A Preliminary Semantic Corpus-Based Study on the Classifier 架 (*jià*) and Its Implications for Teaching Chinese Classifiers

Jing Wu

University of Hawai'i at Mānoa.

Abstract

In this pilot study, diachronic semantic analysis is employed to probe the origin and semantic evolution of the classifier 架 (*jià*). The study has three objectives. Firstly, it intends to probe the emergence and development of the Chinese classifier 架 (*jià*). Secondly, it seeks to attest to the perspective of the fundamental role of human cognition and perception in the classifier language system, as indicated by Tai and Wang (1990). Finally, it suggests pragmatic classifiers teaching approaches in alignment with cognitive linguistic perceptions. The preliminary analysis of this study signifies that the classifier 架 (*jià*) is not an arbitrary linguistic device. Instead, its utilization throughout history reflects human categorization based on the perceptual property of the supporting framework of the referents. To enhance the

efficiency of teaching Chinese classifiers and provide learners with a more natural and comprehensive acquisition mode, future studies on classifier acquisition are expected to align with the conceptual structure of the classifiers' domains and the cognitive linguistic approach.

Keywords: Chinese classifier; Etymological origins; Semantic description; Cognitive linguistics

Introduction

A multitude of unconnected and geographically dispersed languages worldwide manifest enormous similarities in using a nominal classification system. According to Tai (1994), measure words can be found in every language, including English. From a cognitive perspective, some languages, such as Chinese and Thai, have classifiers that are employed to sort an object attributed to its prominent perceptual properties (Allan, 1977). Thereby, Chinese, Thai, and several other languages are designated as Classifier Languages (Chierchia, 1998; Tai, 1994). Over recent decades, classifiers have garnered substantial attention in a body of linguistic research and studies.

It is indisputable that Chinese is a language exceedingly using classifiers. For instance, 兩個人 (*liǎng ge rén*, two people) is rendered ungrammatical without the classifier 個 (*ge*). Allan (1977) delineated a classifier as an independent morpheme that "denotes some salient perceived or imputed characteristic of the entity to which an associated noun refers

(or may refer)" (p. 285). Elaborating on this concept, Li and Thompson (1981) categorized a classifier as a requisite adjunct to a numeral, demonstrative, or certain quantifier preceding a noun. Zhang (2007) further underscored the obligatory nature of classifiers in Chinese demonstrative expressions and other classifier languages. Notably, Allan (1977) observed that classifiers in these languages often employ similar criteria for categorization, such as material, shape, consistency, and size. This underlines a complex pattern where nouns are meticulously classified by classifiers, a trait especially notable in Chinese. Nevertheless, Tai and Wang (1990) denoted that it is still nebulous "whether they reflect conceptual structures or are merely arbitrary forms without a conceptual basis" (p. 35).

Related Studies Review

In recent decades, the classifier has been reckoned as a vast realm in Chinese linguistics. Scholars have delved into various aspects of classifiers, encompassing semantics (Jiang, 2017; Tai & Chao, 1994; Tai & Wang, 1990; Yau, 1988),

idiosyncrasies (Lakoff, 1986; Liu et al., 2020), discourse pragmatics (Li, 2001a, 2001b; Pu, 2008), and grammaticalization (Kuo, 2020; Xing, 2012), among others. Despite these efforts, there remains a paucity of systematic studies on the Chinese classifier system from a cognitive perspective. Pioneering work by Tai (1994) on this front presented the first cognitive-based systematic analysis of classifier systems in various Chinese dialects. The study's findings elucidated that Chinese classifier systems are intimately linked to conceptual structures and human categorization processes. In light of the study, Tai (1994) posited that "the Chinese classifier systems are cognitively and semantically motivated and *not* arbitrary" (p.13).

In line with the Cognitive Linguistic Approach (CL approach) to Chinese classifier acquisition, Zhang and Jiang (2016) conducted a comparative study between a cognitive group and a traditional group among advanced-level Chinese language learners. They emphasized that individual Chinese

classifiers have a semantic relation with associated nouns and that the functions of classifiers are tied to a central sense. Their research findings suggested that the CL approach, through the elucidation of polysemy networks and underlying motivations, can facilitate the accelerated acquisition of Chinese classifiers.

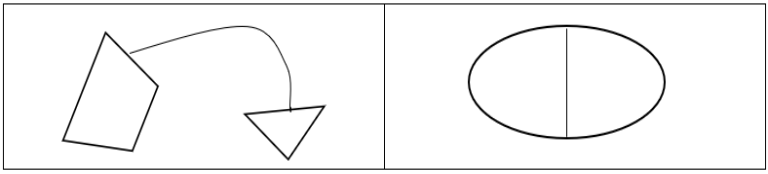
Furthermore, an embodied account of syntax, semantics, pragmatics, and value is considered essential for a comprehensive understanding of human cognition and language, as proposed by Johnson and Lakoff (2002). The embodiment perspective of language comprehension has been analyzed and discussed by several researchers (Barsalou, 1999; Casasanto & Boroditsky, 2008; Kompa, 2019; Zwaan, 2014). Johnson (1987) posited that embodied experiences lead to the formation of image schemas within our conceptual system. These schemas, initially introduced by Talmy (1983) and further explored by Johnson (1987), Lakoff (1987), and others, represent recurring dynamic patterns that shape our perceptual interactions and motor programs. Jiang

(2017) advocated for the application of this image schema framework to identify cognitive schemata for Chinese classifiers, rooted in the physical experiences of Chinese speakers, thereby elucidating the conceptualization and categorization processes inherent to Chinese classifiers.

