *rènhé* 'any' modifying 'one'-phrases in OV word order. The prediction turns out to be true, as reflected in the difference regarding the frequency of co-occurrence of 任何 *rènhé* 'any' with 'one'-phrases in VO and OV word orders. As shown in Figure 6.2, 任何 *rènhé* any' appears mostly in VO order.任何 *rènhé* 'any' is barely found in OV order.

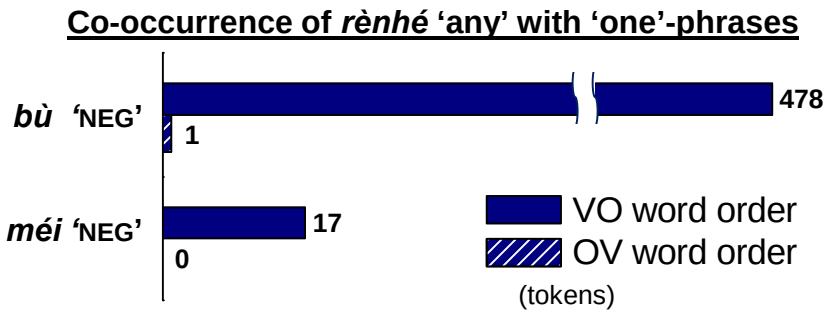


Figure 6.2: Co-occurrence of *rènhé* 'any' and 'one'-phrases as minimizers in VO and OV orders

The sharp contrast of the occurrences of 任何 *rènhé* 'any' in the two word orders again shows that OV word order is a more ideal position for 'one'-phrases to be interpreted as minimizers. The information structure of OV order can ensure that 'one'-phrases under negation are understood as minimizers, while VO order may need additional elements to make a minimizer reading unambiguous. The addition of the NPI *rènhé* 任何 'any' to 'one'-phrases can be viewed as a strategy to fully distinguish the minimizer function from other readings of 'one'-phrases in VO word order.

In Modern Mandarin, the type of focus in OV word order becomes overtly specified. The 'one'-phrases as minimizers in OV order are now accompanied by the scalar particles, 也 *yě* and 都 *dōu*. The two scalar particles are closely related to minimizers because their diachronic development of the scalar meaning has been shaped by 'one'-phrases as minimizers, as discussed in Chapter 5. The involvement of scalar particles is the result of creating maximal distinction between various types of focus carried in the OV construction. The scalar particles emerged in OV word order around Early Mandarin, but they were not a requirement at the time. According to the corpus data, the percentage of the 'one'-phrases in OV order marked by the scalar particles increased from 23 % to 44 % from Early Mandarin Chinese I to Early Mandarin Chinese II. The increase reaches its peak in Modern Mandarin, where the great majority of the 'one'-phrases as minimizers in OV word order co-occur with the scalar particles, as shown in Figure 6.3.

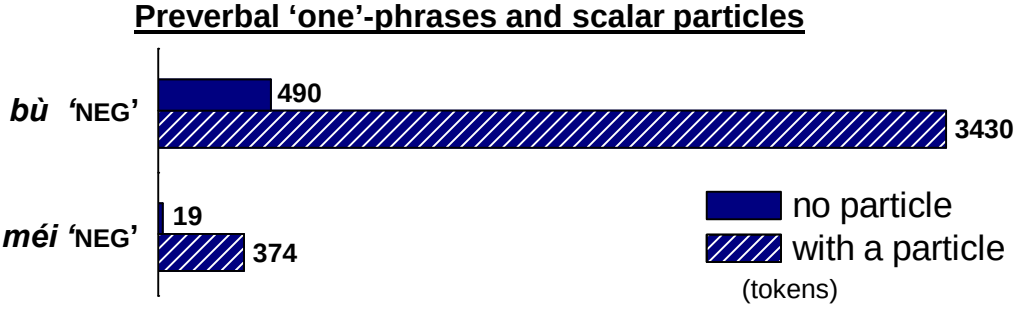


Figure 6.3: Involvement of the scalar particles in OV order containing 'one'-phrases as minimizers

The 'one'-phrases which lack a scalar particle form a distinct category for conveying a formal style. This class of minimizers is more archaic, and may be viewed as vestiges from earlier periods of Chinese. The 'one'-phrases of this category have two properties which characterize the formal style. First, the majority of them are fixed expressions or idioms, as shown in (28) and

(29). The more literal phrases of 'one shred' and 'one seed' refer to small objects. They are typical minimizers for emphatic effects. These two idiomatic expressions can be dated back to Old Chinese. They keep the syntactic characteristics of Old Chinese, where focus-sensitive particles were not obligatory in OV word order. If scalar particles were added to the two expressions, they would sound strange because of the mixture of contemporary and archaic Chinese.

(28) 公私分明，一絲不苟 [*Chinese Gigaword*]
gōng sī fēn míng， [yì sī] bù gǒu
public private separate clear one shred NEG mess up
'…separate public and private interests, and not mess up one shred' [an idiom to meaning 'scrupulous']

(29) 要能公正無私，一介不取 [*Chinese Gigaword*]
yào néng gōngzhèng wú sī， [yí jiè] bù qǔ
must be able to fair NEG private one seed NEG take
'must be able to be impartial, and not take one seed' [an idiom meaning 'not take anything not belonging to oneself']

Second, preverbal 'one'-phrases without scalar particles tend to appear in parallel clauses, as shown in (30) and (31). The parallel clauses are normally used in slogans for stylistic formal symmetry. This type of 'one'-phrases also sounds formal because they look as though they are imitations of archaic forms. The tendency of appearing in dependent clauses instead of independent clauses, which are canonical, shows that the form without a scalar particle is not the typical use of minimizers in Modern Mandarin.

(30) 一趟不白走，一句不白問 [*Chinese Gigaword*]
[yí tàng bù bái zǒu]， [yí jù bù bái wèn]
one trip NEG in vain walk one sentence NEG in vain ask
'not have any trip for nothing and not ask a sentence for nothing'

(31) 安全一事不出，紀律一章不違 [*Chinese Gigaword*]
ānquán [yí shì bù chū]， jìlǜ [yì zhāng bù wéi]
safe one thing NEG happen discipline one chapter NEG violate
'With respect to safety, not a single accident happens. With respect to discipline, not a single rule is violated.'

The preverbal 'one'-phrases without scalar particles thus have their own syntactic and pragmatic characteristics, departing from typical contemporary use. As indicated in Figure 6.3, the majority of the preverbal minimizers occur with the scalar particles. The canonical form of minimizers in OV order is shown in (32) and (33), where the occurrence of the particles clearly indicates scalar focus and reinforces the scalar nature of their associated 'one'-phrases.

(32) 倒！一瓶也不留 [*Chinese Gigaword*]
dào！ [yì píng] **yě** bù liú
pour out one bottle YE NEG keep
'Pour (them) out! Don't keep even a single bottle.'

(33) 家裡的牛羊一隻都沒損失 [*Chinese Gigaword*]
jiālǐde niú yáng [yì zhī] **dōu** méi sǔnshī
in the house cow sheep one CLF DOU NEG lose
'…did not lose even a single cow or sheep'

In brief, the synchronic variation of 'one'-phrases as minimizers in terms of co-occurrence with scalar particles is rooted in the diachronic development of scalar particles in OV word order.

Although OV order is apparently a more ideal place for minimizer 'one'-phrases as minimizers, there are still a fair number of them in VO order, as shown in Figure 6.3. This is partly due to the syntactic constraints of OV order. VO word order allows the Mandarin double object construction. As shown in (34) and (35), the double object construction involves the form, Subj V Obj_1 Obj_2, where the 'one'-phrase (Obj. 2) is the direct object of the verb. The focal stress of the two examples falls on the 'one'-phrase, which indicates that the 'one'-phrase is used as an emphatic NPI. However, OV order can accommodate only one object argument. In OV order, the preposed object must be the direct object, as shown earlier in (32); the "indirect" object cannot be instantiated, so the order is simply OVS.

(34) 沒喝我們一口水，卻像親兄弟一樣關心 [*Chinese Gigaword*]
méi hē women$_1$ [yì kǒu shuǐ]$_2$，què xiàng qīn xiōngdì
neg drink us one mouth water but alike close brother
yíyàng guānxīn
same care about
'(He) did not drink a mouthful of our water, but treated us like his close brothers'

(35) 大家苦幹五年，沒要國家一分錢 [*Chinese Gigaword*]
dàjiā kǔ gàn wǔ nián，méi yào guójiā$_1$ [yì fēn qián]$_2$
everyone hard work five year NEG ask for country one cent money
'Everyone worked hard for five years and did not ask the country for even a cent.'

OV order can only accommodate one preverbal object. On the contrary, VO order is relatively flexible to take 'one'-phrases as minimizers occurring in a variety of constructions, such as a double-object construction.

This section has discussed the distribution of minimizers under non-existential negation, which reveals their tendency to occur in OV word order. However, the 'one'-phrases as minimizers under existential negation have a different story, which will be discussed in the following section.

6.1.2 'One'-phrases as minimizers with existential negation

When 'one'-phrases appear with the existential negative predicate of 沒有 *méiyǒu*, the 'one'-phrases as minimizers do not show a tendency toward OV word order. This distribution is unlike the distribution under non-existential negation. In the context of 沒有 *méiyǒu*, the majority of 'one'-phrases as minimizers (13,650 tokens) appear in VO word order, while fewer than 3,000 tokens are found in OV order. Such a vast difference suggests that existential negation has a remarkable influence on the distribution of 'one'-phrases as minimizers in the two word order patterns. This phenomenon is not new to Mandarin Chinese. The discussion of the diachronic development of 'one'-phrases in Chapter 2 has already shown that 'one'-phrases in VO order outnumbered those in OV order when they occurred with existential negator 無 *wú* in Old Chinese, Middle Chinese and Early Mandarin Chinese. Even though the proportion of 'one'-phrases with negator 無 *wú* in OV order has increased over time, no periods of Chinese have more 'one'-phrases as minimizer in OV order than in VO order. The distribution implies that Mandarin existential constructions should be able to provide informative conditions in semantics and pragmatics for 'one'-phrases to be interpreted as minimizers. With respect to the syntactic properties, the existential constructions in VO order are compatible with a variety of predicate constructions which cannot fit into OV order. Due to the syntactic characteristics, the existential constructions in VO order can accommodate a larger diversity of constructions involving minimizers as compared with those in OV order.

As regards syntactic properties, the Mandarin Chinese existential negator 沒有 *méiyǒu* is the same as its positive counterpart 有 *yǒu*. The positive existential verb can appear as the only predicate of the sentence, as shown in (36). It is often preceded by a locative NP. For instance, the locative NP in (37) clearly defines the location where the existence of passengers is concerned. In (38), the locative NP delimits the range of the discussion regarding the existence of a constitution.

