

The Boundedness of Adjectival Predication in Chinese: From Diachronic Perspective

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Abstract: By means of diachronic comparative analysis, this paper investigates the boundedness of adjectival predication from a historical perspective. Remarkable differences are observed to exist between modern Mandarin and classic Chinese: firstly, some adjectival-predicates had undergone changes from unmarked to marked form, accompanied by an increase of the number of adjectival-predicate markers; secondly, some adjectival-predicate markers are found in both classic and modern Chinese, however, their different usage in different periods indicates a tendency towards increasing bounded degree; in contrast, there are also some markers that could modify adjectival-predicate independently in early period but lost this function gradually. These diachronic evidences suggest the boundarization of adjectival predication in Chinese. Corpus data and statistic analysis are also used to examine when the boundedness of adjectival predication was established. It is shown that the boundarizing process began in the middle ancient times, then developed rapidly in Song and Yuan Dynasties, and finally completed in Ming and Qing Dynasties.

Keywords: Adjectival-predicate, Boundedness, Boundarize, Diachronic perspective.

1. Introduction

Conceptualization according to whether boundaries exist or not seems to be a pervasive characteristic of human cognition (Paradis 2001). Borrowing Langacker's (1991:545) terms, "bounding" is defined as "the existence of a limit (internal to the scope of predication) to the set of interconnected entities that constitutes a region, or the set of component parts that constitute a process". Since there is correspondences between conceptual structure and linguistic structure, the concept of "bounding" can be used to analyze different grammatical categories, e.g., nouns, verbs and adjectives (Declerck 1979; Dahl 1981: 79-90; Brinton 1998; Paradis 2001). For Chinese, the dichotomy between boundedness and unboundedness is also closely related to the basic characteristic of these major word classes. Shen (1995) examines how bounding and boundedness in cognition play a role in grammatical structure, including adjectives in Chinese, and argues that qualitative adjectives is continuous and unbounded, thus can't be used directly as predicate without the support of degree words. Obviously, the adjectival predication in modern Mandarin is characterized by boundedness. And if the degree word is taken away, the adjective predicate will become independent, but ungrammatical. However, this "ungrammatical" form in modern Mandarin was acceptable and quite common in Old and Middle Chinese. This can be seen from the contrast between sentences in Old Chinese and their translations in modern Mandarin:

(1)a. 其庭小。(Zuozhuan, Zhaogong shiba nian, 500BC)

Qi ting xiao.
PRON courtyard small

"Its courtyard is small."

b. 庭院很小。(Modern Mandarin)

Tingyuan hen xiao.
courtyard very small

"The courtyard is very small."

(2)a. 其车美。(Zuozhuan, Xianggong er shi qi nian, 500BC)

Qi che mei.

PRON chariot gorgeous

"His chariot is gorgeous."

b. 他的马车非常华丽。(Modern Mandarin)

Ta de mache feichang huali.

He Gen chariot very gorgeous

"His chariot is very gorgeous."

(3)a. 白狗黑。(Zhuangzi, Tianxia, 3rd BC)

Bai gou hei.
white dog black

"A white dog is black."

b. 白狗是黑的。(Modern Mandarin)

Bai gou shi hei de.
white dog COP black NOM

"A white dog is black."

Therefore, bounding is not only a problem for synchronic views, it is also a problem for diachronic views: Chinese adjectival predication has undergone tremendous changes from unbounded to bounded over time. Previous studies have analyzed bounding and boundedness in modern Mandarin (Huang 1994; He 1994; Grano 2012; Pang 2015; Xiong & Yang 2020), and too little attention is focused on the diachronic dimension. This study aims to investigate the boundedness of adjectival predication from a historical perspective, and the following questions will be addressed in details: (i) what is the difference between classic Chinese and modern Mandarin with respect to the boundedness of adjectival predication? (ii) when and how was the boundedness of adjectival predication established?

2. Adjectival-predicate Markers in Ancient Chinese

Based on different syntactic and boundary features, three basic types of adjectival-predicate markers are distinguished: phrase-level markers, sentence-level markers and morphology-level markers.

2.1. Phrase-level Markers

Phrase-level markers or phrasal markers refers to the marking elements added at the phrase level to modify the adjectival-predicate, including degree markers, dynamic markers, prepositional phrases, other types of adverbs and shi...de construction.