Despite the potential of the image-schema approach in linguistic education, its application, particularly in the instruction of Chinese classifiers, remains underexplored. Wang (2011) conducted a corpus analysis of noun phrases (NPs) collocating with the classifiers 雙 (*shuāng*) and 對 (*duì*), deducing that 對 (*duì*) invokes a "One-Pair schema," where the features of its collocating NPs align with the concepts of "[t]wo parts forming a whole" and emphasizing "cooperation and combination" (p. 246), as demonstrated in Figure 1. Conversely, 雙 (*shuāng*) is associated with a "Two-Halves schema," reflecting attributes of "[a] whole divided into two parts" and highlighting "confrontation and division"(p. 246), as depicted in Figure 2.

Figure 1. Wang (2011) One-Pair Schema

Figure 2. Wang (2011) Two-Halves Schema



(Note: Adapted from "Study on dual classifiers 'shuang' and 'dui' in Chinese by image schema," by X.-Y. Wang, 2011, *Proceedings of the 16th Conference of Pan-Pacific Association of Applied Linguistics*, p. 246.)

In a recent study, Zhou (2022) conducted an evaluation comparing traditional classifier teaching methods, such as rote memorization, with a cognitive approach. He concluded that the cognitive strategy, being "less time-consuming and more efficient over a long period" (p. 18), significantly enhances the acquisition of Chinese classifiers. Zhou further observed that learners adept in utilizing image schemas showed improved performance, suggesting that the image-schema-based cognitive approach effectively facilitates the learning process.

Image schemas stem from our sensory and perceptual experiences as we navigate and interact within the world. It is important to note that a single object can be perceived and understood from multiple perspectives. Rovira (2004) emphasized that, from a cognitive perspective, a particular condition can be conceptualized by the mind using various parameters, as illustrated in Figure 3.

Figure 3. Images of "一尾鱼 (Yī wěi yú)" and "一 條鱼 (Yī tiáo yú)"

一尾鱼(Yī wěi yú) "a [tail] fish"	一 條鱼(Yī tiáo yú) "a [slim] fish"

In linguistic categorization, the classifier 條 (*tiáo*) is applied when a fish is perceived holistically, whereas 尾 (*wěi*) is used when focusing on a part of the fish. Lakoff (1987) identified three structural elements—"a whole, parts, and a configuration"(p. 273)—as key components of the part-whole schema. Stadler (2020) further elaborated that this image schema is formed through the ability to manipulate and be

cognizant of our body parts, coupled with the empirical perception of basic-level objects.

Current Study

This preliminary study is dedicated to investigating the following research questions by detailing the origin and development of 架 (*jià*):

a) What is the historical trajectory of the emergence and development of the Chinese classifier架 (*jià*)?

b) Which pragmatic teaching methods, in line with cognitive linguistic theories, can be effectively employed for classifiers?

c) How can empirical evidence be presented to support the assertion by Tai and Wang (1990) that human cognition and perception are integral to the classifier language system?

The data for this study were primarily sourced from three key corpora: the Beijing Language and Culture University (BLCU) Corpus Center, hereafter referred to as "BCC;" the Academia Sinica Balanced Corpus of Modern Chinese, henceforth

denoted as the "Sinica Corpus;" and the Corpus of Center for Chinese Linguistics Peking University, subsequently abbreviated as "CCL."

In Chinese linguistics, it is estimated that there are hundreds of classifiers, with the majority having traceable historical origins. Each classifier is characterized by its distinct semantic network. Jiang (2017) emphasized the importance of understanding the relationship between nouns and their assigned classifiers, highlighting that this relationship should encapsulate both the synchronic semantic network and the diachronic semantic evolution of the classifier. Consequently, a combined approach of synchronic semantic analysis and diachronic developmental examination is advocated, offering a pathway to more comprehensive and substantiated insights, as suggested by Jiang (2017).

The selection of 架 (*jia*) as the focal point of this pilot study is driven by two primary motivations. Firstly, architecture serves as a significant symbol of Chinese civilization, with Chinese characters often finding their origins

in concepts related to buildings and structures (Jiang, 2017). Characters such as 屋 (*wū*) denoting "house, room," 間 (*jiān*) signifying "room, interval," 座 (*zuò*) representing "seat, base, stand, platform," 棟 (*dòng*) meaning "ridgepole, block," and架 (*jià*) conveying the idea of "frame, rack," among others, encapsulate the cultural practices and worldview of the Chinese people. Secondly, 架 (*jià*) stands out as an intriguing classifier due to its overlap with other typical classifiers like 臺 (*tái*) for a stand, support, or a table-like object, and 座 (*zuò*) for a large or fixed stand, base, or pedestal. In contrast to more general classifiers such as 個 (*ge*) and隻 (*zhī*), 架 (*jià*) possesses an intricate and extensive domain that defies a simple definition as a classifier solely for objects with a supporting structure. Through a comprehensive corpus study, our objective is to delve into the emergence, development, and intricacies of 架 (*jià*) as a classifier. Ultimately, the goal is to lend support to the notion that human cognition and perception play a fundamental role in the classifier language system, as suggested by Tai and Wang (1990).

As underscored by Jiang (2017), the etymological significance of Chinese characters holds a pivotal place in the investigation of Chinese classifiers. This approach affords us a holistic view, encompassing both diachronic and synchronic perspectives on classifier categories. It serves as the foundation for generating well-grounded explanations for the motivation and interconnection among the polysemic senses of classifiers (Jiang, 2017). Therefore, the present study adopts an etymological approach in an endeavor to capture the semantic evolution of the classifier 架 (*jià*).