(36) 但是迄今還沒有一點跡象 [*Chinese Gigaword*]
dànshìqì jīn hái méiyǒu [yì diǎn jīxiàng
but till now still NEG.EXT one dot sign
'but till now there is still no sign…'

(37) 雖然機上沒有一位乘客，但這架飛機… [*Chinese Gigaword*]
suīrán **jī** **shàng** méiyǒu [yí wèi chéngkè， dànzhè jià fēijī
although flight on NEG.EXT one CLF passenger but this CLF flight
'Although there is not one single passenger on board, the flight…'

(38) 世界上沒有一部完美的憲法 [*Chinese Gigaword*]
shìjiè **shàng** méiyǒu [yí bù wánměide xiànfǎ]
world on NEG.EXT one CLF perfect Constitution
'There is no perfect Constitution in the world.'

Mandarin Chinese existential sentences can occur in a more complicated structure involving more than one VP. For example, sentences (39) and (40) contain two verbs, as a subtype of existential presentative sentences. This type of sentence is labeled as "realis descriptive clauses" by Li and Thompson (1981). It is analyzed as a serial verb construction and

it has two properties. First, the direct object of the existential verb must be indefinite. Second, its discourse function is to present or introduce an NP to be further described. As in (39), the NP 'one person' is an indefinite referential expression, followed by a descriptive clause. The indefinite numeral phrase 'one tree' in (40) is provided with more details by its following adjectival predicate.

(39) 外面有一個人敲門

wàimiàn	yǒu	[yí	ge	rén]	qiāo	mén
outside	EXT.V	one	CLF	person	knock	door

'There is someone outside knocking on the door.'

(40) 院子裡有一棵樹很高

yuànzi	lǐ	yǒu	[yì	kē	shù]	hěn	gāo
court yard	in	EXT.V	one	CLF	tree	very	high

'There is a tree in the yard which is very tall.'

Huang (1987) further proposes a general form of Mandarin existential sentences, as discussed in Chapter 1. The Mandarin existential structure is repeated in (41). Position II is reserved for existential predicates. The grammatical subject generally appears in Position I. Position III is for the NP whose existence is being asserted. Position IV is filled by an expression of predication, which is a descriptive clause or phrase. The expression in Position IV has to be semantically related to the NP in Position III.

(41) …(NP)…EXT.V…NP…(XP)…

Position	**I**	**II**	**III**	**IV**

The general form not only applies to positive existential predicates, but also to existential negation 沒有 *méiyǒu*. For instance, the 'one'-phrase introduced by 沒有 *méiyǒu* in (42) is followed by a verb phrase which provides relevant details. In sentence (43), the whole VP following the 'one'-phrase functions as a restrictive clause specifying the property concerned in the discussion. The NP introduced by 沒有 *méiyǒu* does not have to be followed by a verb phrase. It can be an adjectival phrase. As shown in (44), the idiomatic expression *yì fán fēng shùn* with its literal meaning of 'having favorable winds for sailing' is used to describe a process going smoothly.

(42) 沒有一個患者的檢驗結果呈陽性 [*Chinese Gigaword*]

méiyǒu	[yí ge	huànzhě de	jiǎnyàn	jiéguǒ]	chéng	yángxìng
EXT.V	oneCLF	patient POSS	inspection	result	show	positive

'Not a single patient has positive results'

(43) 將來沒有一個國家能保護它的環境 [*Chinese Gigaword*]

jiānglái	**méiyǒu**	[yí ge guójiā]	néng	bǎohù	tā de	huánjìng
future	EXT.V	one CLFcountry	can	protect	3.SG POSS	environment

'There will not be a country that can protect its environment in the future.'

(44) 沒有一件事一帆風順 [*Chinese Gigaword*]

méiyǒu	[yí	jiàn	shì]	yì	fán	fēng	shùn
EXT.V	one	CLF	thing	one	sail	wind	smooth

'There is not a thing which goes smoothly without a hitch.'

In the data from *Chinese Gigaword*, when 'one'-phrases as minimizers appear with existential negation 沒有 *méiyǒu*, the majority of them are followed by a phrase of predication, as exemplified in (42)- (44). However, the "complicated" existential construction involving more than one predicate can only appear in VO order. According to the corpus data, the generalization is that in OV word order the NP as the preverbal object cannot be followed by any predicative phrases. If there is any modification for the denotatum of the preverbal 'one'-phrase, it has to precede the noun of the 'one'-phrase. As in (45), the adjective occurs between the classifier and the noun.

(45) 連一位中國留學生都沒有 [*Chinese Gigaword*]

lián	[yí	wèi	**zhōngguó**	liúxuéshēng]	dōu	méiyǒu
even	one	CLF	Chinese	overseas student	DOU	EXT.NEG

'There is not even a single Chinese overseas student.'

Examples (46) and (47) illustrate the different requirements regarding modification in the two word orders. Predicative clauses and relative clauses appear in different syntactic positions to modify 'one'-phrases as minimizers. Predicative clauses have to immediately follow 'one'-phrases, whereas relative clauses with the relative marker *de* precede 'one'-phrases. In (46), the 'one'-phrase as minimizer in VO order is followed by an expression of predication in boldface. If it is paraphrased using OV order, the phrase of predication has to be expressed by a relative clause. In Modern Mandarin, a relative clause is marked by *de* at the end, as underlined in (47). In the rest of the discussion, the relative clauses are underlined.

(46) 尤其是聯合國，沒有一個會員國可以代表台灣 [*Chinese Gigaword*]

yóuqí	shì	liánhéguó，	méiyǒu	[yí	ge	huìyuán	guó]	
specifically	FOC	United Nations	EXT.NEG	one	CLF	member	country	
kěyǐ	**dàibiǎo**	**táiwān**						
can	represent	Taiwan						

'Specifically in the United Nations, there is no member country that can represent Taiwan.'

(47) 尤其是聯合國，一個可以代表台灣的會員國也/都沒有

yóuqí	shì	liánhéguó，	[yí	ge	<u>kěyǐ</u>	<u>dàibiǎo</u>	
specifically	FOC	United Nations	one	CLF	can	represent	
<u>táiwān</u>	**<u>de</u>**	huìyuán	guó]	yě /dōu	méiyǒu		
Taiwan	REL	member	country	YE/ DOU	EXT.NEG		

'Specifically in the United Nations, there is not even a single member that can represent Taiwan.'

As we have seen in (46) and (47), relative clauses associated with numeral phrases may appear in two positions: (a) the position between the unit word and the noun, and (b) the position

preceding the numeral (Huang et al. 2009). For the cases where the 'one'-phrases are used as minimizers, relative clauses have to appear in Position (a), as shown in (47), where the relative clause is underlined. This is because relative clauses in the two positions convey different meanings. The relative clauses in Position (a) are "non-restrictive", whereas those in Position (b) are "restrictive" (Chao 1968, Hashimoto 1971, Huang et. al 2009).[6] Relative clauses appearing in Position (b) of numeral phrases may cause anomaly, as shown in (48), where the underlined relative clause precedes the 'one'-phrase. The awkwardness has to do with the fact that the relative clause in this position makes the 'one'-phrase specific or definite. Since minimizer NPIs must be non-specific indefinite, relative clauses in Position (b) of 'one'-phrases as minimizers are less preferred and hence not found in OV word order.

(48) ??尤其是聯合國，可以代表台灣的一個會員國也/都沒有
yóuqí shì liánhéguó， kěyǐ dàibiǎo táiwān **de** [yí ge
specifically FOC United Nations can represent Taiwan REL one CLF
huìyuán guó] yě /dōu méiyǒu
member country YE/ DOU EXT.NEG
'Specifically in the United Nations, there is not even a single member country that can represent Taiwan.'

Relative clauses can also modify 'one'-phrases as minimizers in VO word order, as shown in (49), which is paraphrased from (46). However, in some cases the strategy of modification is not ideal in VO order. For example, if (43) is paraphrased with a relative clause in VO order, the grammatical acceptability becomes a problem, as in (50), which is even rejected by some native speakers. The ungrammaticality of (51) shows that the position between the unit word and the noun in VO order is not an ideal position for relative clauses modifying 'one'-phases as minimizers.

(49) 尤其是聯合國，沒有一個可以代表台灣的會員國
yóuqí shì liánhéguó， méiyǒu [yí ge kěyǐ dàibiǎo táiwān
specifically FOC United Nations EXT.NEG one CLF can represent Taiwan
de huìyuán guó]
REL member country
'Specifically in the United Nations, there is not a member country that can represent Taiwan.'

[6] In the literature there is no current consensus with respect to the analysis of Mandarin relative clauses. Del Gobbo (2003, 2010) proposes an analysis against this restrictive versus non-restrictive (or descriptive/ appositive) analysis. In her analysis, Mandarin relatives consistently behave as restrictive relative clauses. The restrictive versus descriptive contrast is analyzed as a deictic meaning versus generic meaning contrast (Del Gobbo 2005). Although these analyses differ from each other, they all admit that relatives in different positions of the numeral phrases lead to different interpretations. In this chapter, I adopt Huang et. al (2009)'s distinction of two types of relatives to discuss how the position of relatives influences the acceptability of a minimizer interpretation. The principles are as follows: (i) relative clauses modify what follows them, and (ii) the scope of modification is the elements to the right of the modifier. Relative clauses preceding numeral phrases modify the whole numeral phrase, while relative clauses appearing in the position between the unit word and the noun of a numeral phrase modify the noun.

(50) ??將來沒有一個能保護它的環境的國家

??jiānglái **méiyǒu** [yí ge néng bǎohù tā de huánjìng
future EXT.NEG one CLF can protect 3.SG POSS environment

de guójiā]
REL country
'There will not be a country that can protect its environment in the future.'

(51) *將來沒有能保護它的環境的一個國家

*jiānglái **méiyǒu** [néng bǎohù tā de huánjìng de
future EXT.NEG can protect 3.SG POSS environment REL

yí ge guójiā]
one CLF country
Intended reading: 'There will not be a country that can protect its environment in the future.'

The awkwardness of (50) can mainly be attributed to three reasons. First, it is difficult to trace the referent of the third person pronoun in the cases where the pronoun precedes its referent. Second, Mandarin sentences generally do not allow the phonological clash of multiple *de*, which have various functions such as a possessive or a relative clause marker. Third, existential constructions profile the NP introduced by the existential verbs in the information structure. This profiled NP is foregrounded with focal prominence. The intervention of a long relative clause may decrease the focal prominence assigned by the existential predicate. The preference of a predicative clause over a relative clause in VO order is reflected in the corpus data, where up to 95% of the 'one'-phrases as minimizers in VO order are followed by an expression of predication. The use of relative clauses for modifying minimizers is relatively not productive.

