

Trends in Linguistics Studies and Monographs

Editor

Volker Gast

Founding Editor

Werner Winter

Editorial Board

Walter Bisang

Hans Henrich Hock

Heiko Narrog

Matthias Schlesewsky

Niina Ning Zhang

Editors responsible for this volume

Niina Ning Zhang

Walter Bisang

Volume 255

Plurality and Classifiers across Languages in China

Edited by

Dan Xu

**DE GRUYTER
MOUTON**

ISBN 978-3-11-029382-1
e-ISBN 978-3-11-029398-2
ISSN 1861-4302

Library of Congress Cataloging-in-Publication Data

A CIP catalog record for this book has been applied for at the Library of Congress.

Bibliographic information published by the Deutsche Nationalbibliothek

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at <http://dnb.dnb.de>.

© 2012 Walter de Gruyter GmbH, Berlin/Boston

Typesetting: RoyalStandard, Hong Kong

Printing and binding: Hubert & Co. GmbH & Co. KG, Göttingen

♻️ Printed on acid-free paper

Printed in Germany

www.degruyter.com



Table of contents

Preface — vii

Dan Xu

Introduction: Plurality and Classifiers across languages of China — 1

I Correlations between different types of quantification

Walter Bisang

1 Numeral classifiers with plural marking. A challenge to Greenberg — 23

Dan Xu

2 Reduplication in languages: A case study of languages of China — 43

II Numeral classifiers and their diachronic development

Shengli Feng

3 The Syntax and prosody of classifiers in Classical Chinese — 67

Lin Jang-Ling and Alain Peyraube

4 Individuating classifiers in Early Southern Min (14th–19th centuries) — 101

III The expression of plurality

Christoph Harbsmeier

5 Plurality and the subclassification of Nouns in Classical Chinese — 121

Barbara Meisterernst

6 Number in Chinese: a diachronic study of *zhū* 諸 From Han to Wei Jin Nanbeichao Chinese — 143

Marie-Claude Paris

7 *Bu-tong* 'different' and nominal plurality in Mandarin Chinese — 183

Jingqi Fu

8 Plurality in the pronominal paradigms of Bai dialects — 203

Shengli Feng

3 The Syntax and prosody of classifiers in Classical Chinese¹

Abstract: Based on Borer's theory of nominal structure (2005: 95), this paper offers a syntactic analysis of countable nouns in Pre-Archaic Chinese (ca. 1000 BC and before) and the development of classifiers in Archaic Chinese (1000 B.C.–200 A.D.). It is argued that the emergence of classifiers in Archaic Chinese, though syntactically licensed, was prosodically motivated and in turn, constructed a sub-case of a typological change from the synthetic property of Pre-Archaic Chinese (before 1000 BC) to the analytical characteristics of Post-Archaic Chinese, around the time of Eastern Han (25–220 AD).

Keywords: classifier, syntactic change, prosodic grammar, typological change of Classical Chinese

1 The Syntax of Countable Nouns and Classifiers

It is well known that nouns in Mandarin Chinese must co-occur with a classifier when counting. For example:

- (1) a. 唐僧有三個徒弟
Táng Sēng yǒu sān gè túdì
Tang Seng have three CL disciple
'Tang Seng has three disciples.'
- b. *唐僧有三徒弟
Táng Sēng yǒu sān túdì
Tang Seng have three disciple
'Tang Seng has three disciples.'

¹ I would like to express my sincere gratitude to Professor Cheng Zhang (張頡) not only for the inspiration of her insight on the grammatical nature of early classifiers in classical Chinese, but also for her generosity of providing access to her paper, on which some important statistics and conclusions of this current work are beneficially based. I would also like to thank Professor Hu Suhua (胡素華) for providing Modern Yi examples for the prosodic argument developed in this paper. All mistakes, of course, are mine.

Though classifiers like *gè* 個 are also called Measure Words (especially in pedagogically designed textbooks), there is a clear distinction between classifier and measurer in linguistic analysis, as shown in the following example:

- (2) a. 三條魚 b. 三尾魚
 sān tiáo yú *sān wěi yú*
 three stripe fish three tail fish
 ‘three fish’
- c. 一枚 / 頭魚
 yì méi / tóu yú
 one stick / head fish
 ‘one fish’
- (3) a. 三桶水 b. *三個水
 sān tǒng shuǐ **sān gè shuǐ*
 three pail water three CL water
 ‘three pail of water’ ‘*three water’
- c. 三桶魚
 sān tǒng yú
 three pail fish
 ‘three pail of fish’

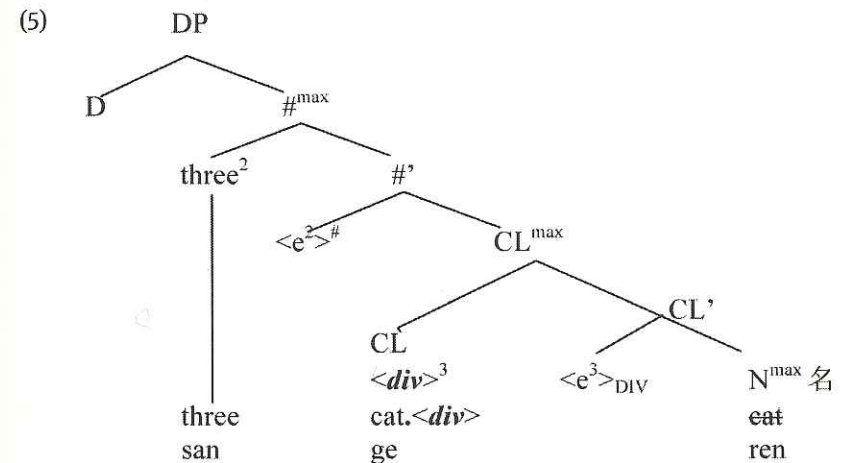
Though both *fish* and *water* in English do not have a plural form, one can say ‘one fish’ but not ‘one water’. ‘Water’ cannot be counted without a container while ‘fish’ can be counted with different classifiers in Chinese, namely, *tiao* ‘long-thing’ in Mandarin (2a), *wei* ‘tail’ in southern Chinese dialect (2b), *mei* ‘stick’ and *tou* ‘head’ in Han Dynasty (206 BC–220 AD). Thus, a container for measuring things (like the ‘water’) is called a *measure-word* (容量詞 *rongliangci*) which functions like a noun, whereas a grammatical category that must be used when counting things is called a *classifier*, which is a functional category. Therefore, a measure-word cannot be substituted by a (general or universal) classifier as in (3b), whereas a (general or universal) classifier can be substituted by a measure-word (3c).

The grammatical property of classifiers can further be characterized in Y. R. Chao’s terminology. In his textbook *Chinese Primer* (1948), the so-called classifiers today were named *Auxiliary Noun* (AN). As pointed out by Huang (2007),²

the term ‘AN’ is compatible with the modern theory of lightverbs which function as auxiliary verbs that assist to classify different types of actions/events (cf. inchoative, causative, performative, eventive, experiential, existential, etc.). As a result, VPs that have a light-verb structure (VP-shell) will be paralleled by NPs that have a light-noun structure (classifiers):

- (4) ... [_{clP} cl [_{NP} [N]]]
 ... [_{vP} v [_{VP} [V]]]

The parallelism between noun phrase syntax and verb phrase syntax is further developed and elaborated in Hagit Borer’s book *In Name Only* (2005: 95), as shown in the following structure:



In the above structure, it is claimed that the classifier head has an open value $\langle e \rangle_{DIV}$, and the $_{DIV}$ stands for ‘divider’. The assumption behind this is that the plural suffix (as *-s* in English) and the independent classifier (as *ge* in Chinese) can both assign range to $\langle e \rangle_{DIV}$, and the distinction between them stems from the fact that the ‘plural’ marker is a spell-out of an abstract head feature $\langle div \rangle$ on a moved N-stem (i.e., ‘cat-s’ in [5]), whereas the ‘classifier’ is an independent f-morph (i.e., *ge* in [5]).

Within this system, plural morphology and independent classifier both have the grammatical function as a divider (*div*, henceforth) for nouns in human languages. The crucial fact on which Borer’s theory is based is this: “plural morphology and classifier morphology never co-occur” (Borer 2005). That is to say, the plural maker and classifier are in complementary distribution, which is

2 In our co-taught course “Historical Syntax of Chinese” at Harvard University, 2007.

basically true. If this is so, it is not surprising that the plural morphology and the classifier are two sides of same coin: only the realization of *div* varies among different languages.³

Given the nominal structural theory developed by Borer, the *div* of noun phrases and the INFL of verb phrases may have a similar grammatical function in locating entities (for nouns) or actions (for verbs) in concrete spatiotemporal reality, respectively. Thus, the grammatical function of time-spatialization 時空 *shikonghua* (or, individualization 個體化 *getihua*⁴) will bring the two categoric structures together in pretty much the same fashion as shown in (6):

- (6) DP: [_{DP} D [_{#P} # [_{CL} [N]]]]
 CP: [_{CP} C [_{IP} I [_{VP} [V]]]]

The DP that has a '#' (a numerical node) is similar to CP that has an I (an inflection node) in the sense that the numerical node is required by the realization of *div* for all entities to be individualized in reality, whereas the inflection node is requested by all actions/events to be spatialized in reality. The parallelism between DPs and CPs so designed has some significant consequences. One of the important predictions is this: it becomes possible to have a set of variations among different languages. That is, there can be languages without plural morphology such as Chinese, as well as languages without classifiers such as English. However, no languages have neither a plural morphology nor a classifier system, because the theory requires all languages to have a *div* which must be realized by one way or the other.⁵ Unfortunately, as seen in next section, this prediction is challenged by the nominal structure in Pre-Archaic Chinese, where there was none of them, neither plurality nor classifier.