Origin and Development of 架 (*jià*)

Etymological Origins of the Character 架 (*jià*)

The character 架 (*jià*), a later-formed phono-semantic compound, comprises the semantic element木 (*mù*, meaning "wood") and the phonetic element 加 (*jiā*, meaning "to add"). It is noteworthy that架 (*jià*) does not appear in the 說文 (*Shuō wén*), the first dictionary reflecting a systematic study of Chinese script, which was completed around the Eastern Han Dynasty in the 2nd century C.E. Instead, its variant 枷 (*jià*) is

included. The 康熙字典 (*Kāngxī zìdiǎn*, Kangxi Dictionary), a prominent standard Chinese dictionary during the 18th and 19th centuries, provides an elucidation of the character as follows: "杙也，所以舉物" (*Yì yě, suǒyǐ jǔ wù*, which can be interpreted as "little wooden stakes, used to lift or hold things"). Consequently, 架 (*jià*) originally served as a noun, denoting "a frame," "a shelf," "a rack," or "a stand" employed for supporting or holding up objects, as illustrated in (1) below:

(1) 凡以竿爲衣架者，名箷。《爾雅·釋器疏》
(dated back to 206 B.C.E., sourced from BCC)

Fán yǐ gān wèi yījià zhě, míng yí. 《*Ěr yǎ·shì qì shū*》

"Any use pole as a clothes hanger, name *yi*."

[Anything used as a pole to be a clothes hanger is called *yi*.]

Subsequently, 架 (*jià*) acquired an associated verbal meaning of "to prop up things with a frame, shelf, rack, or stand." Over time, it underwent semantic expansion, encompassing more specific verbal meanings such as "to

build" and "to construct," and eventually evolving into more abstract verbal meanings like "to support" and "to help." The emergence of the verbal function of 架 (*jià*) can be traced back to the Pre-Qin period (3rd century B.C.E.). As Dong (2017) revealed, both its nominal and verbal meanings were concurrently utilized during the Han, Three Kingdoms, Jin, and Northern and Southern Dynasties (206 B.C.E.–589 C.E.), as demonstrated in examples (2) and (3) below:

(2) 鵲作巢，冬至架之，至春乃成。《詩·周南·鄭箋》 *(dated back to 206 B.C.E.–220 C.E., sourced from BCC)*

Què zuò cháo, dōngzhì jià zhī, zhì chūn nǎi chéng. 《*Shī·zhōu nán·zhèng jiān*》

"Magpies make nests, winter solstice builds it, till spring then complete."

[The magpie builds its nest, starting at the winter solstice, and completes it by spring.]

(3) 蔓延，性緣不能自舉，作架以承之。《齊民要術》 *(dated back between 265–420 C.E., sourced from BCC)*

Màn yán, xìng yuán bùnéng zì jǔ, zuò jià yǐ chéng zhī. 《Qí mín yào shù》

"Spread, nature reason not can self-lift, make rack to hold it."

[(Grape's) vine slowly expands, (because of its) nature that it cannot lift itself, constructs a frame to hold/support it.]

Following this, the character 架 (*jià*) underwent a transformation into a classifier. Its role as a classifier saw gradual development during the Three Kingdoms, Jin, and Northern and Southern Dynasties (220–589 C.E.), as illustrated in example (4) below:

(4) 既立宅宇，而所起五間六架。《宋書·五行志》 *(dated back between 420-479 C.E., sourced from BCC)*

Jì lì zhái yǔ, ér suǒ qǐ wǔ jiān liù jià. 《Sòng shū·wǔ xíng zhì》

"Just construct residence place, then be up five rooms six frames/structures."

[Once the residence place was constructed, there were five rooms and six rafters erected.]

Diachronic Development of the Classifier 架 (*jià*)

As aforementioned, the classifier function of 架 (*jià*) evolved and developed significantly during the Han, Three Kingdoms, Jin, and Northern and Southern Dynasties. From the Tang Dynasties (618–907 C.E.) onwards, its use as a classifier became more widespread, especially for referents requiring support or structural elements, as well as for items like bells and chimes that are placed or hung on racks. This is illustrated in examples (5) and (6) below:

(5) 一架長條萬朵春，嫩紅深綠小窠匀。《唐詩·薔薇》 *(dated back between 618–907 C.E., sourced from BCC)*

Yī jià cháng tiáo wàn duǒ chūn, nèn hóng shēn lǜ xiǎo kē yún. 《Tángshī·qiángwēi》

"One long strip of ten thousand spring, delicate red, deep green, small, symmetrical buds."

[One long and narrow trellis laden with ten thousand spring blossoms, where delicate red and rich green are evenly spread among the small clusters.]

(6) 陳鍾十二架，當十二辰之位。《唐文拾遗续拾》 *(dated back between 618–907 C.E., sourced from BCC)*

Chén zhōng shí'èr jià, dāng shí'èr chén zhī wèi. 《Táng wén shíyí xù shí》

"Display twelve bell chimes, represent twelve-time position."

[Arrange twelve sets of bells in alignment with the twelve Earthly Branches.]

Prior to the Tang Dynasties, the classifier架 (*jià*) was typically used for referents of larger size or heavier weight. However, in example (5), 架 (*jià*) describes a lightweight flower branch, indicating a new trend in its usage — the generalization of 架 (*jià*) as a classifier.

Thence, during the Song and Yuan Dynasties (960–1368 C.E.), the classifier 架 (*jià*) was experiencing a continuation of the process of generalization. As a result, even though the primary semantic function of the classifier 架 (*jià*) remained unaltered, its utilization was generalized to

more intangible referents. Examples (7) and (8) are provided in the following:

(7) 陰陰一架紺雲涼。 《全宋词·鷓鴣天》*(dated back between 960–1279 C.E., sourced from BCC)*

Yīnyīn yī jià gàn yún liáng. 《Quán sòngcí·zhègū tiān》

"Gloomy one patch of dark blue cloud coolness."

[A somber array of dark blue clouds ushers in a refreshing coolness.]