Relative clauses are rarely found in VO order, and also seldom appear to modify 'one'-phrases as minimizers in OV order. As shown in (52)-(54), the 'one'-phrases normally do not have additional modification. The information relevant to the denotatum of 'one'-phrases is normally provided in earlier contexts. For example, the numeral 'one'-classifier combination in (53) is associated with the 'tent' appearing in the previous clause. In a similar vein, the relevant information about the 'one'-phrase in (54) is specified in its preceding clause. Notably, the majority of the 'one'-phrases as minimizers in OV order have the noun omitted in the corpus data, as in (53) and (54). Since the classifier alone is sufficient to delimit the basic unit of its associated noun, the noun which appears earlier in the context does not need to be repeated. The way the preverbal minimizers behave in the corpus data also reveals a special property of the OV construction. Since the preverbal object of the OV construction has focal prominence, as discussed in Chapter 4, the preverbal object with a focus stress tends to be a small unit, which can make the prosodic prominence more salient. In addition to the prosodic emphasis, the basic component of 'one'-phrases without additional modification also increases the semantic prominence of the minimizer by narrowing the focus to the 'one'-phrase only.

(52) 他如果坐在家裡，一票也沒有 [*Chinese Gigaword*]

tā rúguǒ zuò zài jiā lǐ， [yí piào] yě méiyǒu
he if sit at home in one vote YE NEG.EXT
'If he sits at home, there will not be even a single vote (for him).'

(53) 要申領五百頂帳篷，一頂也沒有 [*Chinese Gigaword*]
yào shēnlǐng wǔ bǎi dǐng zhàngpéng，[yì dǐng] yě méiyǒu
have to apply for five hundred CLF tent one tent CLF NEG.EXT
'…plan to apply for five hundred tents, but there is not even a single one.'

(54) 有機會拿金牌的項目，幾乎一個也沒有 [*Chinese Gigaword*]
yǒu jīhuì ná jīnpái de xiàngmù，jīhū [yí ge] yě méiyǒu
have chance get gold medal REL item almost one CLF YE NEG.EXT
'There are almost no events for which there is a chance to win a gold medal.'

Based on corpus data, the preverbal 'one'-phrases as minimizers are generally not newly introduced information in the discourse. As shown in (55), the first clause clearly conveys a negative proposition, but the preverbal 'one'-phrase in the second clause repeats the information for the sake of emphasis and reinforcement.

(55) 沒有人下去，一個也沒有 [*Chinese Gigaword*]
méiyǒu rén xià qù， [yí ge] yě méiyǒu
NEG.EXT person down go one CLF YE NEG.EXT
'Nobody went down, not even a single one.'

The discussion so far concerns how the information structure of OV and VO is reflected in the syntactic constraints of the 沒有 *méiyǒu* existential construction. The differences of 'one'-phrases with negation 沒有 *méiyǒu* in VO and OV orders are summarized in (56).

(56) 'One'-phrases as minimizers in existential constructions

	VO word order	**OV word order**
'one'-phrase followed by another expression of predication	√	x
'one'-phrase modified by a relative clause (*yi*-CLF RC N)	√	√

Although both predicative phrases and relative clauses can be used to provide further information for 'one'-phrases, predicative expressions are preferred. The preference of one strategy over the other is relevant to the issue of profiling the element of which the existence is concerned. In OV order, the 'one'-phrases have the tendency to remain as a basic numeral phrase without extra modifiers. This is for the purpose of foregrounding the 'one'-phrases as minimizers both phonologically and semantically. Even though the three strategies of providing further information of the 'one'-phrases are all legitimate, the actual use in the corpus shows that the choice of the form for modification is determined by the principle of maximally foregrounding the focused elements. Among the three modification strategies, the existential construction with a predicative phrase in VO order has most tokens. This type of modification satisfies the emphatic nature of minimizers because the NP immediately following the existential predicate is profiled in the information structure. The principle of profiling important information provides an answer as to why 'one'-phrases as minimizers under existential negation do not show a tendency toward OV word order.

6.1.3 Summary: VO or OV?

The development of 'one'-phrases as minimizers from Old Chinese to Early Mandarin Chinese discussed in Chapter 2 and Chapter 3 has shown that the semantics and pragmatics of OV word order support the minimizer reading of preverbal object phrases. Following this line, it predicts that in Modern Mandarin the majority of 'one'-phrases as minimizers should occur in OV order. On the contrary, this turns out not to be the case because the majority of 'one'-phrases as minimizers still stay in VO order when under existential negation. As discussed in Section 6.1.1 and Section 6.1.2, the distribution of 'one'-phrases as minimizers in VO and OV orders is linked with their co-occurring negators. The property of existentiality of negation can divide Mandarin negation into two types. In the environment of non-existential negation, there are more 'one'-phrases as minimizers appearing in OV order than in VO order. However, when they occur with existential negation, the vast majority of them stay in VO order. The distribution in which VO outnumbers OV in the existential constructions has remained unchanged since Old Chinese. This phenomenon of 'one'-phrases staying in VO order is due to the semantic and syntactic characteristics of the existential constructions. The 'one'-phrases under existential negation in VO order can receive sufficient focal prominence, which is required for the interpretation of minimizers. In order to maximize the focal prominence, most of the 'one'-phrases as minimizers remain in the basic form, leaving other information in the preceding context. This phenomenon is even more salient in the category of the fixed 'one'-phrases, which is related to the degree of constructionalization. The issue of how constructionalization influences the distribution of fixed 'one'-phrases as minimizers in Modern Mandarin will be discussed in the next section.

In sum, Mandarin existential constructions and OV word order differ in their information structure. Since focus is a crucial determinant for 'one'-phrases to be understood as minimizers, they are sensitive to focal prominence. The diachronic distribution of 'one'-phrases in the two word orders under different types of negation is the result of weighing syntactic, semantic, pragmatic, and discourse-level properties with the purpose of achieving the best condition for foregrounding minimizers.

6.2 Construction-based Diachronic Changes

The previous section shows that 'one'-phrases as minimizers do not have the tendency of occurring in OV order under all types of negation. However, when 'one'-phrases are classified by the fixed and non-fixed criteria, a strong association with OV order can be clearly observed in fixed 'one'-phrases as minimizers in Modern Mandarin. Fixed 'one'-phrases appeared later than non-fixed 'one'-phrases in the history of Chinese, but they advanced faster on the path of grammaticalization, as discussed in Chapter 2. Specifically, the fixed 'one'-phrases as minimizers already revealed a stronger association with OV order than the non-fixed 'one'-phrases in the period of Early Mandarin Chinese. This section will relate the synchronic use of fixed 'one'-phrases to their diachronic development to map out the process of constructionalization.

Modern Mandarin 'one'-phrases as minimizers can be further grouped by the principle of fixed and non-fixed 'one'-phrases. The proportions of the two groups differ greatly in VO and OV word orders. In VO order, the majority of 'one'-phrases as minimizers belong to the non-

fixed type. As shown in Figure 6.4, there are more non-fixed 'one'-phrases than fixed 'one'-phrases for both of the two negators 不 *bù* and 沒 *méi*.

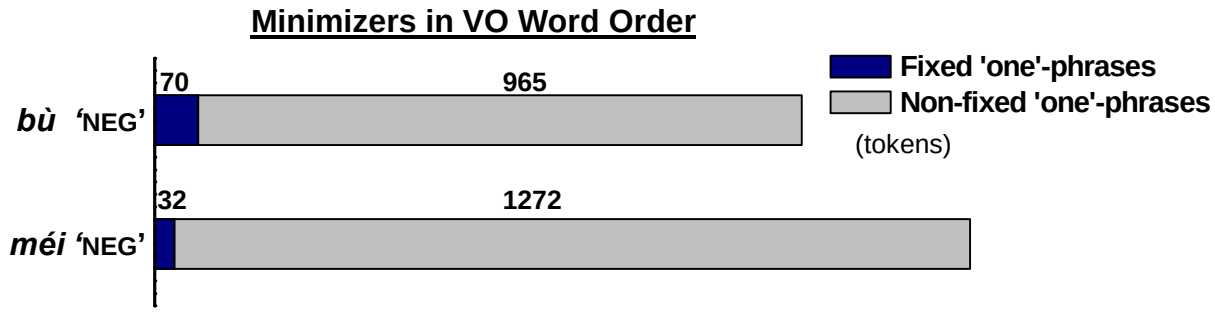


Figure 6.4: Distribution of fixed and non-fixed 'one'-phrases as minimizers in VO order

Non-fixed and fixed 'one'-phrases have different degrees of sensitivity toward negative polarity. Non-fixed 'one'-phrases under negation in VO order do not guarantee a minimizer reading, as shown in (18)-(21). However, when fixed 'one'-phrases appear under negation in VO order, they must be understood as minimizers, are shown in (57) and (58). If the shape of a water splash is not specified, the combination 'one dot' can be used to designate the smallest unit, as in (57). When the noun in question lacks a concrete shape, fixed 'one'-phrases are used to refer to the smallest quantity, as in (58). According to the corpus data, the fixed 'one'-phrases in VO order all have to include their basic three components: the numeral 'one', the unit word *diǎn* 'dot', and a noun.

(57) 沒濺起一點水花 [*Chinese Gigaword*]
méi jiàn qǐ [yì diǎn shuǐhuā]
NEG splash up one dot sprinkle
'…did not splash a bit.'

(58) 不冒一點風險 [*Chinese Gigaword*]
bú mào [yì diǎn fēngxiǎn]
NEG adventure one dot risk
'…does not take any risk.'

The proportion of 'one'-phrases regarding the fixed and non-fixed division in OV order, on the contrary, is reversed. In the corpus data, fixed 'one'-phrases constitute the majority of the tokens of 'one'-phrases as minimizers in the preverbal object position. Specifically, when 'one'-phrases as minimizers appear in OV order marked by the scalar particle YE, there are more fixed 'one'-phrases than non-fixed 'one'-phrases, as shown in Figure 6.5.

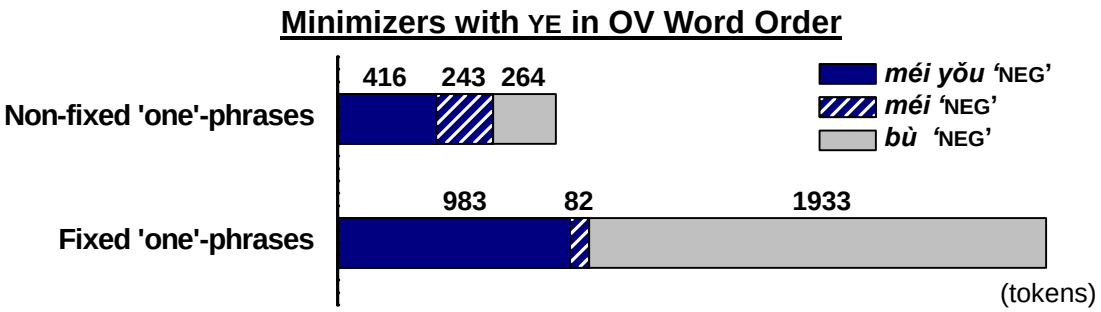


Figure 6.5: Distribution of fixed and non-fixed minimizers in OV order marked by YE

The fixed 'one'-phrases in OV order can appear in two forms. One is the regular numeral phrase containing the three elements: the numeral 'one', the unit word *diǎn* 'dot', and a noun. As shown in (59)-(61), the whole fixed 'one'-phrase occupies the preverbal object position. According to the corpus data, this form of fixed 'one'-phrases mostly appear with 沒有 *méiyǒu* negation.