³ See Massam (2009) for an alternative analysis based on Borer's theory.

⁴ The notion of individualization is not new. Actually, Lyons has already discussed the notion for the function of classifier as presupposing an individuated object (1977: 464). 大河内康宪 Dahenei Kangxian (1993) later used this notion to analyze Chinese nouns by claiming that the classifiers have the function of individualizing an entity. Liu (2008), on the other hand, argued that classifiers do not give more content information but merely individualize the noun they modify. Liu Hui (2009) further distinguishes event classifier from entity classifier arguing that both of them are used for individualization.

⁵ Of course the *div* can also be realized by other means such as dividing marker (分界标记 *fenjie biaoji*) or referential marker (特指标记 *tezhi biaoji*). I would like to thank the anonymous reviewer for pointing out the distinction between referentiality, plurality and classifier. This will be discussed when dealing with the data from classical Chinese in next section.

2 The Challenge from Classical Chinese

A notable fact in Archaic Chinese is this: there were neither classifiers nor plural markers in the nominal structural system, as exemplified in (7).

- (7) a. 人而無恥，不知其可。(Odes, ca. 1000–600 BC)
rén ér wú chǐ, bú zhī qí kě.
 person but no sham, not know its accept
 'It is not acceptable that a man has no sham.'
- b. 三人行，必有吾師。(Lunyu, ca. 400 BC)
Sān rén xíng, bì yǒu wú shī.
 three person walk, must have my teacher
 'Among three people, there must be a teacher for me.'

Given examples in (7), it follows that either Bore's theory must be modified, or something else was going on with respect to the nominal system of Archaic Chinese. For the latter, Sagart (1999: 107) has suggested:

"It is tempting to regard the functions of *k- in verbs and nouns as being fundamentally one: *k- would serve for actions and objects that are well-delimited in time and space, and hence usually concrete and countable. If so, disappearance of *k- between the Old Chinese and Middle Chinese periods deprived Chinese of a means of distinguishing between count and mass nouns. This may have been a factor in the rise of numeral classifiers in Chinese during the same period."

Although it has been seriously criticized and disbelieved by Professor Mei Tzulin,⁶ no insights and suggestions have been offered by him for why there is neither plural morphology nor classifiers in Archaic Chinese. On the other hand, Sagart's hypothesis does bring fresh air into the vexed problem and motivate new investigations on the Archaic Chinese NP structures. As we will see below, the idea that there may be special makers employed in nominal structures of Archaic Chinese has inspired scholars to look closely into some peculiar nominal expressions in the language. For example 有 *Gwu?/yǒu:

- (8) a. 盤庚遷于殷，民不適有居。(Shangshu, ca. 1000 BC)
Pán Gēng qiān yú Yīn, mǐn bú shì YOU-jū.
 Pan Geng move to Yin, people not suit YOU-place.
 'Pan Geng had moved to Yin (but) the people were not comfort with that place.'

⁶ At the Harvard Symposium on Chinese Historical Syntax, April, 2008.

- b. 有王雖小，元子哉。(Shangshu, ca. 1000 BC)
 YOU-wáng suī xiǎo, yuán zǐ zāi.
 YOU-Prince though little, first son prt.
 ‘The Prince, though little, is the first son’.
- c. 標有梅，其實七兮。(Odes, ca. 1000–600 BC)
 piào YOU-méi, qí shí qī xī.
 fall YOU-plum, their prt. Seven prt.
 ‘The plums are falling and only seven are left!’

It has long been recognized by traditional scholars (cf. Wang 1980) that you 有 (*Gwu?)⁷ behaves like a noun-prefix, though no precise grammatical function (or meaning) has been proposed in the literature. Based on the nominal theory given by Borer, and the hypothesis given by Sagart, I would like to argue for the possibility that the *Gwu? may be indeed a realization of the *div* in Proto-Chinese, and it became a remnant in Archaic Chinese. Examples given in (8) actually support this hypothesis. Let’s look at them again closely:

- (9) a. Pán Gēng qiān yú Yīn, mín bú shì YOU-jū.
 ‘Pan Geng had moved to Yin, (but) the people were not comfortable with that-place.’
- b. YOU-wáng suī xiǎo, yuán zǐ zāi.
 ‘The-Prince, though little, is the first son’.
- c. piào YOU-méi, qí shí qī xī.
 ‘The plums are falling and only seven are left!’

Obviously, all of *Gwu? 有 used in the above environments have a referential property (i.e., referring to an entity in the sentence). It refers to *Yin* ‘the Capital City’ in (9a), *Yuanzi* ‘prince’ in (9b) and *qi shi* ‘the seven nuts’ in (9c), respectively.

There were also other prefix-like morphemes documented in Pre-Archaic Chinese, exhibiting a function akin to *Gwu?, like 唯/佳 (*G^{wi}/wéi):

- (10) a. 公車折首百又十又五人，執訊三人。
 Gōng Jū zhé shǒu bǎi yòu shí yòu wǔ rén,
 Gong Ju break head hundred and ten and five person,
 zhí-xùn sān rén.
 arrest three person.
 ‘Gong Ju killed hundred and fifteen person and arrested three.’
- 唯孚車不克以... 唯馬毆盡。(多友鼎 Duo You Ding)
 WEI fú jū bù kè yǐ... WEI mǎ qū xī.
 WEI captured carriage not can use... Wei horse harness sad
 ‘The captured carriages are useless ... and the horses are harnessed badly.’
- b. 白公父作簠，擇之金，佳鑄佳鑪。(白公父簠 Bai Gongfu Fu)
 Báigōng Fǔ zuò Fǔ, zé zhī jīn,
 Baigong Mr. make Fu, choose it copper,
 WEI jiào WEI lú
 WEI jiao (material) WEI lu (material)
 ‘Mr. Baigong made a Fu⁸, chose nice metal for it: the elegant Jiao and the elegant Lu.’

Whether or not all *G^{wi}-s 唯/佳 in Pre-Archaic Chinese functioned like *Gwu? is another issue. Examples in (10) show quite clearly that *G^{wi} does have a function of specifying an individual entity in the sentence.

Regarding facts in (9)–(10),⁹ it is plausible that there may be a referentiality or specificity system in the nominal structure of proto-Chinese, even if only a few observable remnants are left in Archaic Chinese, due presumably to the typological change from syntheticity (before Archaic Chinese, 1000 BC) to analyticity (after Archaic Chinese, 200 AD).¹⁰

Given the possibility suggested above, I would like to argue that the morphosyntactic realization of *div* proposed by Borer must be further elaborated according to diachronic facts in Archaic Chinese. That is, *div* may also be realized

⁷ The phonological reconstruction used here is based on the system of *Phonology of Archaic Chinese* (上古音系 *Shanggu yinxi*).

⁸ A kind of ritual vessel used for worship of god and ancestors in Archaic Chinese.

⁹ See also Redouane Djamouri 罗端 (2010) for further evidence about YOU as Divider marker in Archaic Chinese (even if he treats YOU as a plural marker which is technically different from the analysis given here.)

¹⁰ For more arguments on the typological change from Old Chinese to Middle Chinese see Zhang 1939, Xu 2006, Huang 2007 and Feng 2009.

by specificity and referentiality in terms of individualization of the entity in human languages through either independent morpheme or affixation in a language. That is to say, time and space can also be individualized as specific referential entities. Put differently: identifying an object and counting an object have the same effect of making the object an individual entity. Therefore, the two apparently different functions actually have the same effect structuralized as *div* seen in (5). If this is so, it will resolve the vexing problem raised by (Pre-)Archaic Chinese (a system with neither plural nor classifier) and encourage researchers to search for new discoveries about the old nominal systems from Pre-Archaic to Archaic Chinese, as well as to search for reasons for the newly developed classifiers, which will be explored in next section.

6 The Problems Involved in the Emergence of Classifiers

As seen in section one, the realization of *div* varies in different languages. In section two, we have argued that the *div* may be realized by specific and referential markers (特指/有指標記 *tezhi/youzhi biaoji*) in Proto- and Archaic Chinese. Given these facts, we are ready to see a parametric change from a referential-lexically realized *div*-system (Pre-Archaic Chinese) to a classifier-realized *div*-system (Post-Archaic Chinese). As pointed out in Wang (1980), Liu (1965), Peyraube (1998), Zhang C. (2009) and many others, the change of the nominal structure began roughly in the Shang dynasty (1600–1046 BC) and was basically established during the Wei-Jin Periods (ca. 400 AD).¹¹ For example:

(11) *Ca. 11th Century BC, Shang-Zhou Dynasties*

[N Num N/CL]

a. 馬三匹

mǎ sān pǐ

horse three mate/CL

‘three horses’

¹¹ The term ‘established change’ used here refers to the grammar (i.e., the structure and its function) of classifiers, not individual changes (i.e., from *mei* to *tiao*, *tou* and *wei* for fish . . . etc.)