(8) 碧羅亂縈小帶，翠虬寒、一架清香。 《全宋詞·聲聲慢》*(dated back between 960–1279 C.E., sourced from BCC)*

Bì luó luàn yíng xiǎo dài, cuì qiú hán, yī jià qīngxiāng. 《Quán sòngcí·shēng shēng màn》

"Emerald silk entwines the slender waist, jade dragon cold, a rack of pure fragrance."

[Emerald silk gracefully wraps around the slender waist, resembling a cold jade dragon, exuding a delicate fragrance.]

In examples (7) and (8), 架 (*jià*) is metaphorically employed through rhetorical expressions to quantify "cloud" and

"fragrance" respectively. Although these objects are visible, they are intangible and don't require literal support from a structure. When compared to the expressions "一缕清香 (*Yī lǚ qīngxiāng*, a wisp of fragrance)" and "一片雲 (*Yī piàn yún*, a patch of clouds)," the usage of "一架清香 (*Yī jià qīngxiāng*, a *frame* of fragrance)" and "一架雲 (*Yī jià yún*, a *frame* of clouds)" embodies a unique aura, imparting a sense of texture, specificity, tangibility, solidity, and three-dimensionality to the intangible objects and abstract concepts of "fragrance" and "clouds." This type of expression offers readers a vivid, three-dimensional visual impact. According to Lakoff (1987), metaphor implies a cross-domain mapping in the conceptual system. Thus, in this context, based on one well-established existing conceptual domain, "we use our embodied experiences to form more complex conceptual structures in order to understand other things" (Jiang, 2017, p. 19). Moreover, Jiang (2017) suggested that such metaphorical extensions in Chinese classifiers

enrich the language with intricate networks of interconnected categories expressed through single words.

Soon after, per Dong (2017), the Ming and Qing Dynasties (1368–1912 C.E.) marked the peak of the usage of several classifies, including 架 (*jià*). During this period, the number of referents for these classifiers significantly exceeded those of any previous dynasty. Examples (9) and (10) are displayed as follows:

(9) 正中間設一架紙爐。 《西遊記》*(dated back between 1368–1644 C.E., sourced from BCC)*

Zhèng zhòng jiān shè yī jià zhǐ lú. 《Xī yóu jì》

"Right middle set up one frame/rack paper furnace."

[In the very center, a paper furnace is arranged.]

(10) 兩架食盒不算輕。《劉墉傳奇》 *(dated back between 1644–1912 C.E., sourced from BCC)*

Liǎng jià shí hé bù suàn qīng. 《Liúyōng chuánqí》

"Two rack food boxes not count light."

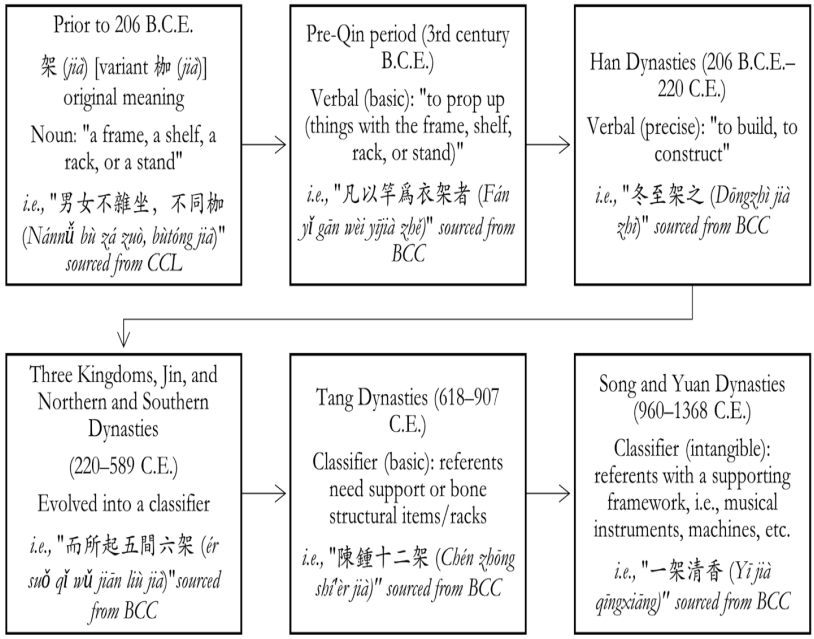
[Two racks of food containers/boxes are not considered light.]

Ultimately, as a classifier, 架 (*jià*) was fully developed in the Ming and Qing Dynasties. It was applied to a diverse array of referents with a supporting structure, including plants, musical instruments, machines, equipment, tools, architectural elements, furniture, appliances, and various household items.

Diachronic Semantic Evolution Summary

Jiang (2017) noted that "each individual extension of the uses of a classifier has its own historical cognitive basis that can result in a very complicated domain" (p. 185). Thereby, a diachronic semantic analysis, as summarized in Figure 4, is employed to probe the origin and semantic evolution of 架 (*jià*).

Figure 4. Semantic Evolution Summary Chart of the Chinese Classifier 架 (jià)



Originally a noun for "a frame," "a shelf," "a rack," or "a stand," 架 (*jià*) evolved to include verbs like "to prop up" and then more specific actions such as "to build" and "to construct." Its use broadened to abstract verbs like "to support" and "to help." During the Han to Southern Dynasties, 架 (*jià*) developed into a classifier with preliminary growth in its function. From the Tang Dynasty, its use as a classifier expanded, typically for referents requiring structural

support, and extended further in the Song and Yuan Dynasties to more intangible referents. The Ming and Qing Dynasties marked its full development and the broadest range of referents.