(59) 讓市民人心惶惶，一點安全感都沒有 [*Chinese Gigaword*]
ràng shìmín rén xīn huánghuáng，[yì diǎn ānquángǎn] **dōu** méiyǒu
let citizen people heart fear one dot security DOU NEG.EXT
'(It) causes fear among the citizens. There is not even a bit of sense of security.'

(60) 對布希本人一點好處也沒有 [*Chinese Gigaword*]
duì Bùxī běnrén [yì diǎn hǎochù] **yě** méiyǒu
to Bush personally one dot advantage YE NEG.EXT
'There is not even a bit of advantage to Bush himself.'

(61) 一點汗都流不出來 [*Chinese Gigaword*]
[yì diǎn hàn] **dōu** liú bù chūlái
one dot sweat DOU flow NEG out
'(He) did not sweat even a little bit.'

The other form is the combination *yì diǎn* 'one dot' without the noun. It is noteworthy that when fixed 'one'-phrases occur in OV order, they tend to omit the noun of the numeral phrase. In other words, the combination *yì diǎn* 'one dot' is frequently found to be used alone, as shown in (62)-(64). In the three examples, *yì diǎn* 'one dot' immediately precedes the scalar particle YE. The numeral-unit word combination is more frequent with negator *bù* than with the other negators.

(62) 他一點也不相信 [*Chinese Gigaword*]
tā [yì diǎn] **yě** bù xiāngxìn
he one dot YE NEG believe
'He does not believe even a little bit.'

(63) 購買世界杯相關產品的顧客一點也沒減少 [*Chinese Gigaword*]
gòumǎi shìjièbēi xiāngguān chǎnpǐn de gùkè [yì diǎn]
purchase World Cup related products REL customer one dot

yě méi jiǎnshǎo
YE NEG diminish
'The number of customers purchasing World Cup products does not diminish even a little bit.'

(64) 對中國的影響，不能說一點也沒有 [*Chinese Gigaword*]
duì zhōngguó de yǐngxiǎng，bù néng shuō [yì diǎn] **yě** méiyǒu
to China REL influence NEG can say one dot YE NEG.EXT
'It cannot be said that it does not affect China at all.'

A similar distribution of fixed versus non-fixed 'one'-phrases is also observed in OV order marked by the particle DOU. When the three types of negation are all taken into consideration, the fixed 'one'-phrases outnumber non-fixed 'one'-phrases, as shown in Figure 6.6.

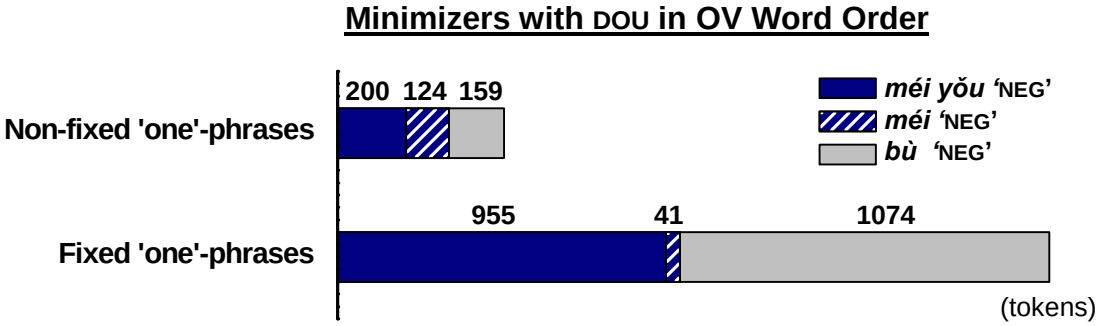


Figure 6.6: Distribution of fixed and non-fixed minimizers in the OV order marked by DOU

In the OV order marked by the scalar particle DOU, the fixed 'one'-phrases also reveal a strong tendency to omit the noun. As shown in (65)-(67), the phrase *yì diǎn* 'one dot' is immediately followed by DOU in all three types of negation. The phrase *yì diǎn* 'one dot' in the three examples represents the smallest quantity or unit since the nouns of the numeral phrases do not manifest themselves. In the three cases, *yì diǎn* 'one dot' has no referents to refer to.

(65) 這件事他們一點都不知道 [*Chinese Gigaword*]
zhè jiàn shì tāmen [yì diǎn] **dōu** bù zhīdào
this CLF matter they one dot DOU NEG know
'They don't know even a little bit about this matter.'

(66) 商場一點都沒察覺 [*Chinese Gigaword*]
shāngchǎng [yì diǎn] **dōu** méi chájué
commercial center one dot DOU NEG realize
'The commercial center did not even realize a little bit.'

(67) 他說：「一點都沒有。」[*Chinese Gigaword*]
tā shuō: 「[yì diǎn] **dōu** méiyǒu。」
he say one dot DOU NEG.EXT
'He said, 'there is not even a little bit.'

The omission of the noun of the 'one'-phrase in OV order is not found only in fixed 'one'-phrases. It can also be observed in the non-fixed 'one'-phrases, such as *yí ge yuángōng* 'one CLF employee', as shown in (68). In this example of non-fixed 'one'-phrases, the numeral-unit word combination refers to the basic unit of the topicalized 'employee'. As discussed earlier in Section 6.1, the 'one'-phrases in OV order tend to keep only the basic components and often omit the modifiers in order to maximize the prosodic and semantic prominence in the 'one'-phrases. The same logic applies here. For both fixed and non-fixed 'one'-phrases in OV order, their numeral-unit word combinations tend to stay closer to the scalar particle in order to increase saliency.

(68) 台北員工一個也沒裁 [*Chinese Gigaword*]
Táiběi yuángōng [yí ge] **yě** méi cái
Taipei employee one CLF YE NEG fire
'Not a single employee is fired in Taipei.'

Despite the fact that the numeral-unit word combinations of fixed and non-fixed 'one'-phrases behave alike in OV order, the two categories differ greatly regarding the degree of grammaticalization. The numeral-unit word combination of non-fixed 'one'-phrases still maintains its nominal property as a numeral phrase. Since it belongs to the nominal category, it can function as a grammatical object in OV order. For instance, sentence (68) can be paraphrased in the VO order, as shown in (69) and (70). The non-fixed 'one'-phrases in (69) and (70) are the grammatical objects of the predicate. This fact shows that the numeral-unit word part of non-fixed 'one'-phrases still adheres to the subcategorization of the predicate, so the syntactic and semantic relations to the predicate remain unchanged.

(69) 沒裁一個台北員工
méi cái [yí ge Táiběi yuángōng]
NEG fire one CLF Taipei employee
'Not a single employee in Taipei is fired.'

(70) 台北員工沒裁一個
Táiběi yuángōng méi cái [yí ge]
Taipei employee NEG fire one CLF
'Not a single employee is fired in Taipei.'

These numeral-unit 'one'-phrases are used only in VO order. For example, the OV sentences in (62) and (66) cannot be paraphrased in VO order, as reflected in the ungrammaticality of (71) and (72), respectively. The numeral-unit word combination *yì diǎn* 'one dot' cannot function as the postverbal object. This suggests that the numeral-unit word combination of the fixed 'one'-phrase may not be nominal.

(71) *他不相信一點

*tā	bù	xiāngxìn	[yì	diǎn]
he	NEG	believe	one	dot

Intended reading: 'He does not believe even a little bit.'

(72) *商場沒察覺一點

*shāngchǎng	méi	chájué	[yì	diǎn]
commercial center	NEG	realize	one	dot

Intended reading: 'The commercial center did not even realize a little bit.'

In OV order, it is noteworthy that although the combination *yì diǎn* 'one dot' seems to occupy the grammatical object position in OV order, it is not the "real" object because it is not part of the argument structure of the predicate. For instance, the main verbs 'shrink' in (73) and 'regret' in (74) are intransitive in Mandarin Chinese and therefore do not take an object argument. In the two examples, the phrase *yì diǎn* 'one dot' looks like a "pseudo-object" because it cannot be the legitimate objects of the intransitive verbs but it still appears in the position for preverbal objects. In these cases, the phrase *yì diǎn* 'one dot' functions as an adverbial modifier of extent or degree for its following verb phrase. What makes the adverbial phrase seem to be a preverbal object is the occurrence of the scalar particles, DOU and YE, which can serve as an indicator of the OV construction. The similarity of the nominal and adverbial *yì diǎn* shows their diachronic connection, which will be discussed in the rest of this section.

(73) 數量及種類一點也沒縮水 [*Chinese Gigaword*]

shùliàng	jí	zhǒnglèi	[yì	diǎn]	**yě**	méi	suōshuǐ
quantity	and	kind	one	dot	YE	NEG	shrink

'The quantity and kinds do not shrink even a little bit.'

(74) 他哥哥一點都不後悔 [*Chinese Gigaword*]

tā	gēge	[yì	diǎn]	**dōu**	bú	hòuhuǐ
he	brother	one	dot	DOU	NEG	regret

'His brother does not regret even a little bit.'

The modifying function of *yì diǎn* 'one dot' can also be found in the clause where the verb is transitive and its argument structure is fully satisfied. As shown in (75)-(78), the transitive verbs 'have' in (75)-(77) and 'cherish' in (78) have their object immediately following them. They are the verb phrases in the canonical VO word order in Mandarin Chinese. Although the phrase *yì diǎn* 'one dot' looks as if it occupies the position of the preverbal object, it is not the argument required by the verb.

(75) 對當時的情景一點也沒有印象 [*Chinese Gigaword*]

duì	dāngshíde	qíngjǐng	[yì	diǎn]	**yě**	méi	yǒu	yìnxiàng
to	then	scene	one	dot	YE	NEG	have	impression

'(He) does not have even a little bit of memory of the scene of the incident.'

(76) 自己年紀還小，一點都沒有結婚的念頭 [*Chinese Gigaword*]
zìjǐ niánjì hái xiǎo， [yì diǎn] **dōu** méi yǒu jiéhūnde niàntóu
self age still small one dot DOU NEG have marriage thought
'(He thinks) he is still young, so he does not have even the slightest thought of getting married.'

(77) 對自己一點也沒信心 [*Chinese Gigaword*]
duì zìjǐ [yì diǎn] **yě** méi xìnxīn
to self one dot YE NEG (HAVE) confidence
'He does not have even a bit of confidence in himself.'

(78) 似乎一點也不珍惜這種成就 [*Chinese Gigaword*]
sìhū [yì diǎn] **yě** bù zhēnxí zhè zhǒng chéngjiù
seem one dot YE NEG cherish this kind achievement
'(He) seems not to cherish even a little bit of this kind of achievement.'