206 BC–220 AD, Han Dynasty

[N Num CL]

b. 竹竿萬个 (*Shi Ji, Huozhi Liezhuan*)

zhú-gān wàn gè

bamboo-pole ten-thousand CL

‘ten thousand bamboo poles’

[Num CL N]

c. 一个嫡男 (*Guoyu Wuyyu*)

yí gè dí nán

one CL legitimate son

‘a son of first wife.’

200–500 AD, Wei-Jin Period

[Num CL N]

d. 三个石柱 (*Sou Shen Ji*)

sān gè shí zhù

three CL stone pole

‘three stone poles.’

A striking phenomenon involved in the classifier development is the fact that generic classifiers were developed earlier than specific classifiers at the beginning of the emergence of classifiers. Zhang (2009) observed that in the Han dynasty documents, there were 55 nouns occurring with a general classifier (*mei*) whereas only 11 took either a specific classifier or a generic one among all the nouns that took classifiers. Up to the Wei-Jin Period, however, there were 75 nouns that co-occurred with a general classifier but 43 nouns that occurred with a specific classifier. That is:

(12) Statistics of Classifiers in Han Period and Wei-Jin Period.

	Ns with General classifiers	Ns with specific classifiers
Han Dynasty (206 BC–220 AD)	55	11
Wei-Jin Period (220–420 AD)	75	43

The statistics in (12) indicates that during the Han Dynasty, “generic classifiers were used for nouns that do not have a specific numerical classifier,” (Zhang 2009) whereas the ones that take a generic classifier in the Han Dynasty devel-

oped to occur with specific classifiers during the Wei-Jin Period. For example (taken from Zhang, 2009):¹²

(13) List of Classifiers in Han Period and Six Dynasties

Nouns	Han Period (206 BC–220 AD)	Six Dynasties (222–589 AD)
杯 cup	枚 <i>méi</i> 'stick', 具 <i>jù</i> 'utensil'	口 <i>kǒu</i> 'mouth', 枚 <i>méi</i> 'stick'
筆 writing brush	枚 <i>méi</i> 'stick'	枚 <i>méi</i> 'stick', 枝 <i>zhī</i> 'branch', 管 <i>guǎn</i> 'bamboo branch'
車 carriage	枚 <i>méi</i> 'stick', 乘 <i>shèng</i> 'a set of carriage horses', 兩 <i>liǎng</i> 'pair of wheels'	乘 <i>shèng</i> 'a set of carriage horses', 兩 <i>liǎng</i> 'pair of wheels'
刀 knife	枚 <i>méi</i> 'stick'	口 <i>kǒu</i> 'mouth', 枚 <i>méi</i> 'stick', 具 <i>jù</i> 'utensil'
豆 bean	枚 <i>méi</i> 'stick'	粒 <i>lì</i> 'granule', 个 <i>gè</i> 'individual', 枚 <i>méi</i> 'stick', 顆 <i>kē</i> 'granule'
斧 axe	枚 <i>méi</i> 'stick'	口 <i>kǒu</i> 'mouth', 枚 <i>méi</i> 'stick'
弓 bow	枚 <i>méi</i> 'stick', 具 <i>jù</i> 'utensil', 張 <i>zhāng</i> 'opening'	張 <i>zhāng</i> 'to open a bow'
狗 dog	枚 <i>méi</i> 'stick'	个 <i>gè</i> 'individual', 頭 <i>tóu</i> 'head'
龜 turtle	枚 <i>méi</i> 'stick'	枚 <i>méi</i> 'stick', 頭 <i>tóu</i> 'head'

Nouns	Han Period (206 BC–220 AD)	Six Dynasties (222–589 AD)
雞 chicken	枚 <i>méi</i> 'stick', 只 <i>zhī</i> 'single'	頭 <i>tóu</i> 'head', 只 <i>zhī</i> 'single'
蛋 egg	枚 <i>méi</i> 'stick'	枚 <i>méi</i> 'stick', 顆 <i>kē</i> 'granule'
箭 arrow	枚 <i>méi</i> 'stick'	只 <i>zhī</i> 'single'
鏡 mirror	枚 <i>méi</i> 'stick'	个 <i>gè</i> 'individual', 枚 <i>méi</i> 'stick'
鳥 bird	枚 <i>méi</i> 'stick'	口 <i>kǒu</i> 'mouth', 頭 <i>tóu</i> 'head'
牛 cow	枚 <i>méi</i> 'stick', 皮 <i>pí</i> 'skin', 頭 <i>tóu</i> 'head'	口 <i>kǒu</i> 'mouth', 頭 <i>tóu</i> 'head'
錢 currency	枚 <i>méi</i> 'stick'	个 <i>gè</i> 'individual', 枚 <i>méi</i> 'stick', 文 <i>wén</i> 'lines'
券 bamboo bond	枚 <i>méi</i> 'stick'	支 <i>zhī</i> 'branch'
繩 string, rope	枚 <i>méi</i> 'stick'	枚 <i>méi</i> 'stick', 條 <i>tiáo</i> 'strip'
石 stone	枚 <i>méi</i> 'stick'	枚 <i>méi</i> 'stick', 片 <i>piàn</i> 'piece', 段 <i>duàn</i> 'section'
矢 arrow	發 <i>fā</i> 'shoot', 个 <i>gè</i> 'individual', 枚 <i>méi</i> 'stick', 支 <i>zhī</i> 'branch'	發 <i>fā</i> 'shoot', 只 <i>zhī</i> 'single'
獸 animal	个 <i>gè</i> 'individual'	頭 <i>tóu</i> 'head'
樹木 trees	枚 <i>méi</i> 'stick', 樹 <i>shù</i> 'tree'	个 <i>gè</i> 'individual', 根 <i>gēn</i> 'root', 株 <i>zhū</i> 'stem'

¹² Zhang has exhaustively calculated the classifiers used in 17 texts from Han to Wei-Jing and Southern-Northern Dynasties.

Nouns	Han Period (206 BC–220 AD)	Six Dynasties (222–589 AD)
索 cable, rope	枚 <i>méi</i> 'stick'	張 <i>zhāng</i> 'opening'
席 mat	枚 <i>méi</i> 'stick', 具 <i>jù</i> 'utensil'	具 <i>jù</i> 'utensil', 領 <i>lǐng</i> 'collar'
印 stamp	枚 <i>méi</i> 'stick'	枚 <i>méi</i> 'stick', 紐 <i>niǔ</i> 'knob'
魚 fish	枚 <i>méi</i> 'stick', 頭 <i>tóu</i> 'head'	頭 <i>tóu</i> 'head', 首 <i>shǒu</i> 'head', 枚 <i>méi</i> 'stick'
珠 pearl	枚 <i>méi</i> 'stick'	孔 <i>kǒng</i> 'eyelet'
竹竿 bamboo pole	个 <i>gè</i> 'individual'	个 <i>gè</i> 'individual', 節 <i>jié</i> 'node'

While there is no doubt, as Zhang has observed, that *mei* and *ge* were used as generic classifiers as long as they emerged as numerical-classifiers in the Han dynasty, a distinction between the two seems not have been recognized in the literature. For example:

– 枚 *méi* in Han Period

(taken from Zhang Cheng 2009, Chen Lianjun 2003, Wei Desheng 2000, Huang Shengzhang 1961, Peyraube 1998, Zhang Junzhi 2004, etc.)

(14) a. 絮巾一枚，黃布禪衣一領... (EPT51-66)

xù jīn yì méi, huáng bù chán yī yì lǐng...
cotton towel one *mei*, yellow cloth Buddhist gown one collar...
'one cotton towel and one yellow buddhistic cloth gown.'

b. 繩十枚。 (EPT59-124A)

shéng shí méi
robe ten *mei*
'ten robes.'

c. 木十五枚... 車二枚, ... 軸一。 (EPT57-60)

mù shí-wǔ méi... chē èr méi, ... zhóu yī.
timber fifteen *mei*... carriage er *mei*... axle yī.
'fifteen trunks... two carriages... (and) one axle.'

d. 筆一枚。 (M6D13, Zheng)

bǐ yì méi.
brush one *mei*
'one (writing) brush.'

e. 具樁六枚，鈎十枚，弓二枚，弩二枚。 (Ju Jian: 383)

jùzhuāng liù méi, gōu shí méi, gōng èr méi,
juzhuang six *mei*, hook ten *mei*, bow two *mei*,
nǚ èr méi.
cross-bow two *mei*,
'there are six Juzhuang-s, ten hooks, two bows and two cross-bows.'

f. 梁王曰：“若寡人國小也，尚有（徑寸之珠照車前後各十二）

乘者十枚（奈何以萬乘之國而無寶乎？）”
(Shi Ji, Tianjing Zhongwan Shijia)

Liáng Wáng yuē: “ruò guǎrén guó xiǎo yě, (...).”
Liang King say: though my country small prt.
shàng yǒu (...) *shèng zhě shí méi (...).*
still have (...) carriages Prt. ten *mei* (...).
'The King of Liang said: “though my country is smaller, I still have ten (...) sets of carriages (...).”'

g. 鳥一枚。 (Shuo Wen)

niǎo yì méi.
bird one *mei*
'one bird.'

h. ... 大柔十枚... (Shang Han Lun)

... dà-róu shí méi...
... Darou (herbs) ten *mei*
'ten Darou herbs.'

i. ... 取四方石一枚，六方石一枚。 (Zhong Ben Qi Jing)

... qǔ sì-fāng shí yì méi, liù-fāng shí yì méi.
... Take quadrilateral stone one *mei*, hexagon stone one *mei*
'... to take one quadrilateral stone and one hexagon stone.'