Implications for Teaching Chinese Classifiers

Chinese classifiers have been scrutinized from cognitive perspectives in a profusion of studies (Gao & Malt, 2009; Jiang, 2017; Pu, 2008; Tio, 2020; Zhang & Jiang, 2016). However, there has been relatively little attention given to establishing a pragmatic connection between cognitive linguistic theories and Chinese classifier teaching approaches. Therefore, this preliminary study aims to illuminate pragmatic approaches to teaching classifiers that align with cognitive linguistic perceptions.

Drawing from my personal experience of learning classifiers during my primary and secondary education, I found that most teachers instructed me to memorize the "classifier + noun" pattern, often emphasizing that it was a "固定搭配 (*Gùdìng dāpèi*, fixed combination or collocation)"

without further elaboration. When I began teaching Mandarin Chinese at the post-secondary level, I observed that the meanings and usage of Chinese classifiers were predominantly introduced through a set of rules and several prototypical examples in most novice to intermediate-level Chinese textbooks and learning materials. For instance, 件 *(jiàn)* was associated with "shirts, dresses, jackets, coats," and 篇 (*piān*) with "essays, articles," among others. Consequently, learners often faced confusion when encountering sentences like "我正在处理這件事 (*Wǒ zhèngzài chǔlǐ zhè jiàn shì*, I'm working on this matter)" in higher-level classes, as 事 *(shì)* refers to "thing, matter, issue" with no direct relation to any prototypical examples provided in novice-level textbooks. These observations underscore the necessity for a more comprehensive approach to teaching Chinese classifiers. Language educators should consider integrating both memorization and a deeper understanding of classifier usage to better equip students for advanced language proficiency. Striking a balance between presenting rules and prototypical

examples can enhance students' ability to navigate real-life language contexts, facilitating a smoother transition to higher-level classes.

It is evident that the absence of comprehensive and efficient explanations regarding the meanings and usages of Chinese classifiers poses a significant challenge for most learners (Gao, 2014; Liang, 2009; Zhang & Jiang, 2016; Zhou, 2022), especially when confronted with the multitude of intricate collocations associated with Chinese classifiers. Given that each individual extension of the Chinese classifier system has its own historical and cognitive basis, Jiang (2017) has proposed that the acquisition of classifiers should be approached empirically. Furthermore, he emphasizes that "it is impossible for rules based solely on prototypical examples to be extended to all class members" (p. 442).

Teaching Chinese Classifiers from a Cognitive Perspective

Semantic Descriptions of Chinese Classifiers through the Cognitive Linguistic Approach

Ungerer and Schmid (1996) defined cognitive linguistics as "an approach to language that is based on our experience of the world and the way we perceive and conceptualize it" (p. 36). This perspective suggests that language development is intrinsically linked to cognitive processes. As noted by Lakoff (1987), our concepts are internally structured and interconnected, enabling us "to reason, to comprehend, to acquire knowledge, and to communicate" (p. 267). He further emphasized that the theory of cognitive models aligns closely with conceptual structures. Similarly, Jiang (2017) contended that cognitive linguistics hinges on the premise that language conceptualization stems from "our experiences, the external world, and our interactions with it" (p. 13). Focusing on Chinese classifiers, Jiang's research demonstrated that these classifiers encapsulate the Chinese perception of individual human embodiment, the natural world, constructed

environments, and social contexts. He underscored that the extensions of Chinese classifiers, which are rooted in underlying motivations, are "not merely a random assortment of distinct senses" (Jiang, 2017, p. 185). His cognitive analysis emphasized that semantic descriptions of Chinese classifiers, informed by cognitive linguistics, provide not only a heuristic and systematic framework but also a foundational principle for developing instructional materials and methodologies for these classifiers. Consequently, Jiang (2017) proposed a three-tiered approach to introducing a classifier:

> (a) revealing the central sense, the etymological meaning of the classifier; (b) introducing each of the polysemic senses with a comprehensive list of nouns classified by the classifier; and (c) disclosing the motivations and extension tendencies behind the classifier category. (p. 186)

Taking 架 (*jià*) as an instance, its etymological meaning encompasses concepts such as "a frame," "a shelf," "a rack," or "a stand," which are all structures supporting

objects. Thus, its primary sense pertains to objects with supporting structures. However, as Jiang (2017) suggested, understanding the domain of 架 (*jià*) and its experiential-based conventions requires a nuanced and individualized approach, with each pertinent example distinctly presented, as shown in Table 1. Analysis of the Sinica Corpus yielded 136 valid instances.

Table 1. Summary List of Nouns Classified by 架 (jià)

Associated Nouns	Token Frequency	Percentage (%)	Examples from Sinica Corpus
aircraft	112	81.75	六架飛機 (Liù jià fēijī) "six planes"
piano	8	5.84	三百架鋼琴 (Sān bǎi jià gāngqín) "three hundred pianos"
telescope	5	3.65	一架望遠鏡 (Yī jià wàngyuǎnjìng) "a telescope"
phone	2	1.46	幾架卡式公用電話 (Jǐ jià kǎ shì gōngyòng diànhuà) "several public payphones"
machine	2	1.46	一架隧道開掘機 (Yī jià suìdào kāijué jī) "a tunnel boring machine"
swing	1	0.73	幾架磨秋 (Jǐ jià móqiū) "several swings"

camera	1	0.73	一架照像機 (Yī jià zhàoxiàngjī) "a camera"
ladder	1	0.73	一架梯子 (Yī jià tīzi) "a ladder"
projector	1	0.73	一架放影機 (Yī jià fàngyǐngjī) "a projector"
bike	1	0.73	一架破風車 (Yī jià pòfēngchē) "a cycling road bike"
trident	1	0.73	一架三叉戟 (Yī jià sānchājǐ) "a trident"
armillary sphere	1	0.73	銅渾儀四架 (Tónghúnyí sì jià) "four bronze armillary spheres"

It is important to recognize that the majority of nouns associated with the classifier 架 (*jià*) possess a defining characteristic: they are three-dimensional, concrete objects supported by anchored, solid, or stable frameworks or bases. For example, most aircraft are fitted with sturdy tricycle landing gears, exemplifying this trait. Similarly, public payphones are often mounted on fixed racks or shelves. However, for objects such as telescopes, cameras, and projectors, the classifier 架 (*jià*) does not denote the shape of

these items; rather, it signifies the tripod–the three-legged stand underpinning the device.