The modifying function of the phrase *yì diǎn* 'one dot' is even more salient if the clause where it appears contains an adjectival predicate. In (79)-(81), what follows the negator is an adjectival predicate, such as 'romantic', 'fresh', and 'unfamiliar'. In this case, the phrase *yì diǎn* 'one dot' is undoubtedly not the object even though it looks as though it is a preverbal object.

(79) 這件事他們一點都不浪漫 [*Chinese Gigaword*]
zhè jiàn shì tāmen [yì diǎn] **dōu** bú làngmàn
this CLF thing they one dot DOU NEG romantic
'Regarding this matter, they are not romantic at all.'

(80) 一點都不新鮮 [*Chinese Gigaword*]
[yì diǎn] **dōu** bù xīnxiān
one dot DOU NEG fresh
'This is not fresh at all.'

(81) 所以今天跳起探戈一點也不陌生 [*Chinese Gigaword*]
suǒyǐ jīntiān tiào qǐ tàngē [yì diǎn] **yě** bú mòshēng
therefore today dance up Tango one dot YE NEG unfamiliar
'Therefore when he danced Tango today, it was not unfamiliar to him at all.'

The discussion of the phrase *yì diǎn* 'one dot' with DOU and YE so far shows that it is not a canonical grammatical object in OV order. It does not function as the argument of the predicate in the same clause. Moreover, it deviates from the nominal category and instead functions as an adverbial modifier for its following clause. Then I will discuss how *yì diǎn* 'one dot' has developed as an adverbial. This development has been shaped by the construction where it occurs. When the phrase *yì diǎn* 'one dot' functions as an adverbial, it collocates with a scalar particle, DOU or YE, and a negator, as shown in (73)-(81). The combination of the numeral-unit word phrase, a scalar particle, and a negator is similar to the form of a typical OV construction containing a 'one'-phrase as minimizer, as illustrated in Figure 6.7. The numeral-unit word combination *yì diǎn* 'one dot' appears precisely in the object position of a canonical OV construction despite the fact that *yì diǎn* 'one dot' is occasionally not the true grammatical object.

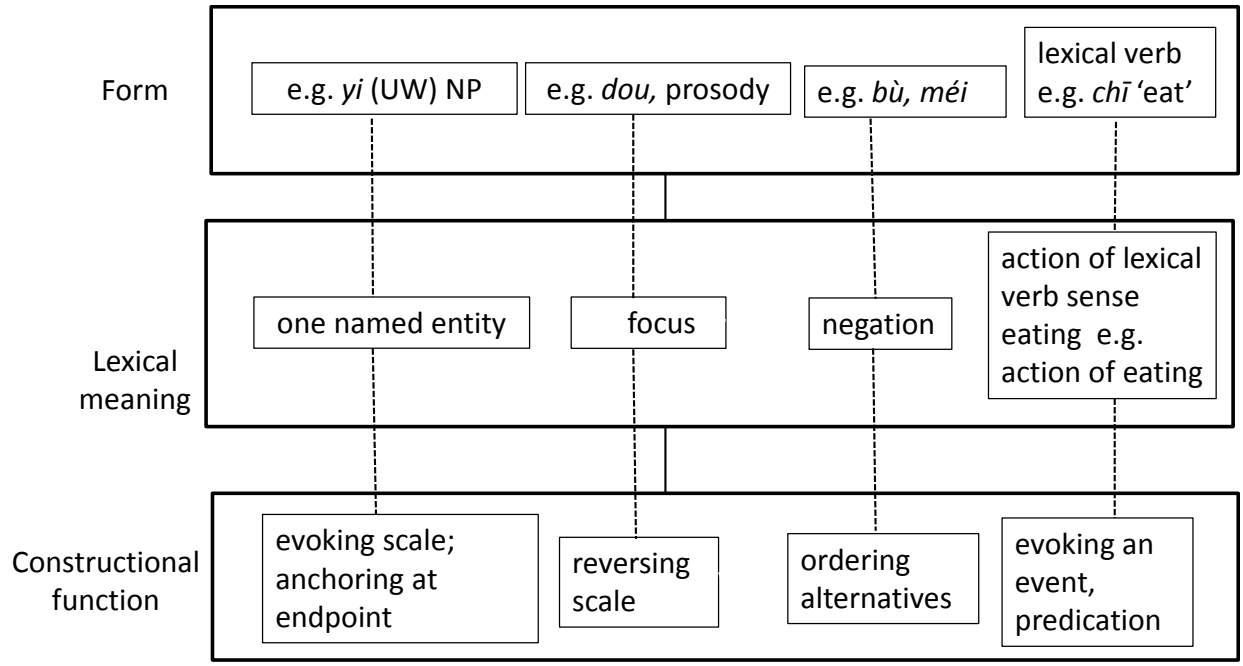


Figure 6.7: 'One'-phrases as minimizers in the OV construction

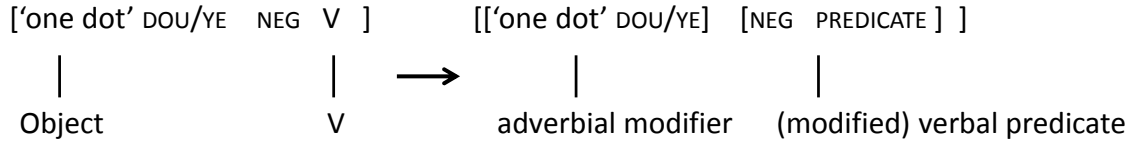
As discussed in Chapter 2, there were already more fixed 'one'-phrases as minimizers in OV order than in VO order in Early Mandarin Chinese. The tendency is a reflection of the high frequency of fixed 'one'-phrases appearing in the preverbal object position. When the class expansion occurred in the predicate of the construction, reanalysis of the construction was subsequently activated. The predicate position gradually expanded from transitive verbs to intransitive verbs and even to adjectival predicates. Importantly, class expansion happened only in the cases where the fixed 'one'-phrases omit the noun, as exemplified in (73)-(81). If the noun remained in the fixed 'one'-phrases, its salient occurrence as the grammatical object greatly reduced the chances of class expansion in the predicate. When the verb position is filled with predicates which do not belong to the category of transitive verbs, the relation between *yì diǎn* 'one dot' and the predicate is reanalyzed as the relation between an adverbial modifier and its modified element. The adverbial-predicate relation emerged partly due to the syntactic and semantic similarities to the adverbial-predicate relation in Mandarin Chinese, where the adverbial modifier has to precede its modified predicate. As shown in (82), the NPI adverb 'simply' has to precede the negator (Hsiao 2002). The phrase *sīháo* 'shred and hair' in (83) represents a minimal amount. As an NPI adverb, it also has to precede the negator and it does not require a scalar particle.

(82) 根本不漂亮
[gēnběn] bú piàoliàng
simply NEG beautiful
'simply not beautiful at all'

(83) 絲毫不在意
[sī háo] bú zàiyì
shred hair NEG care
'does not care at all'

The adverbial function of *yì diǎn* ‘one dot’ is absent in the corpus data of Old Chinese and Middle Chinese. This function can only be dated back to the period of Early Mandarin Chinese. However, it was not as frequent as in Modern Mandarin since the development was at its incipient stage. Notably, the scalar particles DOU and YE have to occur in the cases where *yì diǎn* ‘one dot’ behaves as an adverbial modifier, as shown in (73)-(81). The occurrence of the scalar particle supports the hypothesis that the reanalysis has occurred in the OV construction. It is because the involvement of the scalar particles characterizes the scalar OV construction. The reanalysis is illustrated in (84). The scalar particles are reminiscent of the OV construction. In Modern Mandarin, the scalar particle obligatorily accompanies the modifier *yì diǎn* ‘one dot’. The scalar particle and *yì diǎn* ‘one dot’ are generally viewed as a unit by native speakers due to their mandatory collocation. The combination of a scalar particle and *yì diǎn* ‘one dot’ as a whole behaves as a strict NPI. The strictness of this type of NPI is reflected in the fact that it must appear with negation, but not other types of NPI-licensing environments.

(84)



It is worth noting that the involvement of a scalar particle in the OV construction was not required in Early Mandarin Chinese. Hence the adverbial *yì diǎn* ‘one dot’ was allowed to occur alone without scalar particles. For instance, Early Mandarin Chinese *yì diǎn* ‘one dot’ behaving as an adverbial modifier in (85) and (86) did not appear with scalar particles. The two expressions have remained in use till Modern Mandarin as fixed expressions. They carry an archaic overtone in contemporary Mandarin, as vestiges from earlier periods of Chinese.

(85) 一點不差 [*Corpus of Early Mandarin Chinese*]
[yì diǎn] bù chā
one dot NEG deviate
‘It does not deviate even a little bit.’

(86) 一點不錯 [*Corpus of Early Mandarin Chinese*]
[yì diǎn] bú cuò
one dot NEG wrong
‘It is not wrong at all.’

Constructional changes are hypothesized to precede and enable constructionalization (Traugott and Trousdale 2013). The constructional changes before constructionalization typically involve expansion of pragmatics, semanticization, and distributional changes, as shown in the development of the nominal *yì diǎn* ‘one dot’ toward an adverbial modifier. The numeral ‘one’, the unit word *diǎn* ‘dot’, and the scalar particle have gradually formed a construction, which strongly favors negative polarity. Such a combination with a negator can even be used as a short negative answer, as shown in (87). The whole phrase in the short answer reinforces negation, which carries more emphatic effect than a bare negator. Although for most native speakers its earlier internal structure as an OV construction may still be accessible, the short negative response is often treated as a fixed expression.

(87) 訪美行程有爭議，錢復說：「一點也沒有。」[*Chinese Gigaword*]

fang	měi	xíngchéng	yǒu	zhēngyì，
visit	America	schedule	have	controversy

Qiánfù	shuō：	「**yì**	**diǎn**	**yě**	**méiyǒu**。」
Qianfu	say	one	dot	YE	NEG.EXT

'The schedule of visiting America seems controversial. Qiánfù said: 'Not at all'.'

In its diachronic development, *yì diǎn* 'one dot' has turned into an NPI construction after a series of constructional changes, such as class expansion of the predicates. The constructionalization of *yì diǎn* 'one dot' further expanded its size by recruiting a scalar particle when scalar particles came into play in OV order. Based on this tendency, it is highly probable that the construction would extend to include a negator, as in the short negative response. The process reflects the principle that diachronic changes and grammaticalization do not occur only on a single lexeme, such as the numeral 'one' or the unit word 'dot'. Instead, the construction changes as a whole. Specifically, the numeral-unit word combination *yì diǎn* 'one dot' has been shaped by the construction where it frequently occurs. Its constructionalization also catalyzes other subsequent constructional changes, such as expansion of collocation. For example, the *yì diǎn* 'one dot' phrase in Modern Mandarin can modify a wider variety of predicates. In this case, constructionalization and constructional changes provide environments for each other.