– 箇/个 *gè* in Han Dynasty

(taken from Zhang Cheng 2009, Hong Cheng 1963 and Da Zhengyu 2004)

- (15) a. 其禮... 少牢則羊左肩七個... (*Liji, Shaoyi*)
qí lǐ... Shàoláo zé yáng zuǒ-jiān qī gè...
 Its ritual... Shaolao then sheep left-shoulder seven *gè*
 ‘By Ritual, seven sheep left-shoulders are used for Shaolao worship.’
- b. 譬如群獸然，一个負矢，群獸皆走。(*Guoyu, Wuyu*)
pìrú qún shòu rán, yī gè fù shǐ, qún shòu jiē zǒu.
 For group animal like, one *gè* get arrow, group beast all run.
 ‘Like animals, if one got shot, the others all run away.’
- c. 一個嫡女...，一個嫡男...。(*Guoyu, Wuyu*)
yí gè dī-nǚ..., yí gè dī-nán...
 one *gè* legitimate daughter..., one *gè* legitimate-son.
 ‘one legitimate daughter..., one legitimate-son.’
- d. 竹竿萬个。(*Shi Ji, Huozhi liezhuan*)
zhú-gān wàn gè.
 bamboo-pole ten-thousand *gè*
 ‘Ten thousand bamboo poles.’
- e. 鹿皮四个。(*Guoyu, Qiyu*)
lù pí sì gè.
 deer skin four *gè*
 ‘four deer skins.’

– 個 *gè* in Wei-Jin Period (taken from Liu Shiru: 1965)

- (16) a. ...取其剔齒織一个。
 (*Lu Yun, Yu Xiong Pingyuan Shu*)
...qǔ qí tī-chǐ-qiān yí gè
 ...take his pick-clean-teeth-stick one *gè*
 ‘...take one toothpick.’
- b. 且寺內先有數个猛狗，但見一狼，狗無不競來吠齧。
 (*Wang Zhao, Sheli Ganying Jibielu*)
qiě sì nèi xiān yǒu shù gè měng gǒu,
 Temple inside have several CL violent dog,

dàn jiàn yì láng, gǒu wúbù jìng lái fèi niè.
 sudden see one wolf, dog all even come bark bite.

‘The temple has several violent dogs and when they suddenly saw a wolf, all of them barked and came out to fight.’

- c. 善法寺... 有两个榉樹...
 (*Wang Zhao, Sheli Ganying Jibielu*)
Shànfǎ sì... yǒu liǎng gè Huà shù...
 Shanfa Temple... has two *gè* Hua tree
 ‘There are two Hua trees in (...) Shang fasi.’
- d. 堂屋西壁下... 有三个石柱。(*Sou Shen Ji, Vol. 1*)
táng-wū xī bì xià... yǒu sān gè shí zhù.
 central-room west wall under... have three *gè* stone pole
 ‘there are three stone poles... under the west wall of the central room.’
- e. 天生男女共一處，願得两个成翁媪。
 (*Hengchuiquci, Zhuonuo Ge*)
tiān shēng nán nǚ gòng yí chù,
 Haven birth male female all one place,
yuàn-dé liǎng gè chéng wēng yù.
 wish-have two *gè* become old-man old-woman
 ‘The haven made male and females together, (I) wish (your) two love each other forever.’
- f. 誰論洛水，一个河神。
 (*Yu Xin, Liangdonggong xingyuming*)
shuí lùn Luò shuǐ, yí gè Hé Shén
 who say Luo river, one *gè* River God
 ‘Who says of Luo, a God of the River.’

The *méi* 枚, though used for most nouns (and thus earning it the name of generic classifier), occurs overwhelmingly in the [N+Num+*mei*] structure in (and before) the Han Dynasty; whereas the *gè* 箇/箇, though rarely used as a classifier before Han, as Zhang (2009) has pointed out, commonly occurs in the structure of [Num+*ge*+N] in the Wei-Jin Period. That is to say, even if *méi* 枚 and *gè* 箇 were both used as general classifiers occurring with a number and a noun, they were different chronologically and structurally:

(17) Chronology and structure of classifiers in Han Period and Wei-Jin Period

Chronology	Structure
Han Dynasty (and before)	[Noun Num CL (méi/gè)]
Wei-Jin Period (and after)	[Num CL (gè/méi) Noun]

This contrast, as we observe here, is extremely important for the development of classifiers in classical Chinese.

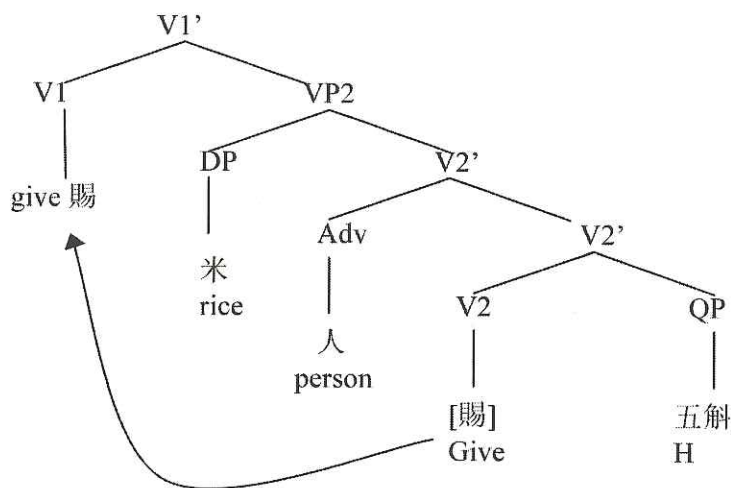
First, as argued in Wu Fuxiang, Feng Shengli and Huang Zhengde (2006), the structure of [N Num CL] (i.e., 人十個 *rén shí gè* 'people ten CL') and the structure of [Num CL N] (i.e., 十個人 *shí gè rén* 'ten CL people') are different. The former is a predicative structure while the latter is nominal, as evidenced in the following example (taken from Wu *et al.*, 2006)¹³:

(18) 賜米人五斛。(Quan Jin Wen, Vol. 30)

cì mǐ rén wǔ hú.

give rice person five Hu (a measure of grain)

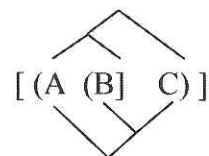
'give every person five Hu of rice.'



¹³ The analysis and the tree diagram presented here were developed by J. Huang in Wu Fuxiang, Feng Shengli and J. Huang (2006), see also Liu (1965: 48–52) for more examples of this type. The following example also supports the predicate analysis:

Though the [N + Num + (adverb) + CL] is a predicate structure shown by the example (18) before the Wei-Jin Period (220–420 AD), it does not logically mean that the same linear forms in (Pre-)Archaic Chinese should be analyzed the same as there are for the Wei-Jin Period, given the argument that Pre-Archaic Chinese may be a different type of language in terms of (1) its word order (i.e., an SOV language as Yu (1981), Feng (1995)... etc., have suggested), (2) its nominal system (i.e., a lexically-realized *div* type language as seen above) and (3) its typology (i.e., an synthetic language as SL. Zhang (1945), D. Xu (2000) and J. Huang (2010) have suggested). In addition to the above properties, Classifiers (or semi-classifiers) in Modern minority SOV languages (like the Yi language exemplified in [23]) also developed from the nominal structure of [N Num CL]. Taking all these considerations into account, it is plausible to consider the [N Num CL] structures in (Pre-) Archaic Chinese as remnants of the lexically-realized *div* system. In other words, it is possible that the [N Num CL] is analyzed as a nominal structure in the old SOV grammar in Pre-Archaic Chinese, and also as a predicate structure in the newly developed analytical language after the Eastern Han (Feng 2009). To illustrate this point, comparing the two syntactic analyses in (19):

(19) Earlier Structure



Later Structure

(19) represents a structure of any phrases. The re-bracketing process is what 'reanalysis' is about and it happens all the time in the history of syntactic changes of human languages.¹⁴ Under the hypothesis given above, the [N Num

(i) 腎有兩枚。(Shi Ji, Bianque Liezhuan)
shèn yǒu liǎng méi
kidney has two mei
'there are two kidneys'

¹⁴ It is always possible that an early-structure, say A, can be reanalyzed as a late-structure B in two different asynchronous systems. For example, the SOV word order in Archaic Chinese (cf. 汝何知 *rǔ hé zhī* 'You what know') is a remnant structure from Proto-Chinese and it was reanalyzed within the SVO system of Archaic Chinese by movement of the *wh*-object to a preverbal position (Feng 1996).

mei] and [Num *ge* N] will be treated differently from previous analysis because if [N Num *mei*] is a nominal structure (of the old SOV system), it will be different from the nominal structure of [Num CL N] (of the new SVO grammar).¹⁵ If, on the other hand, the [N Num *mei*] is a predicate structure (through a reanalysis on the old structure by new generations of the Late Han dynasty), it will also be different from the nominal structure of [Num CL N] as well. That is:

- (20) [N Num *mei*]_{NP} (Pre-Archaic) ≠ [Num *ge* N]_{NP} — typological difference
 [N Num *mei*]_{VP} (Post-Han) ≠ [Num *ge* N]_{NP} — structural difference

The above hypothesis is strongly supported by a stunning fact given in (17): as far as chronology and the original property of generic classifiers are concerned, the generic classifier positions are almost in complementary distribution. Before Han, generic classifiers (overwhelmingly *mei*) occur in [N Num CL], while after Han, generic classifiers (mainly *ge*) occur in [Num CL N], in each of their early stages of classifier developments.