2.1.1. Degree Markers

2.1.1.1 Degree Adverb

Adverbdegree+A was used as predicate as early as the Pre-Qin period, which is still the basic form of adjectival predication in modern Mandarin. However, adverbdegree+A in predicate position had changed a lot. Firstly, as degree adverbs had continuously enriched, the expression of adjectival gradability was becoming increasingly accurate and systematic. Secondly, since Song Dynasties, successive use of different degree adverbs had become more and more common (example 6-8). Lastly, since Ming & Qing Dynasties, some adverbdegree+A needed to be accompanied by the nominalization 的 de when behave as predicate, taking the form adverbdegree+A+de, e.g., guai 'quite'+A+de, ting 'very'+A+de, gou 'rather'+A+de (example 8-9).

(4)旱既太甚。(Shijing, Daya, Yunhan, before 500 BC)

Han ji tai shen.
drought already extremely serious

"The drought is already extremely serious."

(5)而逵马仆甚多。(Shi shuo xin yu, Xianyuan, AD 450)

Er kui ma pu shen duo
CONJ Fankui horses servants so many

"However, Fankui has a lot of horses and servants."

(6)可煞湿。(Wudeng huiyuan, Chapter 5, 12th-13th AD)

Ke sha shi.
very too wet

"It's too wet."

(7)最甚深。(Wudeng huiyuan, Chapter 4, 12th-13th AD)

Zui shen shen.
most very profound

"This is the most profound."

(8)外头这么怪冷的。(Honglou meng, Chapter 113, 18th AD)

Waitou zheme guai leng de
outside so very cold NOM

"It's so cold outside."

(9)还挺好的。(Penggong an, Chapter 324, AD 1891)

Hai ting hao de.
still very well NOM

(He) was still very well.

Paradis (2001) proposes the boundedness in adjectives is associated with gradability, which is part of basic experience of human beings. Most adjectives are gradable, and intensifiers can be used to indicate their point on a scale (Greenbaum:139-140). Therefore, we can use degree adverbs to make continuous adjectives bounded. However, if new intensifiers are added to modify the original bounded adverbdegree+A construction, a new further-bounded subdomain will be set within the original bounded domain. Therefore, the above structural changes of adverbdegree+A are indeed indicative of increased boundedness.

2.1.1.2 Degree complement

Adjective+complement construction primarily emerged in

the Six Dynasties and came into wide use since the Song and Yuan Dynasties, consisting of many sub-constructions, for instance, A+qualitative phrase, A+de+(N)+VP, A+shen'very'/ji'utmost'/feichang'extraordinary', A+si'die'/tou'penetrate'/huai'broken', A+de+hen'very'/huang'flurried'/jin'tight'/buxing'dying'/ke yi 'not bad', as exemplified by (10)-(13).

(10)重百斤,毛长二尺余,细如丝。(Sanguo zhi, Weishu, AD 275)

Zhong bai-jin, mao chang er-chi yu, xi ru si.

weight one hundred-CL, hair length two-CL more, thin like silk

"(The mouse) weighs 100 jin. Its hair is more than two chi long and as thin as silk."

(11)直使今学者忙得更不敢睡!(Zhuzi Yulei, Chapter 12, AD 1200)

Zhi shi jin xuezhe mang-de geng bu gan shui.

literally make nowadays scholars busy-DE more NEG dare sleep

"Literally make scholars nowadays too busy to sleep."

(12)欢喜极了。(Chuke paian jingqi, Chapter 5, AD 1627)

Huanxi ji le.
joyful extremely CRS

"(She) was overjoyed."

(13)这家子远得很哩!(Xiyou ji, Chapter 22, 16th AD)

Zhe jiazi yuan-de hen li
this family far-DE very Prt.

"This family is very far away."

Generally, degree complement can add intensive meaning to the adjectival head, indicating gradability by calibrating a property in high degree. Paralleled to adverbdegree+A, the development of adjective-complement construction also strengthened the boundedness dimension of adjectival-predicate in Chinese.

2.1.2. Dynamic Markers

In both classic and modern Chinese, time and aspect markers usually occurs with adjectives, expressing dynamic meaning. However, this use also underwent great changes in different historical periods. The dynamic markers identified in oracle bone inscriptions are often time nouns or phrases (example 14-15).

(14)自今三日庚雨少。(Heji, 19722, 17th -11th BC)

Zi jin san ri Geng yu shao.
from today three days day of Geng rain little

"There has been little rain for recent three days."

(15)甲子雨小。(Heji, 12973, 17th -11th BC)

Jiazi yu xiao.
day of Jiazi rain small

"The rain was small on the day of Jiazi."