Not all 'one'-phrases as minimizers have undergone the same changes. These diachronic changes only occurred in the fixed 'one'-phrases, not in the non-fixed ones, even though the two types of 'one'-phrases appear in the same environments. The asymmetry has to do with the flexibility of replacing the unit word. The unit word *diǎn* 'dot' has formed a strong association with the concept of a small quantity. It can be used to refer to a minimal amount for various categories of nouns. In this sense, it is more general than typical individual classifiers and unit words. General unit words or classifiers tend to undergo constructionalization because they lack a distinctive image and thus are weaker in identifying an object. In other words, they are more likely to shift to the modifying function with the meaning of smallness. In non-fixed 'one'-phrases, on the contrary, the numeral-classifier combination has maintained a salient nominal property because individual classifiers are inherently used to describe the gestalt characteristics of their associated nouns Since the referencing function is strong, this function prevents the combination of the numeral 'one' and an individual classifier from shifting to another category.

A development similar to that of the phrase *yì diǎn* 'one dot' can also be observed in the general classifier 個 *ge*, which can accompany a wide range of concrete nouns. This is also a case showing that unit words which are relatively general are prone to undergo grammaticalization. In the next section, I will discuss how the synchronic use of the general classifier 個 *ge* reflects the special relationship between minimizers and OV word order.

6.3 [Unit word – noun] as Minimizers: Asymmetry in VO and OV Word Orders

Section 6.2 has shown that the numeral-unit word combinations of 'one'-phrases are frequently used as minimizers in OV order. The phenomenon again shows that the semantics and pragmatics of the OV construction match those of minimizer constructions well. One more subtype of minimizing constructions can be observed. The combination of a unit word and a noun without the numeral 'one' can also behave as a minimizer. For this type of minimizer construction, asymmetry between VO and OV is also observed. As shown in (88) and (89), the [unit word-noun] combination functions as a minimizer in VO and OV word orders. The [unit word-noun] in (89) is unambiguously a minimizer. The sentence holds only when the subject did not say anything. However, besides a minimizer reading, (88) can also imply that the subject did say something but the amount is judged by the speaker to be very small, nearly nothing.

(88) 他沒說句話就走了

tā	méi	shuō	[jù	huà]	jiù	zǒu	le
he	NEG	say	CLF	sentence	then	walk	PRF

'He left without saying a word.'

(89) 他連句話都沒說就走

tā	lián	[jù	huà]	dōu	méi	shuō	jiù	zǒu
he	even	CLF	sentence	DOU	NEG	say	then	leave

'He left even without saying a word.'

The [unit word-noun] combination does not only appear in negative contexts, but also appear in positive contexts. The phrase has a specific semantic constraint. It has to be interpreted as nonspecific indefinite, as discussed in Cheng and Sybesma (1999). The combination is blocked in the constructions which force a definite reading, as shown in the contrast of (90) and (91). In the environments involving bounded predicates, a specific interpretation of the object is imposed. 'One'-phrases can occur as the object of the bounded predicate as in (90), whereas [unit word-noun] combination causes ungrammaticality, as in (91).

(90) 她看完一本書

tā	kàn	wán	[yì	běn	shū]
she	see	finish	one	CLF	book

'She finished reading a book.'

(91) *他看完本書

*tā	kàn	wán	[běn	shū]
she	see	finish	CLF	book

Intended reading: 'She finished reading a book.'

Mandarin *ba*-construction offers a similar environment of boundedness. The NP preceded by the marker *ba* must be definite or specific. Again, 'one'-phrases can appear in this construction, as in (92). However, the [unit word-noun] combination is not allowed, as in (93).

(92) 他把一個便當吃完了

tā	bǎ	[yí	ge	biàndāng]	chī	wán	le
he	BA	one	CLF	box meal	eat	finish	PRF

'He finished eating a box meal.'

(93) *他把個便當吃完了

*tā	bǎ	[ge	biàndāng]	chī	wán	le
he	BA	CLF	box meal	eat	finish	PRF

Intended meaning: 'He finished eating a box meal.'

Through a series of tests, Cheng and Sybesma (1999) propose that Mandarin [unit word-noun] is not simply a phonological reduction of 'one'-phrases because they have different distributions.

Since the form [unit word-noun] has to be nonspecific indefinite, it has the potential to be used as a minimizer, which is also nonspecific. However, its interpretations vary in VO and OV word orders. In OV order with negation, the [unit word-noun] phrase must be interpreted as a minimizer, as in (94). In VO order with negation, the [unit word-noun] phrase does not necessarily need to be a minimizer. For example, it can be used as a downtoner as in (95), where the reading of total negation is not found. This use as a downtoner is a major function of the [unit word-noun] phrase. As shown in (96), the speaker uses the downtoner to attenuate the quantity for the sake of conveying politeness. The [unit word-noun] phrase here refers to an indefinite small amount without specifying a precise quantity. The function is similar to the downtoner function of 一點 *yì diǎn* 'one dot', which has been discussed in Chapter 2. A relevant example is repeated in (97).

(94) 他連口水也不喝

tā	lián	[kǒu	shuǐ]	yě	bù	hē
he	even	MW(mouth)	water	YE	NEG	drink

'He did not drink even a sip of water.'

(95) 你不喝口水嗎？

nǐ	bù	hē	[kǒu	shuǐ]	mā？
you	NEG	drink	MW(mouth)	water	Q

'Won't you drink a little bit of water?'

(96) 我想喝口水

wǒ	xiǎng	hē	[kǒu	shuǐ]
I	want	drink	MW(mouth)	water

'I would like to drink a sip of water.'

(97) 我想喝一點水/ 我想喝點水

wǒ	xiǎng	hē	[yì	diǎn	shuǐ]/	wǒ	xiǎng	hē	[diǎn	shuǐ]
I	want	drink	one	dot	water/	I	want	drink	dot	water

'I would like to drink a little bit of water.'

However, the downtoner function is not found in the OV order. The interpretational variation in the OV and VO orders shows that the OV order imposes a minimizer reading. The effect is particularly prominent when the unit word is the general classifier 個 *ge*.

The general classifier 個 *ge* can be replaced with another classifier in many situations, as in (98), but the alternation is not always possible, as in (99). The difference regarding the possibility of replacement has to do with the gradient grammaticalization of the classifiers (Zhang 2013). 個 *ge* generally functions as a classifier of concrete nouns, not of abstract mass nouns (Chao 1968). The classifier 個 *ge* appeared around Middle Chinese (S. Wang 1989)[7]. It has been recognized that the replacement of 個 *ge* is less likely to happen if the individual classifier in question has a close semantic relation with the noun.

(98) 四個/顆蘋果
sì ge/ kē píngguǒ
four CLF/ CLF (ball shaped) apple
'four apples'

(99) 三*個/張紙
sān *ge/ zhāng zhǐ
three CLF/ CLF (thin, flat) paper
'three pieces of paper'

The combination of the general classifier 個 *ge* and a noun has a clear division of function in the VO and OV orders. In OV order, such a combination must be used as a minimizer, as shown in (100)-(103). The 241 tokens in the corpus data all appear as minimizers without exceptions. Notably, *lián* 'even' cannot be omitted when the combination appears in the sentence-initial position[8].

(100) 當回頭看餐桌時，連個人影都沒有 [*Chinese Gigaword*]
dāng huí tóu kàn cānzhuō shí， **lián** [ge rén yǐng] dōu méiyǒu
when turn head see dining table time even CLF human shadow DOU NEG.EXT
'When (he) looked back at the dinner table, there was not even a shadow.'

(101) 夏天連個電扇也沒有 [*Chinese Gigaword*]
xiàtiān **lián** [ge diànshàn] yě méiyǒu
summer even CLF electric fan YE NEG.EXT
'There is not even an electric fan in the summer.'

[7] According to S.Wang (1989), the classifier *ge* was used for animals, plants, persons, body parts, etc during 220-581 A.D. It expanded its use to units of time, location, numerals, and some abstract concepts during 618-960 A.D. *Ge* can also occur in the contexts where no other classifiers can occur, such as the positions preceding a secondary predicate. Please refer to Myers (2000) for the literature review of multiple functions of *ge*.

[8] In the study of [classifier + noun] in Cheng and Sybesma (1999), Mandarin [classifier + noun] cannot appear alone in the sentence-initial position, but the same combination can appear in the sentence-initial position in Cantonese.

(102) 平時省吃儉用，連個雞蛋都捨不得吃 [*Chinese Gigaword*]

píngshí	shěng	chī	jiǎn	yòng，	lián	[ge	jīdàn]	dōu
usually	save	eat	save	use	even	CLF	egg	DOU
shě	bù	dé[9]	chī					
reluctant	NEG	reluctant	eat					

'(They) usually are frugal in food and use. They are even reluctant to eat an egg. (Eating eggs is extravagant to them.)'

(103) 一對老夫妻搬家時，發現連個飯桌都沒有 [*Chinese Gigaword*]

yí	duì	lǎo	fūfù	bānjiā	shí，	fāxiàn	lián	[ge	fànzhuō]	dōu	méiyǒu
one	pair	old	couple	move	when	find	even	CLF	dining table	DOU	NEG.EXT

'When the old couple moved, it was found that there was not even a dining table.'

Interestingly, the nouns in (101)-(103) have their own individual classifiers, as shown in (104). The use of 個 *ge* instead of the individual classifiers is for the purpose of emphasizing the smallness of the unit. More specific classifiers do not necessarily have the implication of smallness, while the more type-general 個 *ge* implicates that its associate noun is small or basic. This implicature of 個 *ge* also reflects the fact that its degree of grammaticalization is ahead of other individual classifiers.

(104) 一台電扇/ 一顆雞蛋/ 一張飯桌

yì	tái	diànshàn/	yì	kē	jīdàn/	yì	zhāng	fànzhuō
one	CLF	electric fan/	one	CLF	egg/	one	CLF	dining table

'one electric fan/ one egg/ one dining table'

It is worth nothing that not all the instances of minimizing construction [*ge* + noun] in the OV order can be paraphrased with VO order. If an instance of [*ge* + noun] has become a fixed expression as in (100), it works well in VO order, as in (105). When the classifier *ge* and its following noun do not form a strong association as the example in (103), the combination sounds awkward in VO order as in (106). The contrast shows that the OV word order is a crucial condition which determines the development of variants of numeral phrases with reference to a small quantity. The variants all have the tendency to develop as minimizers.

(105) 當回頭看餐桌時，沒有個人影

dāng	huí	tóu	kàn	cānzhuō	shí，	méiyǒu	[ge	rén yǐng]
when	turn	head	see	dining table	time	NEG.EXT	CLF	human shadow

'When (he) looked back to the dinner table, there was not even a human shadow.'

(106) ?一對老夫婦搬家時，發現沒有個飯桌

?yí	duì	lǎo	fūfù	bānjiā	shí，	fāxiàn	méiyǒu	[ge	fànzhuō]
one	pair	old	couple	move	when	find	NEG.EXT	CLF	dining table

'When an old couple moved, it was found that there was not even a dining table.'