These facts raise some interesting and important questions with respect to previous analysis.

First, if *mei*, as a generic classifier, developed from a [N Num CL] predicate structure before (or during) Han according to Wu *et al.* (2006), but *ge*, as a generic classifier, originated from the [Num CL N] nominal structure during and after Han as seen before, how could the two different structures produce a same result of generic classifiers? This question is difficult to answer by treating the [N Num *mei*] as a predicate structure (Wu *et al.* 2006), because within that structure (i.e., the [Num *mei*] predicate), *mei* cannot be a classifier since there is no noun for which a classifier is needed. Put differently, there is no classifier position within the [Num *mei*] predicate, and this inevitably leaves us with a “predicate-classifier” contradiction. Obviously, the predicate-hypothesis cannot explain why generic classifiers like *mei* developed in a [N, [Num *mei*]_{Predicate}] structure. On the other hand, the plausible answer, as suggested above, may be this: the [N Num *mei*] may be indeed a nominal structure of the SOV system in Pre-Archaic Chinese before (and around) the 11th century BC, and accordingly, a generic classifier like *mei* could legitimately be developed in that position.

¹⁵ Actually, there is evidence showing that a head-initial nominal structure in archaic Chinese (cf. 瞻彼中林 *zhān bǐ zhōng lín* = look it middle wood ‘look at the inside of woods’) changed to a head-final structure such as 中林 *zhōng lín* ‘inside woods’ > 林中 *lín zhōng* ‘woods inside’. Examples like this support the argument made here for the word order change of Classifiers-nominal structures from archaic Chinese to medieval Chinese. I would like to thank the anonymous reviewer for pointing this out for me.

Given this analysis, it becomes plausible why generic classifiers were first developed in the final position of the nominal structure and the predicate-classifier contradiction can be resolved as well. Of course, under this analysis the structure given in (18) will be taken as a result of reanalysis by later generations (SVO speakers) on the old SOV system.

While the predicate-classifier contradiction can be resolved as seen above, there is still an empirical question difficult to resolve by traditional analysis, namely, why generic, rather than specific classifiers were created in the beginning (but not later on) of classifier developments? The general view of classifier development is that specific classifier/s developed first and then more general classifiers, building upon the specific ones, developed later on. However, the actual fact is just the opposite: a generic one (like *mei*) appeared in the beginning and specific ones followed. Why is that so?

In fact, Zhang has clearly recognized the question and made an interesting suggestion: it was the requirement of grammar, not that of semantics as some scholars have believed, that gave rise to the category of numeral classifier which emerged and formed in the period of Late Archaic Chinese (200 AD). This syntactic explanation, as I would like to argue, has significantly advances our understanding of the development of classifiers in Chinese because it provides deeper insight of the grammatical requirements: the classifier is required by syntax, thus the generic one/s is/are favored to fill up the classifier position wherever and whenever there is one.

Though the syntactic approach has brought a significant insight into the study of Chinese classifier developments, it encounters a serious challenge when we scrutinize the data exemplified as follows ([21a] is repeated from [16b]).

- (21) a. 且寺內先有數个猛狗，但見一狼，狗無不競來吠齧。
 (Wang Zhao, *Sheli Gangyin Jibielu*)

qiě sì nèi xiān yǒu shù gè měng gǒu,
 Temple inside have several CL violent dog,
dàn jiàn yì láng, gǒu wúbù jìng lái fèi niè.
 sudden see one wolf, dog all even come bark bite.

‘The temple has several violent dogs and when they suddenly saw a wolf, all of them barked and came out to fight.’

- b. 七枚熱鐵丸... 十八鐵丸。(Fa yuan zhu lin)

qī méi rè tiě wán... shí-bā tiě wán
 seven CL hot iron ball... ten-eight iron ball...

‘(there are) seven hot iron balls... (and) eighteen iron ball...’

If, as one would expect, the general classifier is required by grammar, why does the grammar not equally require a/the general classifier in the same environment? This question cannot be adequately answered with a purely syntactic approach. The dilemma we are facing is this: there must be a grammatical requirement otherwise it is difficult to explain why a general classifier was developed in the early stages of classifier developments. Yet, there must not be such a requirement, otherwise it is difficult to explain why there are nouns that do not need a classifier in the same syntactic environment by the same writer. To put it differently, there is hardly a syntactic reason why *měng gǒu* 猛狗 ‘violent dog’ needs *gè* 個, while *láng* 狼 ‘wolf’ does not in (21a); and why *rè tiě wán* 熱鐵丸 ‘hot iron ball’ needs *méi* 枚 when there are seven, while *tiě wán* 鐵丸 ‘iron ball’ does not when there are eighteen in (21b). If there is no syntactic reason for why some nouns need a classifier *mei/ge* but some others do not, the emergence of general classifiers cannot be attributed to a requirement of grammar, because there is no grammar (categorical requirement) required in examples like (21).

Of course, the random emergences of some syntactic features (cf. the *div* in the present case) may reflect an unstable rate of grammatical change that varies in time and place as is sometimes observed in diachronic syntax in different languages. However, it is crucial to note that the rate-variation of a new grammar generally results from (or determined by) various linguistic factors, including (1) different syntactic environments, (2) different semantic fields, (3) different stylistic devices (文白之差 *wén-bái-zhī-chā*), (4) different genre (文體的區別 *wéntǐ de qūbié*), (5) different register (語體的不同 *yǔtǐ de bùtóng*), or even different grammars between two generations (cf. diglossia).¹⁶ Unfortunately, there were no obvious examples that would be considered as factors that could give rise to the classifier variations in classical Chinese. What we actually found are free variations like the following.

- (22) a. 夫人曰：我今與汝百枚金錢。其婢報曰：我不須。
夫人複告：與汝二百！乃至千枚金錢。
(Zengyi’ahan Jing)

fū-rén yuē: wǒ jīn yǔ nǚ bǎi méi
Madam say: I now give you hundred *mei*
jīn-qián. Qí bì bào yuē:
gold-money. Her slave-girl reply say:

wǒ bù xū. Fū-rén fù gào: yǔ nǚ èr bǎi!
I not need. Madam again tell: give you two hundred!
Nǎi zhì qiān méi jīn-qián.
Even upto thousand *mei* gold-money.

‘The madam said: “now I give you one hundred (pieces of gold) money.” Her slave-girl replied: “I don’t need it”. Madam tell her again: “give you two hundred!” (The number of money) even (goes) up to one thousand.’

- b. (菩薩)探囊中五百銀錢，盡用與之。瞿夷念：華極直數錢，乃雇五百。貪其銀寶，與五莖華，自留二枚。
(*Taizi Ruiying benqi Jing Shang*)

(Púsà) tàn náng zhōng wǔ bǎi yín-qián,
Buddha search bag inside five hundred silver-money,
jìn yòng yǔ zhī. Qú Yí niàn: huā jí
all use give her. Qu Yi think: flower outmost

zhí shù qián, nǎi gù wǔ bǎi.: tān
worth few money, even spend five hundred crave

qí yín-bǎo, yǔ wǔ jīng huā, zì liú. èr méi
its silver-gem, give five stem flower, self keep two *mei*

‘Buddha searched out five hundreds of silver-money from his bag and gave them all to Ju Yi. Ju Yi thought that the flowers cost outmost a few pieces of silver, he even spent five hundred for it. But she is greedy for the money, so she gave five flowers to Buddha and kept two for herself.’

As seen in (22a) and (22b), *mei* appears randomly with the same noun: *jīn-qián* 金錢 ‘gold-money’ or *yín-qián* 銀錢 ‘silver-money’. It shows clearly that the alternative usages of the generic classifier have nothing to do with the different types of nouns, and hardly any genre or styles are responsible for the variations as well. This, once again, causes a problem for the syntactic account.

Now we are facing a syntactic dilemma again: on the one hand, the appearance of general classifiers indicates a change of grammatical system of the numerical structure NP; on the other hand, the non-categorical (or random) usages of the general classifiers give no condition for the syntactic approach to be held. The problem then is: why there are general classifiers randomly appearing in the same syntactic environments in the beginning of their development?

Based on the facts given before and regarding the syntactic problems outlined above, I would like to propose that the emergence of the general classifiers is motivated by the grammar of prosody. That is to say, a classifier is required or

¹⁶ See Feng (2010a) for relevant discussions on stylistics, genre and diglossia of a Register Grammar (语体语法 *Yuti Yufa*).

at least preferred in environments where prosody is defective and thus a classifier is used to overcome the prosodic defect. This implies that in environments where prosody is satisfied, no metrical help is necessary and thus a classifier is optional. This hypothesis explains, as seen in next section, why there are variations between [N [Num]_σ [CL]_σ] and [N [Num]_{σσ} ___] in the (Pre-)Han times, and between [[Num]_σ [CL]_σ N] and [[Num]_{σσ} ___N] during and after Han dynasties (ca. 206 BC–220 AD), during the process of the change. In other words, whether or not the nominal structure in early stages of their developments is formed with a classifier, is a reflection of the prosodic requirement, a topic that will be explored in details in next section.