Since the Western Zhou Dynasty, various time adverbs could be used to modify adjective- predicate (example 16-19).

(16)怨讎已多。(Zuozhuan, Xigong er shi ba nian, 500BC)

Yuanchou yi duo.
enemies already many
"There are too many enemies."

(17)唐、虞既远。(Lunheng, Chapter 20, AD 200)

Tang Yu ji yuan.
dynasty of Tang Yu already far

“The dynasties of Tang and Yu are already far away.”
(18)乍暖柳条无气力。(Poem of Yangwanli’s, AD 1181)
Zha nuan liutiao wu qili.

newly warm wicker NEG strength
“The wicker is pliable when the weather has just warmed up.”

(19)况当众正热。(Zhuizi yulei, Chapter 132, AD 1200)
Kuang dangzhong zheng re.
besides people DUR hot
“Besides, the soldiers were very hot at that time.”

From the late Tang and Five Dynasties to Ming and Qing Dynasties, the aspect marker *le* and the compound directional complement, e.g., 起来 *qilai* ‘up’, 下来 *xialai* ‘down’, 下去 *xiaqu* ‘down’, gradually emerged, which can also occur with adjectives, indicating the dynamic aspectual meaning of property (example 20-23).

(20)只见四山青了又黄, 黄了又青。(Zu tang ji, Chapter 15, AD 900)

Zhi jian si shan qing-le you huang,
huang-le you qing.
only see four mountains green-PFV again yellow
yellow-PFV again green

“(I) could only see the surrounding mountains turn from green into yellow, and then again turn from yellow into green.”

(21)高着声音唱将来。(Dunhuang bianwen xinshu, AD 800)

Gao-zhe shengyin chang jianglai.
loud-DUR voice sing up
“(He) began to sing in a loud voice.”

(22)天色有些黑下来了。(Erke pai’an jingqi, Chapter 35, AD 1632)

Tianse youxie hei-xialai le.
day a little dark-down CRS
“It’s getting dark.”

(23)渐渐的好起来。(Honglou meng, Chapter 119, 18th AD)

Jianjian-de hao-qilai.
gradually well-up
“(He) was gradually getting better.”

It is obvious that, with the development of language, we can not only observe the property’s location on a time axis as a whole from the outside, but also go deep into the internal process and observe the status of each dynamic stage respectively, which means in human cognition, the property of people or object is both heterogeneous and dynamic as time goes by.

In addition, it is also worth noting that the dynamic markers also changed a lot when modify adjective-predicate. In Old and Middle Chinese, time nouns/adverbs +A construction can function as predicate without the support of other elements, however this use was becoming increasingly unacceptable in the boundarizing process, and in modern Mandarin, when time nouns/adverbs +A appears in predicate position independently, the whole sentence is incomplete and ungrammatical. This trend was already evident around the Ming and Qing Dynasties. The contrast is illustrated as follows.

(24)a. 甲子雨小。(Heji, 12973, 17th -11th BC)
Jiazi yu xiao.

day of Jiazi rain small
“The rain was small on the day of Jiazi.”
b. 今年雨水十分大。(Piaoshitong yanjie, AD 1350)
Jin nian yushui shifen da.
this year rain very heavy
“It has rained a lot this year.”
(25)a. 怨讎已多。(Zuozhuan, Xigong er shi ba nian, 500BC)
Yuanchou yi duo.
enemies already many
“There are too many enemies.”
b. 已经累乏了。(Sanxia jian, Chapter 4, 20th AD)
Yijing leifa le.
already exhausted CRS
“(He) is already exhausted.”

Gu(2007) associates sentence-completing elements with tense, and point-anchoring on time axis is the determining factor in sentence-completing. Based on the discussions above, we need to re-examine the relationship between sentence-completing components and tense: instead of interpreting tense via reference time to achieve sentence-completing, when qualitative adjectives occur with tense and aspect markers, the construal of state process changes with the flow of time, so a specific point or segment on degree scale can be indicated by the aid of tense-aspect category. However, in modern Mandarin, only aspect marker *le* has sentence-completing function, generally because other dynamic markers can only indicate a time point or time section, or just show the sustainable change of properties, however, the gradability or intensity of qualitative adjectives is uncertain with regard to the reference time or dynamic process. By contrast, *le* expresses the realization of property from non-A to A, pointing to a specific quantity, by which we can define one as A if the target quantity is reached, otherwise non-A, making continuous property bounded.

2.1.3. Prepositional Phrases

In Old and Middle Chinese, it’s quite common that prepositional phrases can modify adjective-predicate independently, describing when and where the properties exist or introducing objects.