Interestingly, 架 (*jià*) is also applied as a classifier for two-wheeled road bikes, a category typically associated with the classifier 輛 (*liàng*). This usage introduces a nuanced perceptual distinction. When 架 (*jià*) is employed, it often conjures an image of a bicycle equipped with a kickstand in the minds of most native Chinese speakers. In contrast, the classification of a bicycle under 輛 (*liàng*) does not inherently suggest this feature. As Zhu (2021) articulated, the acquisition of Chinese classifiers activates the prominent dimensions of an object, leading to variances in identification, recognition, and categorization. These observations suggest that 架 (*jià*) is semantically and cognitively grounded, asserting its role as more than a mere linguistic tool for noun classification.

When introducing the classifier 架 (*jià*) to learners, particularly those at the beginner level, it is crucial to provide them with its central meaning along with specific examples. Analysis of the current database reveals that the "aircraft"

category, encompassing planes, gliders, UFOs, and space shuttles, registers the highest token frequency (112) and percentage (81.75%). Consequently, in teaching Chinese as a second or foreign language, emphasis should be placed on these high-frequency associated nouns, using them as illustrative examples.

Jiang (2017) highlighted that the comprehension and acquisition of Chinese classifiers are facilitated through cognitive mechanisms, such as image-schema transformation, and metaphorical or metonymic extensions, among others. Therefore, for more advanced learners, especially when they encounter conventional or contemporary metaphors that suggest humor, irony, repartee, sarcasm, satire, or wit, the appropriateness of classifiers is anticipated to depend significantly on the context and their underlying implications. As Lakoff and Johnson (1999) asserted, conceptualization may necessitate greater cognitive effort when deciphering meanings that are less concrete and more abstract. Echoing this viewpoint, Wang (2016) argued that advanced learners should not only focus on accuracy but also on the expressive use of these classifiers, with an emphasis on their rhetorical

functions in teaching. To illustrate this, consider examples (11) and (12) provided below:

(11) 駕一葉之扁舟，舉匏樽以相屬。 《前赤壁賦》 *(dated back to late 4th century to early 5th century, sourced from BCC)*

Jià yī yè zhī piānzhōu, jǔ páo zūn yǐ xiāng zhǔ. 《Qián chìbì fù》

"Steer a small leaf-like flat boat, raise a wine gourd bottle to pledge."

[Steering a slender boat as thin as a leaf, lifting a gourd bottle to make a toast.]

(12) 一串串打擊接踵而來。 《作家文摘(1994)》 *(dated back to 1994, sourced from CCL)*

Yī chuàn chuàn dǎjī jiēzhǒng ér lái. 《Zuòjiā wénzhāi (1994)》

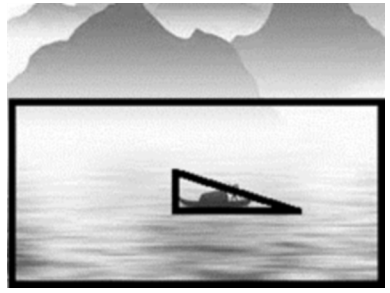
"A series of blows one after another and come."

[A succession of setbacks comes one after another.]

In its original sense, 葉 (*yè*) denotes a "leaf." However, in example (11), it portrays a scenario featuring a small, thin, and lightweight boat adrift on the expansive open water. This

depiction metaphorically likens the diminutive boat to a leaf, accentuating its relative minuteness against the vastness of the body of water. This interpretation aligns with the concept of image schema transformation. It draws upon the slender and delicate form of a leaf to create a vivid mental image, as illustrated in Figure 5. This metaphorical usage not only exemplifies the versatility of language but also demonstrates the cognitive process of mapping physical characteristics onto abstract concepts, thereby enhancing the depth of comprehension and the richness of linguistic expression.

Figure 5. Image of a Small, Thin, and Light Boat Floating on Open Water



In example (12), the term 串 (*chuàn*) is conventionally used to describe a string, chain, or series of objects. The phrase 打擊 (*dǎjī*) translates literally to "strike, attack, hit, or

blow." This particular collocation conjures a profound sense of bewilderment—questioning how an individual's life could be besieged by a relentless succession of calamities. Such metaphorical and metonymical extensions of Chinese classifiers are not merely linguistic embellishments; they play a pivotal role in enhancing emotional resonance and adding literary depth. Furthermore, these linguistic devices are instrumental in vividly depicting objects and scenarios in a manner that is both picturesque and theatrical, thereby leaving a lasting impression on the audience. This nuanced use of language underscores the rich expressive potential inherent in the application of Chinese classifiers, highlighting their importance in both communication and artistic expression.

Conclusion and Discussion

To address the research questions posed, it is noteworthy that the diachronic semantic evolution and development pattern of the Chinese classifier 架 (*jià*) not only uncovers the intrinsic semantic network of Chinese classifiers but also

mirrors the cognitive and perceptual progression of the Chinese populace. These conceptual frameworks and cognitive perceptions are deeply entrenched in ancient civilization, cultural practices, and, fundamentally, in the everyday lives of the people. This preliminary study elucidates that the classifier 架 (*jià*) is more than a mere linguistic tool; its historical application reflects a human categorization process based on the perceptual attributes of the supporting frameworks of its referents.