7 Prosodically Motivated Classifiers in Archaic Chinese

How could prosody affect the emergence of classifiers in a nominal structure? Before we answer this question, it is worthwhile to look at the prosodic behavior of the classifiers in Modern Yi, a minority language spoken in southern China (tested by Hu).

- (23) *Mandarin* *Modern Yi*
- | | | |
|---|---|--|
| a. <i>wǔ gè rén</i>
five CL people
'five people' | a'. <i>co nga yuo</i>
people five CL | a''. <i>co *nga</i>
people five |
| b. <i>wǔshí gè rén</i>
fifty CL people
'fifty people' | b'. <i>co nge-ci yuo</i>
people fifty CL
'fifty people' | b''. <i>co nge-ci</i>
people fifty
'fifty people' |
| c. <i>wǔ gè rén</i>
five CL people
'five people' | c'. <i>co -ma *nge</i>
people CL five
'five people' | c''. <i>co -ma nge ci</i>
people CL fifty
'fifty people' |

What we can see from the above examples is clearly a prosodic effect on the numerical forms in its nominal structure:¹⁷

¹⁷ In Yi, the CL for 'people' varies depending on the number and phonological environment, but they will not affect the argument presented here.

- (24) (i) In the structure of [N + monosyllabic numerical form], if the NF (numerical form/number) is monosyllabic, then the NF is not acceptable (23a'');
 (ii) In the [N + monosyllabic numerical form + CL], if the NF + CL form is a disyllabic unit, then the result is acceptable (23a').
 (iii) If the NF is disyllabic itself, the result is also acceptable (i.e., [N + disyllabic numerical form + ___]) even if there is no CL (23b''/c'').

The striking fact about the classifier structure in Modern Yi is that in the final position of the numerical expressions, whether or not there is a classifier depends on the prosodic qualities of the numerical form. If it is monosyllabic, a CL is needed for otherwise the [N + Num] form is prosodically ineffable. If, on the other hand, the numerical form is disyllabic, then the result of [N + Num] is grammatical without the CL. Doubtlessly, prosody affects the use of the classifier.

Given the prosodically constrained classifier in Yi, I would like to suggest that the emergence of classifiers in classical Chinese may also be affected by the same force of prosody. This hypothesis is supported by the following facts. First, like the examples in Yi, when the numeric word is monosyllabic, it hardly occurs at the end of the NP. For example, there are hardly any cases like the following in our data:¹⁸

- (25) a. *左肩七 (cf. [15a])
 * *zuǒ-jiān qī*
 left-shoulder seven'
 b. *竹竿萬 (cf. [15d])
 * *zhú-gān wàn*
 bamboo-pole ten-thousand'

¹⁸ We are well aware that there are a few counterexamples like the following found in classical documents *Zuozhuan* (左传, 定公年):

- (ii) 公子地有白马四。
Gōngzǐ Dì yǒu bái-mǎ sì
 Gongzi Di has white-horse four
 'Gongzi Di has four white-horses.'

However, it is undeniable that monosyllabic numbers often occur with a classifier in a nominal structure as seen above and the exceptions are sporadically few. Nevertheless, more work is needed to account for the exceptions in future research.

- c. *絮巾一 (cf. [14a])
 * xù-jīn yī
 cotton-twale one'

Secondly, monosyllabic numeric words seem also to be excluded from the [[Num]_σ __ [NN]_{σσ}] structure, hence there are almost no examples like (26).

- (26) a. *一負矢 (cf. [15b])
 * yī fù shǐ
 one got shoot'
 b. *一嫡男 (cf. [15c])
 * yì dí-nán
 one legitimate-son'
 c. *數猛狗 (cf. [16b])
 *shù měng-gǒu
 few violent-dog'
 d. *三石柱 (cf. [16d])
 *sān shí-zhù
 three stone-pole'
 e. *千金錢 (cf. [22a])
 *qiān jīn-qián
 thousand gold-money

Given the “non-existent” evidence and the proso-syntactic hypothesis above, it is expected that monosyllabic numerical words should commonly occur with a classifier in [N Num CL] before (and during) Han and in [Num CL N] during (and after) Han. This prediction is born out as shown in examples seen above and given below.

(27) – [N Num + CL]

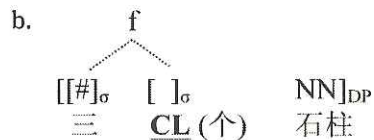
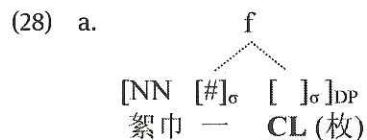
- a. 斧二枚。 (*Dunhuang Hanjian*: 690)
 fǔ èr méi
 axe two *mei*
 ‘two axes’

- b. = (14e) 具樁六枚，鉤十枚，弓二枚，弩二枚。 (*Jujian*: 383)
 jùzhuāng liù méi, gōu shí méi, gōng èr méi, nǔ èr méi.
 juzhuang six *mei*, hook ten *mei*, bow two *mei*, cross-bow two *mei*,
 ‘there are six Juzhuang-s, ten hooks, two bows and two cross-bows.’
- c. 買狗四枚。 (*Jujian*: 343)
 mǎi gǒu sì méi
 buy dog four *mei*
 ‘To buy four dogs.’
- d. 瘳樹一枚。 (*Jujian*: 516)
 fēi-shù yí méi
 fei-tree one *mei*
 ‘one Fei tree.’
- [Num + CL NN]
- e. = (15c) 一個嫡女...，一個嫡男...。 (*Guoyu*, *Wuyu*)
 yí gè dí-nǚ..., yí gè dí-nán...
 one *ge* legitimate daughter..., one *ge* legitimate-son.
 ‘one legitimate daughter..., one legitimate-son.’
- f. = (16c) 善法寺...有兩個樺樹...。
 (王劭 *Wang Zhao*, 舍利感應記別錄 *Sheli Ganying Jibielu*)
 Shànfǎ sì... yǒu liǎng gè Huà shù...
 Shanfa Temple... has two *ge* Hua tree
 ‘There are two Hua trees in (...) Shang fasi.’
- g. = (16d) 堂屋西壁下...有三個石柱。 (*Sou Shen Ji*, Vol. 1)
 táng-wū xī bì xià... yǒu sān gè shí zhù.
 central-room west wall under... have three *ge* stone pole
 ‘there are three stone poles...under the west wall of the central room.’

The commonly observed classifiers almost all occur after a monosyllabic numerical word, indicating strongly that it is prosody that motivates the use of classifier in the very beginning of their developments.

Although we don’t have native speakers to provide grammatical judgments on the prosodic structures (as we have for the Modern Yi examples), the examples given in (25) and (27) are quite self-evidenced: a classifier emerges when the number is monosyllabic (such as *er* ‘two’, *qī* ‘seven’, *bǎi* ‘hundred’, *qiān* ‘thousand’), while it can be omitted if the number is disyllabic (such as *èr-bǎi*

'two hundred', *wǔ-bǎi* 'five hundred', *shí-bā* 'eighteen'), in both the [N Num CL] and the [Num CL N] structures as summarized in (28).



Obviously, the proso-syntactic pattern of [N+ [[#]_σ + [CL]_σ] in Chinese parallels the proso-syntactic pattern in Modern Yi (23). The correlation between the two languages should not be considered a coincidence, instead it may reflect a mechanism of more general process in classifier developments, as Dai Qingxia and Jiang Yin (2005) have observed:¹⁹

"In Tibetan-Burman languages, if the numerical words are monosyllabic, then individual classifiers are relatively well-developed; if, on the other hand, the numerical words are polysyllabic, individual classifiers are generally underdeveloped or extremely rare [藏緬語中，凡是數詞是單音節的，個體量詞就比較發達；數詞是多音節的，個體量詞就不夠發達或者極少]."

"The numerical words in Jingpo language are mostly polysyllabic, as a result, individual classifiers are not able to be developed; On the other hand, the numerical words in Ha'ni language are all monosyllabic... individual classifiers are thus flourished there [景頗語的數詞以多音節為主，所以個體量詞得不到發展；而哈尼語的數詞都是單音節的... 個體量詞就很豐富]."

Given the cross-linguistics tendency summarized by Dai and Jiang, it becomes quite plausible that prosody may indeed be the trigger for the birth of classifier syntax not only in Chinese but also in Burman-Tibetan languages as well.

This hypothesis receives further support from a parallel development of the light-verb syntax. It has been observed (Xu 2003; Hu 2005, Feng 2008) that there were more and more phonetically realized lightverbs after Eastern Han Dynasty (ca. 25 BC–220 AD). For example, do/make 作 *zuò*:

¹⁹ I would like to thank Professor Hu Suhua for confirming with the principle author of the paper the statements given here.

(29) – *zuò mèng* 作夢 (*Fayuanzhulin*, Vol. 76)

a. 其夜作夢，見有人來。

qí yè zuò mèng, jiàn yǒu rén lái
that night make dream, see have men come

'(He) had a dream that night, (in the dream) he saw a man coming.'

a'. (穎)夜夢之曰... (*Zuozhuan*)

(kē) yè mèng zhī yuē...

(Ke) night dream him say...

'One night, Ke dreamed about him saying ...'