This particular function of emphasizing a small amount of the entity classified by 個 *ge* can also be observed in VO order, but its development has gone in another direction, which

[9] *Shědé* 'reluctant to yield' is a verb compound. The negator can appear between the two words.

departs from minimizers. The *ge*-phrases in VO order can have an attenuating function. As shown in (107) and (109), they refer to the degree of how the event denoted by the predicate is instantiated. The contrast between quantifying NP and predicate events is shown in the pairs of (107) and (108) and of (109) and (110). For example, the canonical classifier for books is 本 *běn* as in (108), where the classifier quantifies the noun. In contrast, the *ge*-phrase in (107) does not designate the precise quantity. Instead, it implies that the event of buying books will be completed in a short duration or in a fast fashion. *Bēi* is a typical measure word for wine, as in (110), where the measure word quantifies the wine. In (109), the *ge*-phrase does not refer to one glass of wine. Instead, *ge* quantifies the event of drinking wine. In this case, it functions as a downtoner for expressing polite invitations for drinking some wine without expressing the exact amount. The classifier *ge* in these cases is not a classifier of nominal construals, but a classifier of predicate events. *Ge*-N is still a CLF-N phrase, but it can quantify predicate events. This function of *ge*-N appears exclusively in the VO order.

(107) 離開之前，我想買個書
líkāi zhīqián， wǒ xiǎng [mǎi ge shū]
leave before I want buy CLF book
'I want to buy some books before I leave.'

(108) 離開之前，我想買本書
líkāi zhīqián， wǒ xiǎng [mǎi běn shū]
leave before I want buy CLF book
'I want to buy a book before I leave.'

(109) 喝個酒再走吧！
[hē ge jiǔ] zài zǒu ba
drink CLF wine then go PTC
'Just have some wine before you leave!'

(110) 喝杯酒再走吧！
[hē bēi jiǔ] zài zǒu ba
drink CLF wine then go PTC
'Have a glass of wine before you leave!'

The development of the classifier *ge* in the two word orders provides another example of how the two word orders constrain the development of the *ge*-phrase. The same phrase can be shaped into different readings when occurring in VO and OV orders respectively. The division of *ge*-related functions in the two word orders is the same as that of the phrase 一點 *yì diǎn* 'one dot', the development of which has been discussed in Chapter 2. A comparison of their development is summarized in Table 6.1.

Table 6.1: The *ge*-phrases and the *yì diǎn* 'one dot' phrases in OV and VO orders

	VO	**OV**
***ge*-phrase**	attenuating downtoner of predicate events	minimizer
***yì diǎn* 'one dot' phrase**	attenuating downtoner of quantity/ degree	minimizer

The development of the two phrases reflects the syntactic, semantic, and pragmatic properties of the word orders. Particularly, the focus encoded in the OV construction unambiguously forces an NPI reading on the *ge*-phrases.

This section has discussed the development of classifier phrases as variants of numeral phrases. Since the variants of numeral phrases refer to a small quantity, they have the potential to be shaped into a minimizer or a downtoner depending on where they occur. The potential of the classifier phrases developing into different functions is associated with the inherent property of classifiers in terms of designating a basic atomic unit. It is the concept of referring to the basic unit that relates it to the concept of a minimal quantity. Thus, a series of subsequent developments may thus ensue.

6.4 Summary

This chapter has discussed the synchronic variations of 'one'-phrases as minimizers in Modern Mandarin. First, 'one'-phrases as minimizers do not show the preference of OV order over VO order in all types of negation. Specifically, existential constructions keep the majority of minimizers in OV order. The distribution has to do with the information structure of the existential constructions. Since focal prominence is a necessary condition for a minimizer interpretation, it is a determinant factor of where minimizers are prone to appear. Second, fixed 'one'-phrases can be widely used as an adverbial modifier, but non-fixed 'one'-phrases cannot. The asymmetry shows that fixed 'one'-phrases have advanced faster on the path of grammaticalization. This adverbial function has developed from the OV construction. The development shows that diachronic changes target the holistic construction instead of a single component. Third, a characteristic of Modern Mandarin numeral phrases is that numeral phrases which designate a small quantity have multiple variants. The ['one'-unit word] phrase and the [unit word-noun] phrase can also function as minimizers. Since they are minimizer constructions, they are also subject to the syntactic and semantic constraints of VO and OV word orders. These synchronic variations cannot be well explained without associating them with their diachronic development.

The distribution of 'one'-phrases shows that minimizers are highly sensitive to focus, which implies that negation as a canonical licenser is not the whole story for minimizers. Their synchronic variations can be regarded as the result of balancing syntactic, semantic, pragmatic, and prosodic factors in order to fit into the constructions which best match the nature of minimizers. For instance, although OV order is ideal for minimizers, there are still minimizers in VO order for a particular type of focus. Another example is the emergence of the ['one'-unit word] phrase, used for concentrating focal prominence on the minimizing construction in order to increase emphatic effects. With the goal of enhancing pragmatic effects, the minimizer

constructions tend to be unified with focus-related constructions. This unification of constructions has led to the series of diachronic development.

Chapter 7

Conclusion

This study accounts for synchronic variations from a diachronic perspective. The study begins with the following questions:

i. Why do Modern Mandarin 'one'-phrases as minimizers have an asymmetric distribution in VO and OV word orders? How do word orders constrain the development of 'one'-phrases as minimizers?

ii. Crosslinguistically, phrases referring to a small quantity tend to be recruited as minimizers. What are the sources of minimizers specifically in numeral classifier languages? Since 'one'-phrases have multiple functions in numeral classifier languages, how is a minimizer reading of a 'one'-phrase fully distinguished in a polysemous model?

iii. Is negation a sufficient licensing condition for polysemous 'one'-phrases to be interpreted as minimizer NPIs? What role does focus play in shaping an NPI interpretation?

iv. How have Mandarin Chinese 'one'-phrases been shaped as minimizers? What is the unit of grammaticalization? How do changes in subconstructions affect a larger construction? How do changes affect components of the construction?

The answers to these questions are to be found in the diachronic development of 'one'-phrases into minimizers. The synchronic distribution of minimizers connects seemingly unrelated linguistic issues including sanctioning of NPIs, polysemous interpretation of 'one'-phrases, functions of different word orders, focus marking, and scalarity. In examining Mandarin minimizer NPIs, we have thus examined an inter-related network of constructions and constructional changes.

7.1 Development of 'One'-phrases as Minimizers: Constructional Changes

Chapter 2 provided an overview of the interactions between non-fixed 'one'-phrases as minimizers and word order changes from Old Chinese, to Middle Chinese, to Early Mandarin Chinese. In Old Chinese, 'one'-phrases as minimizers relied on how the components of a numeral phrase were arranged in order to be distinguished from other quantity-denoting functions. After the disappearance of the contrast in orderings within a numeral phrase in Middle Chinese, the cross-period comparison shows that the minimizers functioning as a grammatical object had the tendency to occur in OV order rather than in the canonical VO order. The association with specific types of orders shows that the interpretation of 'one'-phrases is determined by the constructions where they appear. Particularly, the association with OV order brings up the issue of NPI licensing. Negation alone is not sufficient to guarantee an NPI reading. However, when 'one'-phrases occur with negation and receive focal prominence, they are

unanimously interpreted as minimizers. The involvement of focal prominence also links to the issue of how the pragmatically emphatic function of minimizers is achieved via the construction where they occur. The distribution of non-fixed 'one'-phrases as minimizers reflects how external environments have affected the development of minimizers. With respect to the internal changes within a 'one'-phrase, they can be clearly observed in the development of fixed 'one'-phrases, which emerged later than non-fixed 'one'-phrases but advanced further on the path of grammaticalization.

The discussion in Chapter 3 mapped out the incremental stages of how fixed 'one'-phrases have developed a polysemous network. The development involves reanalysis of a numeral phrase construction into a modification construction. The reanalysis targets not only syntax, but also semantics and pragmatics. The relationship of the three components of numeral phrases is reformulated as that of the already extant QUANTIFIER construction and further as the MODIFICATION construction. The development of fixed 'one'-phrases is an accumulation of a series of small steps. The fact that fixed 'one'-phrases have the flexibility to be shaped as NPIs and PPIs reveals the special status of the numeral 'one'. 'One' can be conceptualized against different scale settings, which induces different kinds of scalar inferences. Therefore the interpretations of 'one'-phrases are heavily constructionally determined.

The incremental development of 'one'-phrases toward polarity-sensitive items forms a hierarchical network of constructions. Within the network, relatively specific constructs, which are located at the lower level of the network, inherit properties from relatively general constructions, which are higher-level and more schematic. Thus the language users can generalize over substantive constructs to create a more schematic construction. The developments of fixed and non-fixed 'one'-phrases toward minimizers characterize the constructional network, as illustrated in Table 7.1. Each stage of fixed 'one'-phrases during the development inherits its property from a more schematic construction, such as the QUANTIFIER construction and further as the MODIFICATION construction. Non-fixed 'one'-phrases, which can accommodate various unit words and nouns, are the specific constructs or the instantiations of the more schematic constructions.

	Associated constructional types		
Non-fixed 'one'-phrases	**NUMERAL** [NUM UW N] **QUANTIFIER** [QUANTIFIER N]	**NUMERAL** [NUM UW N] **QUANTIFIER** [QUANTIFIER N] **DEGREE MODIFICATION** [MODIFIER N]	**NUMERAL** [NUM UW N] **QUANTIFIER** [QUANTIFIER N] **DEGREE MODIFICATION** [MODIFIER N]
Fixed 'one'-phrases		**NUMERAL** [NUM UW N] **QUANTIFIER** [QUANTIFIER N]	**NUMERAL** [NUM UW N] **QUANTIFIER** [QUANTIFIER N] **DEGREE MODIFICATION** [MODIFIER N]
Period	**Old Chinese**	**Middle Chinese**	**Early Mandarin Chinese**

Table 7.1: Construction network in the development of Mandarin Chinese 'one'-phrases

The corpus and text analysis in this study confirms that constructional change originates in language use (Traugott 2007, Trousdale 2008b, Fried 2008). When new tokens of 'one'-phrases emerge, they can be generalized to form a new level of schematization. Such creation also gradually pushes the existing schemas to a higher level in the hierarchy (Traugott and Trousdale 2013). The higher level schemas can accommodate the constructions which later participate in the constructional taxonomy. The constructional perspective places the focus both on lexemes and on how they interact with a construction during the grammaticalization of 'one'-phrases rather than restrictively on the development of atomic lexical items. Both internal and external conditions of constructional changes of 'one'-phrases are integrated. The constructional analysis also accounts for the subjectification of 'one'-phrases (Gisborne 2011). When 'one'-phrases are used to convey the speaker's evaluations, subjectivity comes not from the lexical components but from the contexts in which the 'one'-phrases appear. 'One'-phrases have to be placed in the negation and focus constructions to express emphatic functions. In brief, the change of 'one'-phrases is a gradual and unidirectional process, constituted by incremental stages along a continuum.