(26) 甚于妇人。(Zhanguo ce, Zhaoce si, 5th-3th, BC)
Shen yu furen.
more than wife

“A husband loves his children more than a wife.”

(27) 臣贵于齐。(Zhanguo ce, Yance er, 5th-3th, BC)
Chen gui yu qi.

I lofty in the state of Qi
“I have a lofty position in the state of Qi.”

(28) 仁义功名, 著于后世。(Xunzi, Feixiang, 250 BC)
Renyi gongming, zhu yu houshi.
benevolence righteousness celebrated in later generations

“Benevolence and righteousness will be celebrated in later generations.”

However, apart from comparative phrase which indicates the gradability of property, other kinds of prepositional phrases also have undergone significant changes when modify adjectives: prepositional phrase+ A construction could behave as predicate directly in early period, however, since Qing Dynasty, other functional elements, usually degree

word or *le*, are needed, otherwise, the sentence is incomplete and unacceptable, as is illustrated in (29) and (30).

(29)a. 臣贵于齐。(Zhanguo ce, Yance er, 5th-3th BC)

Chen gui yu qi.

I lofty in the state of Qi

“I have a lofty position in the state of Qi.”

b. 展爷在卢家庄颇好。(Qixia wuyi, Chapter 55, 19th AD)

Zhanye zai Lujiazhuang po hao.

Zhanye at Lujiazhuang very well

“Zhanye is very well at Lujiazhuang.”

c. 安妮在我这儿很好。(He jia huan, modern Mandarin)

Anni zai wo zher hen hao.

Anni at I here very well.

“Anni is very well here.”

(30)a. 外不亲于诸侯。(Mengzi, Tengwengong shang, 275 BC)

Wai bu qin yu zhuhou.

diplomatically NEG friendly to feudal lord

“On the diplomatic front, (you) will fail to befriend with other feudal lords.”

b. 兰芬待你甚好。(Jiuwei gui, Chapter 8, AD 1910)

Lanfen dai ni shen hao.

Lanfen treat you very well

“Lanfen treat you very well.”

c. 他对邻居很冷淡。(modern Mandarin)

Ta dui linju hen lengdan.

he treat neighbors very cold

“He gives neighbors the cold shoulder.”

2.1.4. Other Types of Adverbs

In addition to the degree adverb and time adverb, some other types of adverbs were often used to modify adjectival-predicate independently in classic Chinese as well, for example, speculative adverb, modal adverb, and scope adverb, as in (31)-(33), respectively.

(31) 其后必大。(Zuozhuan, Xigong shiwu nian, 500 BC)

Qi hou bi da.

PRON descendants surely prosperous

“His descendants will be surely prosperous.”

(32) 有间，屋果坏。(Hanfeizi, Waichushuo zuoshang, 3th BC)

Youjian, wu guo huai.

after a while house really break

“After a while, the house really broke down.”

(33) 色不均而皆艳，音不同而咸悲。(Baopuzi, Piyu, AD 325)

Se bu jun er jie yan, yin bu tong er xian bei.

color NEG even CONJ all gorgeous voice NEG same CONJ all sad

“The colors are uneven, but they are all gorgeous. The voices are different, but they are all sad.”

Just like prepositional phrases, these adverbs could modify adjectival-predicate independently in early period, and from Song Yuan to Ming and Qing Dynasties, degree adverb or *le* are needed as supplementary, as is illustrated in (34) and (35).

(34) 便都黑了。(Zhuzi yulei, Chapter 4, AD 1200)

Bian dou hei le.

then all dark CRS

“Then it all went dark.”

(35) 果然好了。(Xingshi yinyuan zhuan, Chapter 36, 17th AD)

Guoran hao le.

really well CRS

“(She) really got better.”

2.1.5. shi+A+de Construction

With the grammaticalization of copula *shi* ‘be’, *shi*+A can function as predicate since Middle Chinese (example 36).

(36) 风月是同。(Quanliangwen, Jindaishu, 6th AD)

Feng yue shi tong.

wind moon COP same

“Wind and Moon are the same.”

However, since Song Dynasties, 底 *di*/的 *de* were more likely be attached to adjectives, and in modern Mandarin, declarative adjective predication typically take the form *shi*+A+*de*, otherwise the sentence will have a emphasis meaning (example 37, 38).