– *zuò hūn* 作婚 (*Fobenxing Jijing*, Vol. 18)

b. 仁者何用工巧之人共作婚為？

rén zhě hé yòng gōng-qiǎo zhī
benevolent man why need artistry 's

rén gong zuò-hūn wéi
man together make-marriage Question-Particle

'Why a benevolent man need to marry a artistry's daughter?'

b'. (相如)與卓氏婚，饒於財。

(*Shi Ji, Sima Xiangru Liezhuan*).

(xiàng rú) yǔ Zhuó Shì hūn, ráo yú cái.

(Xiangru) with Zhuo Ms. marriage, rich on fortune

'Xiangru got married with Ms. Zhuo (who made him) a great fortune.'

– *zuò yǒu* 作友 (*Fobenxing Jijing*, Vol. 25)

c. 我不用汝與我作友

wǒ bú yòng nǐ yǔ wǒ zuò yǒu.

I not need you with me make friend

'I don't need to make a friend with you.'

c'. 無友不如己者。 (*Lunyu, Xue Er*)

wú yǒu bù rú jǐ zhě.

not friend no as self one.

'(One) should not make a friend with one who is not as good as you.'

Why does the covert (zero) lightverbs in Archaic Chinese become overt (i.e., phonetically realized) during (and after) Eastern Han? Other than external

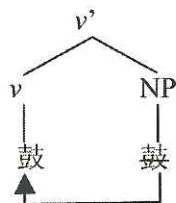
(social or cultural) reasons, Feng (2008) argues that the phonetically realized lightverb syntax in late Archaic Chinese is motivated by prosody. Consider the following examples:

(30) a. 不鼓而鳴。(Fobenxing Jijing)

bù gǔ ér míng.

Not drum but sound

'The drum sounded without drumming it.'



b. 時彼大眾... 或復騰鈴, 或復打鼓。(Fobenxing Jijing, Vol. 8)

shí bǐ dà-zhòng... huò fù téng líng, huò
time these people... some again toss bell, some

fù dǎ gǔ.
again beat drum

'At that time, those people... some tossed bells and some drummed drums again'

c. 復教打鼓振鈴, 遍告城內人。(Fobenxing Jijing, Vol. 14)

fù jiào dǎ gǔ zhèn líng, biàn gào chéng-nèi rén.
again let beat drum shake bell, everywhere tell city-inside people

'Let them beat the drum and shake the bells again, telling the city people everywhere.'

d. 天魔軍眾忽然集, 處處打鼓震地噪。(Fobenxing Jijing, Vol. 29)

Tiān mó jūn zhòng hū-rán jí, chù-chù
Heaven evil army many sudden gather, everywhere

dǎ gǔ zhèn dì zào.
beat drum shack earth noisy

'The army of the heaven-evil suddenly gathered. They drummed everywhere and shaken the earth so noisy.'

f. 不久打鼓, 明星欲出。(Fobenxing Jijing, Vol. 36)

bù jiǔ dǎ gǔ, míng xīng yù chū.

not-long beat drum, bright star almost out

'After while, (they) beat drums and then the bright stars come out.'

In (Pre-)Archaic Chinese, nouns like 鼓 gǔ 'drum' can easily be verbalized (i.e., denominative) through a head-movement to the empty position 'v' shown in (30a); In Late Archaic Chinese, however, the empty v must be filled up with a phonetically realized (light-) verb in order to meet the prosodic grammar of the language. The prosodic requirement for phonetically realized lightverb is evidenced by the fact that there was hardly any covert lightverb-operation used as an independent foot in the environments where overt lightverbs were used ('()' represents footing group):²⁰

(31) a. *(或复)(鼓 _)

huò fù gǔ
some again drum

'some drummed drums again'

b. *(复教)(鼓 _)(振鈴)

fù jiào gǔ zhèn líng
Again let drum shake bell

'Let them beat the drum and shake the bills again.'

c. *(處處)(鼓 _)(震地)(噪)

Chù-chù gǔ zhèn dì zào.
everywhere drum shack earth noisy

'They drummed everywhere and shaken the earth so noisy.'

d. *(不久)(鼓 _), (明星)(欲出)

bù jiǔ gǔ, míng xīng yù chū.
Not long drum, bright stars almost come.

'After while, (they) beat drums and then the bright stars almost come out.'

²⁰ Note that the *gu* in (30a) is not used as an independent foot, instead, it forms a foot with *bu* which licenses its denominative process prosodically.

The “non-existent” examples in (31) can be systematically accounted for by their defective prosody, that is, *gǔ* ‘drum,’ as a monosyllable word, cannot stand alone under the disyllabic foot requirement of the language at that time. As a result, (31) confirms the hypothesis that it is prosody that motivates the covert lightverbs to become overt in environments where prosody is defective, which parallels to examples (23) and (28).

Given all the arguments above, it becomes quite convincing that prosody may not only trigger the overt light nouns to appear, but also the covert light verbs to become overt. If this is so, the syntactic operations of the phonetically realized *v* (i.e., lightverbs) and the morphologically realized *div* (i.e., lightnouns or classifiers) receive a unified explanation: both of them are activated by a prosodic factor in the Late Archaic Chinese grammar.

8 Final Remarks and Conclusion

Regarding the prosodic analysis of the newly developed lightverbs and lightnouns in classical Chinese given above, one may ask why there are parallel proso-syntactic changes between the two functional categories during and after Late Archaic Chinese. The answer, as I would like to suggest, lies in the theory of diachronic syntax. First, according to recent studies on diachronic syntax (Kroch 2000, Ian 2008), internal syntactic changes are subject to a parametric setting (or choice) similar to synchronic variations among different languages. This theoretical assumption entails that there should be no impossible variation allowed by UG (Universal Grammar). Informally speaking, new grammars in the course of syntactic change are hidden operations of the computational system of the language and potentially ready for activation by a next generation of native speakers through relevant (internal or external) factors in the language. Under this scenario and given the fact that independent classifiers and overt lightverbs were newly developed in Late Archaic Chinese, a legitimate question then is: What is/are the factor/s that activates the syntactic operation of the overt lightverbs and lightnouns? More specifically, what is/are the factor/s that activates the *div* system for the new classifier operation, and, by the same token, motivates the phonological system to spell out the empty lightverbs as well? As I have suggested above, it is prosody that triggers the change of the grammar not only for the syntax of light verbs and nouns, but also other prosodic grammars such as the newly developed disyllabic VV compounds, the [bei VV] structures, the VR structures, and the *ba*-construction ... etc., which are all motivated under the same force of prosody. As a result, the newly developed classifiers in the present study are merely a sub-case of a global change activated by

prosody, and thus provide additional evidence for the hypothesis that prosody has changed the Old Chinese from a synthetic language (with a system of segmental-phonological morphology) to an analytical language (with a system of suprasegmental-phonological morphology), around the time of Eastern Han (Feng 2009).

If the theory presented here is correct and acceptable, it will explain not only some diachronic syntax in terms of a prosodic parameterization, but also some changes of literary forms in terms of their poetic prosody (cf., the four-syllable-per-line poem changed into five- and seven-syllable-per-line poems after Han; Feng 2010b), an interesting and interdisciplinary area for future research.

References

- Bei, Luobei (貝羅貝). 1998. 上古、中古漢語量詞的歷史發展 *Shanggu, Zhonggu Hanyu liangci de lishi fazhan* [The Development of Classifiers in Archaic and Medieval Chinese], 語言學論叢 *Yuyanxue Luncong*, Vol. 21: 99–122.
- Borer, Hagit. 2005. *In Name Only*. Oxford: Oxford University Press.
- Campbell, Rod. 2004. Focus, classifiers and quantification typology: A brief account of cardinal expression in Early Inscriptural Chinese. In *Meaning and form: Essays in Pre-modern Chinese grammar*, Ken-ichi Takashima and Jiang Shaoyu (eds.), 19–41. Munich: Lincom Europa.
- Dai, Qingxia and Jiang Ying (戴慶夏, 蔣穎). 2005. 論藏緬語的反響型名量詞 *Lun Zangmian yu de fanxiang xing mingliangci* [The echo noun-classifiers in Tibeto-Burman Language]. 中央民族大學學報 *Zhongyang Minzu Daxue Xuebao* 32: 124–129.
- Dai, Qingxia and Jiang Ying (戴慶夏, 蔣穎). 2004. 萌芽期量詞的類型學特征景頗語量詞的個案研究 *Mengya qi liangci de leixingxue tezheng-jingpo yu liangci de ge'an yanjiu* [Typological characteristics of classifiers at a primitive stage – the case of Jingpo], *Studies on Sino-Tibetan languages: Papers in honor of Professor Hwang-Cherng Gong on his seventieth Birthday*. Taipei: Academia Sinica, 315–325.
- Djamouri, Redouane. 2010. 甲骨文中和上古漢語文獻中名詞前“有”表復數的形式 *Jiaguwen zhong he shanggu Hanyu wenxian zhong mingci qian “you” biao fushu de xingshi* [Plurality expression ‘you’ before Noun Phrases in documents of Oracle and Bone Inscriptions and in Old Chinese]. In 量與復數的研究 *Liang yu fushu de yanjiu* [Quantification and Plurality], Dan Xu (ed.), 123–139. Beijing: Shangwu Yinshuguan.
- Dobson, W. A. C. H. 1962. *Early Archaic Chinese*. Toronto: Toronto University Press.
- Feng, Shengli. 1996. Prosodically Constrained Syntactic Changes in Early Archaic Chinese. *Journal of East Asian Linguistics*, 4: 323–371.
- Feng, Shengli. 2008. 輕動詞移位與古今漢語的動賓關係 *Qingdongci yiwei yu gujin hanyu de dongbin guanxi* [Light verb Movement in Modern and Classical Chinese]. 語言科學 *Yuyan Kexue* 1: 3–16.
- Feng, Shengli. 2009. 論漢語韻律的形態功能與句法演變的歷史分期 *Lun hanyu yunlü de xingtai yu jufa yanbian de lishi fenqi* [On the morphological function of prosody and the chronology of syntactic changes in Chinese]. 歷史語言學研究, 第二輯. *Lishi Yuyanxue Yanjiu* 2: 11–31.