Furthermore, the pedagogical methodologies for teaching Chinese classifiers, including the cognitive approach and the utilization of image schemas, are grounded in an understanding of the cognitive and semantic motivations that underpin the Chinese classifier system. These methods underscore the semantic linkage and core sense characterizing the roles of individual classifiers and their associations with relevant nouns. Consequently, several pedagogical implications for the acquisition of Chinese classifiers in teaching Chinese as a second or foreign language arise,

including: a) elucidating the etymological meaning and conceptual framework of a classifier's domain, accompanied by tangible examples, to aid learners in forming a comprehensive and systematic array of nouns related to the classifier; b) equipping learners with insights into the extension mechanisms and experience-based applications of the classifier, thereby fostering a deeper command of its usage; and c) augmenting the acquisition and interpretation of Chinese classifiers through cognitive linguistic strategies, such as the image-schema cognitive approach, metaphorical or metonymic extensions, conventional imagery, and functional associations. It is expected that future research in classifier acquisition will align with the conceptual structures of the classifiers' domains and incorporate cognitive linguistic methodologies. These developments promise to enhance the efficacy of teaching Chinese classifiers and offer language learners a more intuitive, thorough, and efficient learning process.

Lastly, the cognitive approach and the employment of image schemas are not exclusive to the Chinese language; they can be adapted to other languages with analogous semantic structures, like Thai. Languages that utilize classifiers, similar to Chinese, often depend on the categorization and conceptualization of objects based on shared characteristics and cognitive patterns. The cognitive approach highlights the mental processes and conceptual frameworks involved in classifier systems, which are applicable to other languages with akin systems (Liang, 2008; Tai & Wang, 1990; Zhang & Jiang, 2016). Additionally, the application of image schemas, which are recurrent dynamic patterns emanating from sensory and perceptual experiences, is also evident in languages such as Japanese, German, and French. For instance, Wittfeld's (2017) examination of the semantic structure of a specific group of Japanese verbs within the Cognitive Linguistics framework exemplifies this. This study explored the connections between simplex and compound verbs in Japanese through image schemas, underscoring the

pivotal roles of metaphor, metonymy, and image schema transformation in meaning extension. Furthermore, Wachowiak and Gromann's (2022) research expanded this understanding by investigating the application of image schemas in natural language processing across multiple languages, including German and French. Image schemas provide a crucial cognitive framework for understanding and categorizing objects and their interactions (Johnson, 1987; Lakoff & Johnson, 1980). These schemas are not confined to any single language but are rooted in universal human cognitive processes and embodied experiences. Therefore, instructional approaches that draw on cognitive linguistic principles, such as the cognitive approach and the use of image schemas, are generalizable to other classifier languages with similar semantic structures.

By delving into the cognitive motivations and conceptual frameworks underpinning classifier systems in various languages, educators can enhance the learning experience for students studying those languages. It is

pertinent to acknowledge that while these instructional methods offer valuable insights and tactics for grasping classifier systems in diverse languages, language-specific idiosyncrasies and nuances must be duly considered. Tailoring these methods to individual languages necessitates a thorough analysis and understanding of each language's unique classifier system characteristics.

References

Allan, K. (1977). Classifiers. *Language*, *53* (2), 285–311. https://doi.org.eres.library.manoa.hawaii.edu/10.2307/413103

Barsalou. L. W. (1999). Perceptual symbol systems. *The Behavioral and Brain Sciences*, *22*(4), 577–660. https://doi.org/10.1017/S0140525X99002149

Beijing Language and Culture University (BLCU) Corpus Center. Retrieved from http://bcc.blcu.edu.cn/zh/cid/5

Casasanto, D., & Boroditsky, L. (2008). Time in the mind: Using space to think about time. *Cognition*, *106*(2), 579–593. https://doi.org/10.1016/j.cognition.2007.03.0044

Chierchia, G. (1998). Reference to kinds across languages. *Natural Language Semantics*, *6*(4), 339–405.

Dong, F. Z. (2017). Liangci "jia" de chansheng ji yanbian. [The origin and diachronic evolution of the measure

word "Jià"]. *Journal of Daqing Normal University. 37*(2), 105–107. https://doi.org/10.13356/j.cnki.jdnu.2095-0063.2017.02.022

Gao, H. H. (2014). Database design of an online e-learning tool of Chinese classifiers. In Zock, Rapp, & Huang (Eds.), *Proceedings of the 4th Workshop on Cognitive Aspects of the Lexicon*, 126–137. Dublin, Ireland.

Gao, & Malt, B. C. (2009). Mental representation and cognitive consequences of Chinese individual classifiers. *Language and Cognitive Processes*, *24*(7-8), 1124–1179. https://doi.org/10.1080/01690960802018323

Jiang, S. (2017). *The semantics of Chinese classifiers and linguistic relativity*. Routledge. https://doi.org/10.4324/9781315265483

Johnson, M. (1987). *The body in the mind: The bodily basis of meaning, imagination, and reason*. University of Chicago Press.

Kompa. (2019). Language and embodiment–Or the cognitive benefits of abstract representations. *Mind & Language*, *36*(1), 27–47. https://doi.org/10.1111/mila.12266

Kuo, Y. H. (2020). Reinforcement by realignment in diachronic construction grammar: The case of classifier xiē in Mandarin Chinese. *Constructions and Frames*, *12*(2), 206–238. https://doi.org/10.1075/cf.00040.kuo

Lakoff, G. (1987). *Women, fire, and dangerous things: What categories reveal about the mind*. University of Chicago Press.

Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. University of Chicago Press.

Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: the embodied mind and its challenge to Western thought*. Basic Books.

Li, C. N., & Thompson, S. A. (1981). *Mandarin Chinese: A functional reference grammar*. University of California Press.

Li, W. D. (2000a). Numeral-classifiers as a grounding mechanism in Mandarin Chinese. *Journal of Chinese Linguistics*, *28*(2), 337–368. https://www.jstor.org/stable/23754092

Li, W. D. (2000b). The pragmatic function of numeral-classifiers in Mandarin Chinese. *Journal of Pragmatics*, *32*(8), 1113–1133. https://doi.org/10.1016/S0378-2166(99)00086-7

Liang, N. S. (2008). The acquisition of Chinese shape classifiers by L2 adult learners. In M. K. M. Chan & H. Kang (Eds.), *Proceedings of the 20th North American*

Conference on Chinese Linguistics (NACCL-20), *1*, 309–326. Columbus, Ohio: The Ohio State University.

Liu, S. J., et. al. (2019). On the idiosyncrasies of the Mandarin Chinese classifier system. *Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*, *1*, 4100–4106. https://doi.org/10.18653/v1/N19-1415

Pu, M.-M. (2008). Pragmatics of classifier use in Chinese discourse. *Stellenbosch Papers in Linguistics*, *38*(1), 139–163. https://doi.org/10.5774/38-0-26

Rovira, S. (2004, August 25–29). *The cognitive perspective in teaching Chinese measure words* [PowerPoint slides]. SlideShare. https://www.slideshare.net/srovira/the-cognitive-perspective-in-teaching-chinese-measure-words

Stadler, M. (2020). *The ontological nature of part-whole oscillations: An interdisciplinary determination*. Verlag der Österreichischen Akademie der Wissenschaften. https://doi.org/10.1553/0x003ba901

Talmy, L. (1983). How language structures space. In H.L. Pick & L.P. Acredolo (Eds.), *Spatial orientation*. (pp. 225–282). Springer. https://doi.org/10.1007/978-1-4615-9325-6_11

Tai, J. H.-Y. (1994). Chinese classifier systems and human categorization. In M. Chen & O. Tseng (Eds.), *In Honor of Professor William S-Y. Wang: Interdisciplinary Studies on Language and Language Change* (pp. 479–494). Pyramid.

Tai, J. H.-Y., & Chao, F. Y. (1994). A semantic study of the classifier Zhang. *Journal of the Chinese Language Teachers Association*, *29*(3), 67–78. http://search.proquest.com/docview/58298320/

Tai, J. H.-Y., & Wang, L. Q. (1990). A semantic study of the classifier Tiao. *Journal of the Chinese Language Teachers Association*, *25*(1), 35–56. http://search.proquest.com/docview/62976053/

Tio, Y. P. (2020). *The link between language experience and cognition: The learning of Chinese numeral classifiers and its impact on cognitive processing*. ProQuest Dissertations Publishing.

Ungerer, F., & Schmid, H.-J. (1996). *An introduction to cognitive linguistics*. Longman.

Wachowiak, L., & Gromann, D. (2022). Systematic analysis of image schemas in natural language through explainable multilingual neural language processing. *Proceedings of the 29th International Conference on Computational Linguistics,* 5571–5581. https://aclanthology.org/2022.coling-1.493

Wang, X.-Y. (2011). Study on dual classifiers "shuang" and "dui" in Chinese by image schema. *Proceedings of the*

16th Conference of Pan-Pacific Association of Applied Linguistics, 247–252.

Wittfeld, A. (2017). *Image schema verbs in Japanese: A cognitive linguistic analysis* [Doctoral dissertation, Universität Heidelberg]. http://www.ub.uni-heidelberg.de/archiv/23525

Xing, J. Z. Q. (2012). Semantic change in the grammaticalization of classifiers in Mandarin Chinese. In J. Z. Q. Xing (Ed.), *Newest Trends in the Study of Grammaticalization and Lexicalization in Chinese* (pp. 169–214). De Gruyter Mouton. https://doi.org/10.1515/9783110253009.169

Yau, S. C. (1988). A cognitive approach to the genesis of nominal classifiers as observed in archaic Chinese. *Journal of Chinese Linguistics*, *16*(2), 264–277. https://www.jstor.org/stable/23757860

Zhan, W. D., Guo, R., Chen, Y. R. (2003). The Center for Chinese Linguistics (CCL) of Peking University Corpus of Chinese Texts: 700 million Chinese Characters, the 11th Century B.C. – present. Retrieved from http://ccl.pku.edu.cn:8080/ccl_corpus

Zhang, H. (2007). Numeral classifiers in Mandarin Chinese. *Journal of East Asian Linguistics*, *16*(1), 43–59. https://doi.org/10.1007/s10831-006-9006-9

Zhang, L. L., & Jiang, S. (2016). A cognitive linguistics approach to Chinese classifier teaching: An experimental study. *Journal of Language Teaching and Research*, *7*(3), 467–475. https://doi.org/10.17507/jltr.0703.05

Zhou, A. Y. (2022). Applying cognitive linguistics to teaching Chinese classifiers: Evidence from teaching Chinese as a heritage language in Germany. *Language Teaching Research: LTR*, 1–28. https://doi.org/10.1177/13621688221098184

Zhu. (2021). An empirical study of the classifier effect in advanced L2 users of Chinese. *The International Journal of Bilingualism : Cross-Disciplinary, Cross-Linguistic Studies of Language Behavior*, *25*(1), 151–167. https://doi.org/10.1177/1367006920943301

Zwaan, R. A. (2014). Embodiment and language comprehension: Reframing the discussion. *Trends in Cognitive Sciences*, *18*(5), 229–234. https://doi.org/10.1016/j.tics.2014.02.008