(37) 仁与义是柔软底，礼智是坚实底。(Zhuzi yulei, Chapter 6, AD 1200)

Ren yu yi shi rouguan di, li zhi shi jianshi di

Benevolence and righteousness COP soft NOM propriety wisdom COP solid NOM

“Benevolence and righteousness are soft, while propriety and wisdom are solid.”

(38) 衣服是新的。(modern Mandarin)

Yifu shi xin de.

clothe COP new NOM

“The clothe is new.”

Shi (2011:419) argues that the grammatical function of *de* is to identify the members of a cognitive domain. And for adjectives, we need to make comparison with a standard value if we want to know whether a person or an object has one property or belongs to one domain. Since comparison is also an important embodiment of adjective gradability, thus unbounded properties can also be discretized and bounded via *de*.

2.2. Sentence-level Markers

Sentence-level markers refer to sentence-final markers, which are added to the end of entire adjectival-predicate sentence, and the most common form is the sentence-final modal particles. Generally, AP+modal particle conveys a meaning of high degree or indicate the realization of a certain property, by which boundarization can also be achieved.

(39) 美哉！(Hanfeizi, Waichushuo you, 3th BC)

Mei zai!

beautiful Prt.

“How beautiful!”

(40) 寡君之疾久矣。(Guoyu, Jinyu ba, 5th-1st BC)

guajun zhi ji jiu yi.

Monarch AUX illness long Prt.

“The monarch has been ill for a long time.”

(41) 便狭小了。(Zhuzi yulei, Chapter 64, AD 1200)

Bian xi Xiao le.

then narrow CRS

“(One) will become narrow-minded.”

(42)你好痴啦! (Xiyou ji, Chapter 55, 16th AD)

Ni hao chi ya!

you very dumb Prt.

“How dumb you are!”

(43)雅得很哪! (Honglou Meng, Chapter 37, 18th AD)

Ya de hen na!

elegant de very Prt.

“How elegant!”

In Old and Middle Chinese, AP+modal particle could be used as predicate directly (example 39, 40), however, since Song and Yuan Dynasties, phrasal markers were more likely to be attached to adjectival head (example 41-43). While in early period, 美哉 mei zai, 多矣 duo yi, 久矣 jiu yi were totally grammatical, phrasal markers became increasingly obligatory to make the whole sentence acceptable, taking the form 太多了 tai duo le, 太美了 tai mei le, 已经很久了 yijing hen jiu le, in which tai ‘too’ is a degree adverb, and yijing ‘already’ is a time adverb.

2.3. Morphology-level Markers

Reduplication of qualitative adjectives belongs to inflectional morphology rather than lexical morphology category. According to Shi (2010: 99), in the Pre-qin Period, reduplication of state adjectives was quite common, which is a kind of reduplicated words. However, qualitative adjectives were rarely reduplicated during that time. The wide use of reduplicated qualitative adjectives began in Tang and Five Dynasties, for example:

(44)白日何短短。(Poem of Libai’s, AD 737, from Shi 2010)

Bairi he duan-duan.

day how short-short

“What a short day!”

(45)新新复新新。(Poem of Meng Jiao’s, AD 810, from Shi 2010)

Xin-xin fu xin-xin.

new-new again new-new

“There are always new flowers blooming.”

(46)小小底。(Zhuzy yulei, Chapter 4, AD 1200)

Xiao-xiao di.

small-small NOM

“(The difference) is very small.”

(47)面孔红红的。(Jiuwei gui, Chapter 71, AD 1910)

Miankong hong-hong de.

face red-red NOM

“Her face is very red.”

At the beginning, property adjectives were reduplicated without any attachment (example 44-45). From Song Dynasty, the reduplication of property adjectives began to end with the auxiliary word 底 di (example 46). Since Ming and Qing Dynasties, de began to be syntactically obligatory to adjectival reduplication (example 47). It is proposed that the transition from non-obligatory to obligatory of 的 de is closely related to its grammatical function, which is to identify the members of a cognitive domain.

Adjectival reduplication generally expresses a meaning of high degree, thus can’t be modified by other degree adverbs. But in the corpus of the Ming and Qing Dynasties, degree adverbs of low degree began to modify adjectival reduplication, as exemplified by the instances in (48) and (49).

(48)不傻也有些呆呆的。(Xingshi yinyuan zhuan, Chapter 81, 17th AD)

Bu sha ye youxie dai-dai de.

NEG dull also a bit stupid-stupid NOM

“(He is) a bit dull, even if not stupid.”

(49)仿佛有点温温的似的。(Laocan youji xu, Chapter 1, AD 1907)

Fangfu youdian wen-wen de shide.

seem a little warm-warm NOM like

“It seems a little warm.”