- Feng, Shengli. 2010a. 论语体的机制及其语法属性 *Lun yuti de jizhi jiqi yufa shuxing* [On Mechanisms of Register System and its grammatical property]. *Zhongguo Yuwen* 5: 400–412.
- Feng, Shengli. 2010b. A Prosodic Explanation for Chinese Poetic Evolution. *Tsing Hua Journal of Chinese Studies* 2: 223–257.
- Hong, Cheng (洪誠). 2000. 關於漢語史材料運用的問題 *Guanyu hanyu shi cailiao yunyong de wenti*. [Issues about historical textual resources]. In *Hong Cheng Wenji*, Hong Cheng (ed.). Nanjing: Jiangsu Guji Chubanshe.
- Hong, Yifang (洪藝芳). 2000. 敦煌吐魯番文書中之量詞研究 *Dunhuang Tulufan wenshu zhong zhi liangci Yanjiu* [Studies on Classifiers of Dunhuang Tulufan Wenshu]. Taipei: Wenjing Press.
- Huang, Shengzhang (黃盛璋). 1961. 兩漢時代的量詞 *Liang Han shidai de liangci* [Classifiers in two Han dynasties]. *Zhongguo Yuwen* 8: 21–29.
- Huang, C.-T. James. 1987. Existential sentences in Chinese and (in)definiteness. In *The Representation of (In)definiteness*, E. Reuland and A. ter Meulen (eds.), 226–253. Cambridge MA: MIT Press.
- Huang, Zaijun (黃載君). 1964. 從甲文、金文量詞的應用，考察漢語量詞的起源和發展 *Cong jiawen, jinwen liangci de yingyong kaocha hanyu liangci de qiyan he fazhan* [Investigation of the origin and development of classifiers based on the usages of classifiers in Aoracle-bone and Brangze incryptures]. *Zhongguo Yuwen* 6: 432–441.
- Hu, Chirui (胡敕瑞). 2005. 从隐含到呈现(上) — 试论中古词汇的一个本质变化 *Cong yinhan dao chengxian (shang) – Shilun zhonggu cihui de yige benzhi Bianhua* [From Implying to Presenting (Part I): An Essential Change of Chinese Vocabulary in the Middle Times]. *语言学论丛, Yuyanxue Luncong*, Vol. 31: 1–21.
- Kroch, Tony. 2000. Syntactic Change. *The Handbook of Contemporary Syntactic Theory*, Mark Baltin and Chris Collins (eds.), 699–729. Oxford: Blackwell.
- Larson, Richard. 1988. On the double object construction, *Linguistic Inquiry* 19: 339–391.
- Li, Yuming (李宇明). 2000. 拷貝型量詞及其在漢藏語系量詞發展中的地位 *Kaobeixing liangci jiqi zai hanzang yuxi liangci fazhan zhong de diwei* [Classifiers of the copy-type and their status in the development of classifiers in Sino-Tibetan Chinese]. *Zhongguo Yuwen* 1: 27–34.
- Liu, Danqing (刘丹青). 2008. 漢語名詞性短語的句法類型特征 *Hanyu mingci xing duanyu de jufa leixing tezhen* [Syntactic types and characteristics of noun phrases in Chinese]. *Zhongguo Yuwen* 1: 5–21.
- Liu, Hui (刘辉). 2009. *The Syntax and Semantics of Event Classifiers in modern Chinese*. Ph.D. diss. Shanghai Normal University.
- Liu, Shiru (劉世儒). 1965. 魏晉南北朝量詞研究 *Weijin Nanbeichao liangci yanjiu* [Studies on Classifiers in Weijin North-South dynasties]. Beijing: Zhonghua Shuju.
- Lü, Shuxiang (呂叔湘). 1982. 中國文法要略 *Zhongguo Wenfa Yaolue* [An Outline of Chinese Grammar]. Beijing: Shangwu Yinshuguan.
- Lyons, John. 1977. *Semantics: Volume 2*. Cambridge: Cambridge University Press.
- Massam, Diane. 2009. On the separation and relatedness of classifiers, number and individuation in Niuean. *Language and Linguistics* 10 (4): 669–699.
- Peyraube, Alain. 1991. Some Remarks on the History of Chinese Classifiers. *Santa Barbara Papers in Linguistics* 3: 106–126.
- Peyraube, Alain. 1998. On the History of Classifiers in Archaic and Medieval Chinese. In *Studia Linguistica Serica 漢語研究 Hanyu Yanjiu*, Benjamin K. T'sou (ed.), 131–145. City University of Hong Kong.
- Roberts, Ian and Anna Roussou. 2003. *Syntactic Change – A Minimalist Approach to Grammaticalization*. Cambridge: Cambridge University Press.
- Sagart, Laurent. 2000. *The Root of Old Chinese*. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Shen, Pei (沈培). 1994. 殷墟甲骨卜辭語序研究 *Yinxu jiagu buci yuxu yanjiu* [Studies on Word Order in Yinxu's Oracle bone scriptures]. Taipei: Wenjin Press.
- Tang, C.-C. Jane (湯志真). 1996. *Ta mai-le bi shi zhi* and Chinese phrase structure. 中央研究院歷史語言研究所集刊 *Zhongyang yanjiuyuan lishi yuyan yanjiusuo jikan* [Bulletin of the Institute of History and Philology] 67: 445–502.
- Wang, Li (王力). 1989. 漢語史稿 *Hanyu Shigao* [The History of Chinese]. Beijing: Shangwu Yinshuguan.
- Wu, Fuxiang (吳福祥). 2005. 魏晉南北朝時期漢語名量詞範疇的語法化程度 *Weijin Nanbeichao shiqi hanyu mingliangci fanchou de yufahua chengdu* [Degree of Grammaticalization of noun-classifiers in Weijin South-North Dynasties], 第三屆漢語語法化問題國際學術討論會論文, Disanjie Hanyu Yufahua wenti Guoji Xueshu Taolun Hui Lunwen [Paper presented at the Third International Conference on Issues of Grammaticalization in Chinese].
- Wu, Fuxiang (吳福祥). 2007. 魏晉南北朝時期漢語名量詞範疇的語法化程度 *Weijin Nanbeichao shiqi hanyu mingliangci fanchou de yufahua chengdu* [Degree of Grammaticalization of noun-classifiers in Weijin South-North Dynasties]. In *語法化與語法研究(三) Yufahua yu yufa yanjiu (san)* [Grammaticalization and Studies on Grammar, III], Shen Jiaxuan, Wu Fuxiang and Li Zongjiang (eds.), 246–268. Beijing: Commercial Press.
- Wu, Fuxiang, Feng Shengli and Huang Zhengde (吳福祥、馮勝利、黃正德). 2006. 漢語“數量名”格式的來源 *Hanyu 'shu liang ming' geshi de laiyan* [The origin of the construction of 'numeral + classifier + noun' in Chinese]. *Zhongguo Yuwen* 5: 387–400.
- Xu, Dan (徐丹). 2003. 趨向動詞‘來/去’與語法化. *Quxiang dongci 'lai/qu' yu yufahua*. [Grammaticalization and the directional verbs *lai* and *qu*]. Paper presented at the Research Center of Chinese Linguistics at Peking University, 25 December 2003.
- Xu, Dan (徐丹). 2006. *Typological Change in Chinese Syntax*. Oxford: Oxford Press.
- Yang-Drocourt, Z. 1993. *Evolution syntaxique des classificateurs chinois du 14ème siècle av. J. C. au 17ème siècle*. Paris, Thèse de Doctorat de l'EHESS.
- Zhang, Cheng (張頴). 2012. 漢語通用量詞的發展與漢語量詞範疇的確立 *Hanyu tongyong liangci de fazhan yu hanyu liangci fanchou de queli* [The relation between the development of general classifiers and the establishment of the category of numeral classifiers in Chinese]. *Journal of Chinese Linguistics* 40: 2, 307–321.
- Zhang, Shilu (張世祿). 1939. 因文法的问题谈到文白分界 *Yin wenfa wenti tando wen-bai de fenjie* [From Grammar to the distinction between literate-ness and classical-ness]. *语文周刊 Yuwen Zhoukan*, 30–32.
- Zhang, Yanjun (張延俊). 2002. 也論漢語“數量名”形式的產生 *Ye lun hanyu 'shu-liang-ming' xingshi de chansheng* [On the birth of the form 'Number, Classifier, Noun' in Chinese]. *古漢語研究 Guhanyu Yanjiu* 2: 26–29.
- Zhengzhang, Shangfang (鄭張尚方). 2009. 上古音系 *Shanggu Yinxi*. Shanghai: Shanghai Educational Press.