7.2 Focus, Minimizers, and Scalar Inferences

The distribution of Mandarin Chinese 'one'-phrases as minimizers introduced their crucial role of focus in inducing scalar inferences. Negation is still a necessary condition, which reverses the direction of how the pragmatic inferences are processed. Nevertheless, negation is

not sufficient to secure a minimizer reading. If focus comes into play, a minimizer reading is guaranteed. As reflected in the corpus data, when 'one'-phrases are interpreted as minimizers, they tend to occur in the focus-sensitive constructions such as the OV construction and the DEGREE MODIFICATION construction. This tendency has been observed since Middle Chinese. The minimizer interpretation of 'one'-phrases arises when they appear in the context which can support the scalar inferences. Focus constructions can support inferences by profiling a 'one'-phrase against other alternative values along an ordered scale. When being profiled, the value referred to by the 'one'-phase contrasts with other values on a scale to induce sets of inferences. The ensuing question is what the focus construals look like in Mandarin Chinese. Chapter 4 dealt with the diachronic development of focus marking in Mandarin Chinese. In Modern Mandarin, when 'one'-phrases as minimizers appear as a grammatical object in OV word order, they must be accompanied by a scalar particle 都 *dōu* or 也 *yě*, but this kind of phenomenon is not observed in Old Chinese and Middle Chinese. The particle 都 *dōu* has received significant attention in Chinese linguistics because it is a multifunctional quantifier (Szabolcsi et. al 2014). On the contrary, the other particle 也 *yě* does not receive due attention. It is generally treated as a variant of 都 *dōu* when used as a scalar particle, but the scalar interpretation of 也 *yě* emerged earlier than that of 都 *dōu* and affected the development of 都 *dōu*. A brief summary of the similarities and differences is provided in Figure 7.1. The reason behind interchangeability of the two particles in terms of scalarity has barely been touched upon. Chapter 4 approaches the scalarity and interchangeability of the two particles from a diachronic perspective.

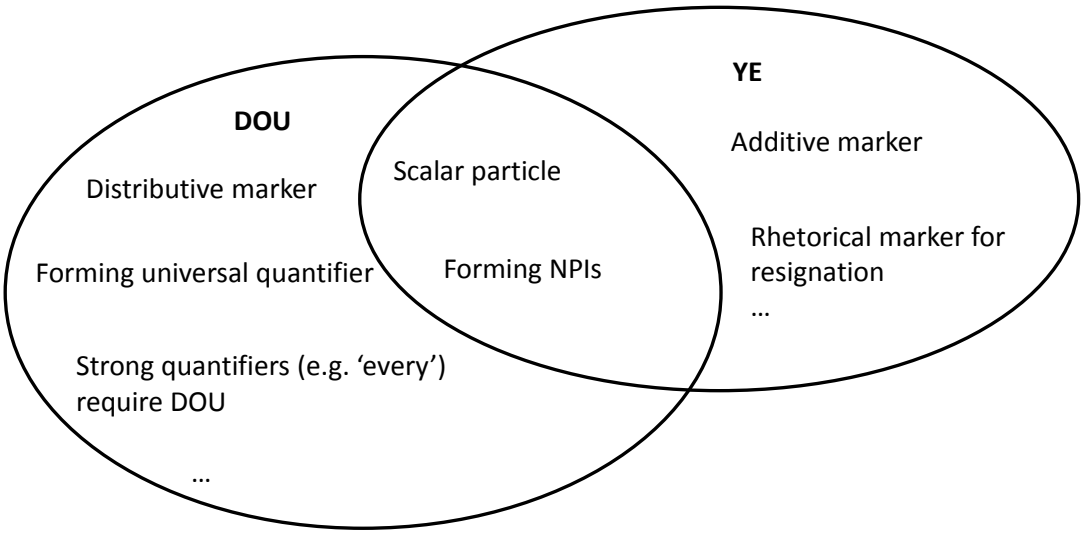


Figure 7.1: Similarities and differences between 都 *dōu* and 也 *yě*

Chapter 4 discussed how 都 *dōu* and 也 *yě*, which began to be used as scalar particles in Early Mandarin Chinese, developed. The fact that their development occurred in OV word order leads to the issue of the differences in the information structures of VO and OV word orders. OV word order forms a grammatical category including a wide variety of constructions. The grammatical object of the OV constructions receives focal prominence. The encoded focus property in OV word order explains why 'one'-phrases under negation in OV word order must be interpreted as minimizers. The specific association between minimizers and OV order provides the environments for the particles 都 *dōu* and 也 *yě* to develop their scalar function.

This diachronic analysis provides a unified account for why the two particles covering different ranges of semantics appear to share the same scalar function when they occur with minimizers. The scalar OV construction imparts the scalar reading to the particles 都 *dōu* and 也 *yě*. The constructional analysis of how the scalar particles have developed connects focus, the OV constructions, and minimizers. This development again echoes the idea that it is a construction as a whole instead of a lexeme that undergoes changes.

The co-occurrence of 'one'-phrases and scalar particles in Modern Mandarin is far from unique among numeral classifier languages. In Japanese, Korean, Malay, and Burmese, when 'one'-phrases are interpreted as minimizers, they must be attached by a particle, which is generally treated as the equivalent of English *even*. A comparison of the sources of the particles in Mandarin, Japanese, and Korean shows that all the particles cover a similar range of functions. Particularly, they all have the function as additive particles, which presuppose the existence of at least one alternative. Since scalar inferences of minimizers come from the contrasting of alternatives, it is not surprising that the scalar particles for minimizers in these languages come from additive particles. The phrases associated with the scalar particles are viewed as focus associates (Lee 2006, Nakanishi 2006, N. Zhang 2000). The discussion of the requirement of the scalar particles reveals the intertwining connections between focus, scalar inferences, and minimizers.

The emergence of the scalar particles shows how focus is involved in determining the minimizer interpretation of 'one'-phrases both synchronically and diachronically. The development of 'one'-phrases as minimizers from nominal phrases to adverbials in Chapter 6 illustrates how focus construals constrain the development of minimizers. First, the tendency of 'one'-phrases as minimizers to appear in the OV construction catalyzes the reanalysis of shaping the preverbal minimizer into an NPI adverbial modifier. Therefore, in Modern Mandarin, minimizer adverbials occur only preverbally, and never postverbally. Second, minimizers tend to appear in the form which can receive maximal focal prominence. There is a tendency of using the numeral-classifier combination without the noun for forcing value-based scalar inferences. Based on corpus data, the minimizers in OV order also seldom appear with a modification phrase in order to reach prosodic saliency. The skewed distribution of minimizers in different construals is a reflection of how focus is structured in Mandarin Chinese.

7.3 Minimizers as a Distinct Class of NPIs?

Expressions of a small quantity are crosslinguistically used as minimizers. Minimizers form a distinct class of 'strict' or 'strong' NPIs because they are licensed narrowly and normally appear only with negation (Giannakidou 2011). Mandarin Chinese 'one'-phrases as minimizers also behave as strict NPIs with respect to the licensing condition. The question is then why minimizers are strict or strong. Chapter 5 approaches the issue by making connections of the licensing condition and the emphatic nature of 'one'-phrases as minimizers. In numeral classifier languages, such as Japanese, Korean, Malay and Burmese, 'one'-phrases are the main source of minimizers. Chapter 5 compares the 'one'-phrases in Mandarin Chinese, Japanese, and Korean to characterize how minimizers behave in East Asian numeral classifier languages. The involvement of classifiers in numeral phrases characterizes numeral classifier languages. For instance, in Mandarin, Japanese, and Korean, 'one'-phrases have three components: the numeral 'one', a unit word, and a noun. 'One'-phrases in these languages have two major commonalities.

First, the three basic components of 'one'-phrases can be arranged differently. Second, when the 'one'-phrases are interpreted as minimizers, they are attached with a scalar particle. The two features are closely related to focal prominence and scalar inferences.

Different orderings within a 'one'-phrase present different sizes of the focus site. When the whole 'one'-phrase is focused, it has two sets of scalar inferences. One set contrasts different types of objects evoked by the noun, while the other contrasts values of the same type. The former is subjectively construed since one has to imagine various types for contrasting (Israel 2011). The latter is objectively construed since values are quantifiable. If the focus site covers only the numeral-classifier part of the 'one'-phrase, the inferences only come from contrasting values. The division is similar to English stressed and non-stressed *any*. The stressed *any* is emphatic because the end of the scale is profiled, whereas the unstressed *any* does not entail a scalar reading. The non-emphatic *any* is more liberal in distribution, belonging to the category of broad NPIs. In Japanese and Korean, 'one'-phrases can be shaped into broad or strict NPIs by being attached with different markers. Mandarin Chinese does not have markers on 'one'-phrases for the division. Instead, the VO and OV word order patterns serve to distinguish the two categories of NPIs. 'One'-phrases behaving as broad NPIs are only found in VO order. When 'one'-phases are used as polarity items in OV order, they must be strict NPIs. The asymmetry again reflects the difference in information structure between the two word orders. 'One'-phrases require to be focused in order to be interpreted as strict NPIs, while broad NPIs tend not to appear in the construction with strong focal prominence. The comparison of 'one'-phrases in Mandarin Chinese, Japanese, and Korean shows the commonalities and variations of the emphatic NPIs in numeral classifier languages. In these languages, focal prominence is mandatory for the minimizer interpretation of 'one'-phrases, but this requirement is instantiated differently in each of them.

The interaction between focus and ordering within 'one'-phrases provides answers to the question of why minimizers are considered 'strict' or 'strong'. 'One'-phrases as minimizers are scalar in nature because the numeral 'one' serves as an extreme value to contrast with other values on an objectively constructed scale. Minimizers are emphatic in nature because the fictive referent designated by 'one'-phrases has to be profiled on an ordered scale for contrasting with other alternatives. The numeral 'one' is prone to be conceptualized as the minimal value, which makes 'one'-phrases pervasively used as minimizers in numeral classifier languages.

In conclusion, the interpretations of numeral phrases are determined both compositionally from the components of the construction and non-compositionally from the meanings encoded in the whole construction. 'One'-phrases in Mandarin Chinese and other numeral classifier languages such as Japanese and Korean, have a wide variety of functions, which rely on constructions for further specification. The constructional account adopted in this study provides a systematic approach for the diachronically dynamic alignments of syntax, semantics, and pragmatics, and incorporates different mechanisms of change. The development of minimizers beautifully exemplifies the incremental process of diachronic change within a network of specific and abstract constructions. The constructional analysis deals with the issue of NPI licensing by integrating focus, referentiality of numeral classifier phrases, and pragmatic inferences. These diachronic developments underlie and structure the synchronic appearance of Mandarin minimizers in terms of distribution and variations. The cross-period corpus study provides a quantitative treatment of how language change originates in language use.

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