And from Late Qing and Republic Period, a new form came up that adverbdegree+A could take reduplication form and this kind of adjectival reduplication could appear in predicate position as well, sometimes even be ended with 的 de, as in (50) and (51), respectively.

(50)起源是很小很小。(Qingchao mishi, Chapter 80, AD 1904)

Qiyuan shi hen xiao hen xiao.

origin COP very small very small

“The origin is very small.”

(51)一屉摞着一屉, 很高很高的。(Yongzheng jianxia tu, Chapter 28, 20th AD)

Yi-ti luo zhe yi-ti, hen gao hen gao de.

One-CL pile up DUR one-CL very high very high NOM

“Layers of steam box are very high.”

2.4. The Correlation Between Adjectival-predicate Marking and Boundedness

On the basis of discussions above, it’s obvious that the adjective predication marking in Chinese has changed a lot, which suggest the boundarizing process of adjectival predication. The correlation is mainly manifested as follows:

Firstly, adjectival-predicates had underwent changes from unmarked form to marked form. In Old and Middle Chinese, a bare form of adjective can be used as predicate directly, however, different functional elements are required to accompany an adjectival predicate in the process of language development, leading to a remarkable increase of adjectival-predicate markers, e.g., degree adverb, degree complement, morphologization of adjectives and shi+A+de construction. The diversity of these functional items gives prominence to the boundedness of adjective- predicate sentences.

In addition, there are some markers that could modify adjectival-predicate independently in early period, however this use gradually become unacceptable, and in modern Mandarin, additional functional elements are required to make the whole sentence complete. For example, dynamic markers except le, non-degree adverbs and non-comparative prepositional phrases, these markers share a common semantic feature: they can’t indicate a specific point or a segment on degree scale to make continuous adjectives bounded. This change also illustrates the boundarization of adjective predicate from another aspect.

In contrast, some sentence-completing markers which could modify adjectival-predicate directly in both classic and modern Chinese also changed a lot. For example, adverbdegree+A at the phrase level, A+modal particles at the sentence level and reduplication at the morphology level,

these marking constructions could indicate the gradability of property adjectives, thus can be used as predicate directly. However, as discussed above, the structure of these adjectival-predicates have become more and more complex, for new markers are always added to the original marked construction. From single-marked to multi-marked form, the degree of boundedness are also further improved, which shows the enforcement of boundedness of adjectival predication over time.

3. The Boundarizing Process of Adjectival Predication in Chinese

Zuozhuan, Lunyu, Mengzi, Zhuangzi of Pre-Qin Period, Shi Shuo Xin Yu, Baopuzi, Xian Yu Jing of Middle Chinese, Zhuzi Yulei(Vol. 1-30), Xin Kan Yuan Poetry, Laoqida of Song and Yuan Dynasties, Jin Ping Mei and Honglou Meng

of Ming and Qing Dynasties are chosen as linguistic research materials. By statistical analysis of the boundedness and unboundedness of high frequency monosyllabic adjectives in different historical period, we'll further examine when the boundedness of adjectival predication was established.

3.1. The Diachronic Development of Phrase-level Markers

The dichotomy between boundedness and unboundedness of adjective-predicate at the phrase-level is manifested by whether the adjective is used as predicates with the support of phrasal markers or not. For instance, 其庭小 *qi ting xiao* 'the courtyard is small' and 庭院很小 *tingyuan hen xiao* 'the courtyard is very small'.

Table 1 shows the use of phrase-level markers in different historical periods.

Table 1. Number of phrasal markers modifying adjective-predicate across history

	Pre-Qin		Middle Chinese		Song & Yuan		Ming & Qing	
	marked form	unmarked form	marked form	unmarked form	marked form	unmarked form	marked form	unmarked form
大 da 'big'	13	30	44	26	114	64	77	35
小 xiao 'small'	3	15	3	18	41	46	47	43
多 duo 'many'	19	19	69	52	150	146	77	60
少 shao 'few'	4	17	18	31	33	39	27	26
高 gao 'tall'	6	4	29	29	73	37	33	7
深 shen 'deep'	2	2	8	15	5	4	9	5
浅 qian 'shallow'	0	2	0	8	13	13	3	3
久 jiu 'lasting'	3	14	8	17	10	21	7	2
长 chang 'long'	16	22	38	5	5	7	31	5
短 duan 'short'	0	5	6	11	0	4	17	5
美 mei 'beautiful'	2	20	15	10	3	10	4	0
好 hao 'good'	0	0	16	9	407	54	672	73
贵 gui 'costly'	5	6	15	19	28	11	6	2
重 zhong 'heavy'	8	11	22	22	70	33	30	10
轻 qing 'light'	3	16	9	15	8	20	8	2
远 yuan 'far'	7	13	18	18	22	17	11	5
黑 hei 'black'	0	4	3	4	18	5	4	4
白 bai 'white'	1	2	8	9	8	9	11	3
老 lao 'old'	6	7	3	13	1	9	1	0
强 qiang 'strong'	3	9	7	5	46	10	50	0
Total	32%	68%	49.7%	50.3%	65%	35%	80%	20%

In Old Chinese, adjectival-predicates showed strong inclination to unmarked form at the phrase level, standing at 68%, in contrast to 32% of marked form. The proportion of marked form went up to 49.7% in Middle Chinese, and 65% in Song and Yuan Dynasties. In Ming and Qing Dynasties, adjectival-predicate with phrasal markers constitute a massive 80%, mere 20% of unmarked form by contrast.

It is obvious that the period from the Middle Chinese to Ming and Qing Dynasties is very crucial for the increase of phrasal markers. However, the use of phrase markers also varies a lot from one period to another. In Middle Chinese, the use frequency of constructions in relation to degree was raised greatly, including adverbdegree+A (e.g., 甚美 *shen mei* 'very beautiful'), comparative construction (e.g., 深于大海 *shen yu da hai* 'deeper than the sea') and analogous construction (e.g., 大如山 *da ru shan* 'as huge as a mountain'). In the Song and Yuan Dynasties, the most

significant change was that the dynamic markers were often attached to adjectives, and A+Complement construction also came into wide use, e.g., A+甚 (*shen* 'very'), A+透 (*tou* 'penetrate') and A+de+(NP)+VP construction. From Ming and Qing Dynasties, more and more bounded constructions began to emerge in large numbers, e.g., A+极 (*ji* 'extreme'), A+无比 (*wubi* 'matchless'), A+死 (*si* 'die'), A+坏 (*huai* 'broken'), A+de+很 *hen* 'very'/慌 *huang* 'flurried'/紧 *jin* 'tight'/不行 *buxing* 'dying', and 比 *bi* construction.

3.2. The Diachronic Development of Sentence-level Markers

The boundedness of adjectival predication at the sentence-level is manifested by whether AP+modal particle is used as predicate independently or tend to co-occur with phrasal markers as supportive elements. Table 2 is the use of sentence-level markers in different historical periods.

Table 2. Number of sentential markers modifying adjective-predicate across history

	Pre-Qin		Middle Chinese		Song & Yuan		Ming & Qing	
	Simple form	Complex form	Simple form	Complex form	Simple form	Complex form	Simple form	Complex form
大 da ‘big’	17	4	1	1	11	13	9	45
小 xiao ‘small’	2	1	1	0	8	7	4	10
多 duo ‘many’	25	3	8	6	19	6	20	25
少 shao ‘few’	0	0	1	2	4	2	1	7
高 gao ‘tall’	1	0	2	3	1	15	0	4
深 shen ‘deep’	2	0	4	2	2	2	5	5
浅 qian ‘shallow’	2	0	0	0	1	7	0	0
久 jiu ‘lasting’	43	4	7	1	4	1	1	0
长 chang ‘long’	7	2	0	0	0	0	4	1
短 duan ‘short’	0	0	0	0	0	0	5	1
美 mei ‘beautiful’	13	3	0	0	3	2	0	0
好 hao ‘good’	0	0	0	0	14	22	40	229
贵 gui ‘costly’	2	1	3	0	0	4	0	0
重 zhong ‘heavy’	2	1	2	0	6	10	4	0
轻 qing ‘light’	1	0	1	0	2	1	0	0
远 yuan ‘far’	7	9	3	3	3	8	0	0
黑 hei ‘black’	0	0	0	0	1	4	5	0
白 bai ‘white’	0	0	0	0	0	1	0	0
老 lao ‘old’	16	1	3	0	2	4	5	8
强 qiang ‘strong’	3	1	1	1	0	0	0	17
Total	83%	17%	66%	34%	43%	57%	23%	77%

In Old Chinese, AP+modal particle in independent form accounts for 83%, in contrast to 32% of complex form modified by phrasal markers. As for the Song and Yuan Dynasty, the proportion of complex form was raised to 57%. Only 矣 yi was often used in simple form, while other modal particles, such as 了 le, 在 zai, 耳 er and 也 ye had a strong inclination to complex form, co-occurring with phrasal markers. The most significant changes are observed in adjectival-predicate sentences expressing dynamic or exclamatory meanings. For example, when describing the dynamic change of property, various adverbs were often used to modify adjectives, taking the form of 已(yi ‘already’)/便(bian ‘then’)/渐渐(jianjian ‘gradually’)/早(zao ‘early’)+A+了 le. Or in exclamatory sentences, degree adverbs were often added before adjectives, and the simple form AP+modal particle was rarely used in this period, usually taking the form 太(tai ‘too’)/甚(shen ‘very’)/特其(teqi ‘extraordinary’)/尽(jin ‘completely’)+A+了 le/在 zai/耳 er.

Following this trend, the use frequency of complex form in the Ming and Qing dynasties was up to 77%, with an increase of 60% compared with the Pre-Qin period, indicating a tendency towards increasing bounded degree.

3.3. The Diachronic Development of Morphology-level Markers

The diachronic development of morphology-level markers is manifested by the emergence of qualitative adjectival reduplication and its structural change over time. Since the reduplication of qualitative adjectives emerged very late, and was used in low frequency all along, also limited by the linguistic materials selected, only qualitative adjectives whose reduplication form were retrieved in our self-built corpus are presented in the table.

Table 3 is the use of reduplication of qualitative adjectives in different historical periods.

Table 3. Number of reduplication of qualitative adjectives across history

	Pre-Qin		Middle Chinese		Song & Yuan		Ming & Qing	
	AA	AA+ Aux	AA	AA+ Aux	AA	AA+ Aux	AA	AA+ Aux
小 xiao ‘small’	—	—	2	—	—	1	2	6
多 duo ‘many’	—	—	—	1	—	—	—	—
少 shao ‘few’	—	—	2	—	—	—	—	2
深 shen ‘deep’	1	—	—	—	—	—	—	1
久 jiu ‘long’	—	—	1	—	—	—	—	—
好 hao ‘good’	—	—	—	—	—	—	2	49
重 zhong ‘heavy’	—	—	—	—	—	—	—	1
黑 hei ‘black’	—	—	—	—	—	—	—	1

In Pre-Qin Period, the reduplication of qualitative adjectives was extremely rare, we only found one case of 深深 shen-shen ‘deep-deep’. More instances was found in Middle Chinese, for instance 小小 xiao-xiao ‘small-small’, 多多 duo-duo ‘many-many’, 少少 shao-shao ‘few-few’, 久久 jiu-jiu ‘long-long’. In the Song and Yuan Dynasties, although only one case of 小小底 xiao-xiao di ‘small-small’ was retrieved, it has no difference with modern Mandarin. In the Ming and Qing dynasties, the use frequency of reduplicated adjectival-predicate increased greatly, and 的 de was syntactically obligatory. About 94% of reduplicated adjectival predication were ended with 的 de.

4. Conclusion

The boundarizing process of Chinese adjectival predication is gradual and progressive, which generally began in the middle ancient times, then developed rapidly in Song and Yuan Dynasties, and finally completed in Ming and Qing Dynasties. The Old Chinese allowed independent, non-supported encoding of adjectival-predicates at the phrase level, and AP+modal particle was also likely to behave as sentence predicate without other attachment. For degree expressions at the morphology level, the reduplication of qualitative adjectives was extremely rare. In Middle Chinese, the use frequency of marked adjectival-predicates increased significantly, generally due to the wide use of adverbials and other quantifiers. The boundedness degree was raised greatly in Song and Yuan Dynasties, and new marking forms emerged in large numbers. However, this was also a transitional period, since boundedness is not a obligatory requirement for adjectival- predicates, various predicate markers was added owing to the semantic need.

However, the increasing use of the phrasal markers, the prominent tendency towards the co-occurrence of AP+modal particle and phrasal markers, and the emergence of reduplicated adjectival-predicate, all these changes together made adjectival predication more and more complex, and correspondingly more and more bounded and in-sufficient. The boundarizing process finally completed in Ming and Qing Dynasties, and specific functional markers were syntactically obligatory to adjectival-predicates, otherwise the sentence was unacceptable. Actually, these sentence-completing elements, such as degree elements, aspect marker le, auxiliary word de and various marked construction etc., can indicate the gradability of adjective by specifying a point or segment on a degree scale or making comparisons, by which boundarization can be achieved.

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