

Numeral classifiers in Mandarin Chinese

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Abstract This article uses a multilevel approach to study the Chinese numeral classifiers. It argues that although shape categories constitute a major cognitive base for numeral classification, lexical taxonomy, linguistic convention, and stylistic creativity also play a role in determining the use of Chinese classifiers. It cautions that in general the relationship between noun and classifier is explicable from the semantic/cognitive stance, but the relationship is not always transparent and consistent. At times the choice of a classifier can be entirely arbitrary and subject to linguistic innovation.

Keywords Chinese · Classifiers · Measure words · Noun classes · Cognitive categorization · Lexical taxonomies

1 Introduction

In his seminal work on classifiers, Allen defines a numeral classifier as an independent morpheme which “denotes some salient perceived or imputed characteristic of the entity to which the associated noun refers” (Allen, 1977, p. 285). A numeral classifier is so named because it is syntactically obligatory when the counting of the head noun is to be carried out. In Chinese and in other numeral classifier languages as well, numeral classifiers are also obligatory in demonstrative expressions. As defined by Li and Thompson, classifiers “must occur with a number and/or a demonstrative, or certain quantifiers before a noun” (Li & Thompson, 1981, p. 104). For example, in the Chinese expression *liang tiao yu* (two CL-tiao fish, ‘two fish’), the classifier *tiao*, which has a semantic indication for “long and rope-like” objects, must be present between the number (*two*) and the head noun (*fish*). Since *tiao* also occurs with other nouns in a quantifying

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structure, we can assume that these nouns belong to one class by sharing similar semantic features denoted by the classifier *tiao*:

- (1)a. yi *tiao* she (one CL-*tiao* snake, 'one snake')
- b. yi *tiao* tui (one CL-*tiao* leg, 'a leg')
- c. yi *tiao* kuzi (one CL-*tiao* pants, 'a pair of pants')
- d. yi *tiao* he (one CL-*tiao* river, 'a river')
- e. yi *tiao* bandeng (one CL-*tiao* bench, 'a bench')

In other words, in their ability to put objects into classes, classifiers demonstrate an instance of overt linguistic categorization of the world. According to Adams and Conklin, numeral classification is "a wide-spread phenomenon in Asia and America, and perhaps elsewhere" (Adams & Conklin, 1973, p. 1). Because numeral classifiers in many diverse languages seem to employ roughly the same set of parameters for categorization, most notably, animacy, shape, function, consistence, and size (Adams & Conklin, 1973; Allen, 1977; Friedrich, 1970), research on classifiers is primarily devoted to the cognitive processes underlining linguistic classification with an intention to understand "the general phenomenon of human categorization" (Craig, 1986, p. 2; see also Rosch, Merris, Gray, Johnson, & Boyes-Braem, 1976; Lakoff, 1987).

Chinese is a language extremely rich in the use of classifiers. The number of classifiers that appear in *Hanyu Liangci Cidian (A Dictionary of Chinese Classifiers)* (1988) reach 902.¹ In the existing studies on Chinese numeral classifiers, the focus has been predominantly on cognitive approaches with a primary concern to understand "Chinese classifier system in terms of human categorization" (Tai, 1994, p. 483; see also Lee, 1988; Tai & Wang, 1990; Tai & Chao, 1994; T'sou, 1976). The majority of the data for analysis so far centers on a few shape classifiers or some other individual classifiers (Loke, 1994, 1996; Shi, 1996; Tai & Wang, 1990; Tai & Chao, 1994).² The present article intends to expand the study on Chinese classifiers to include discussion of various features and functions of the Chinese classifier system.

In general, we can distinguish two sets of Chinese numeral classifiers: count-noun classifiers and mass-noun classifiers.³ The count-noun classifiers are usually used for noun entities that can occur naturally in discrete, countable units while mass-noun classifiers can be used both to quantify those nouns that do not naturally occur in discrete units and as measuring units for concrete nouns (Cheng & Sybesma, 1998; Chien, Lust, & Chiang, 2003; Loke, 1991; Tai, 1992, 1994; Tai & Wang, 1990). For instance, in the following examples, the classifier *ben* in *liang ben shu* ('two books') is a count-classifier while the classifiers *xiang* in *liang xiang shu* ('two boxes of books') and *ping* in *liang ping jiu* ('two bottles of wine') are mass-classifiers.

¹ Chinese classifiers are not limited to nominal ones (*mingliang ci*) but also include verb classifiers (*dongliangci*), measurement units (*danwei liangci*), and so on. In this study, I am only concerned with nominal classifiers.

² Some exceptions are Sun (1988) and Li (1997) who study Chinese numeral classifiers from the discourse and functional approach, and Erbaugh (1986), Loke (1996), and Polio (1994) who have adopted a pragmatic approach to show how classifiers are learned or used in real life situations.

³ I thank one of the anonymous reviewers for pointing out the importance of distinguishing these two kinds of Chinese classifiers.

- (2)a. liang ben shu
two Cl book
'two books'
- b. liang xiang shu
two Cl-box book
'two boxes of books'
- c. liang ping jiu
two Cl-bottle wine
'two bottles of wine'

While Chinese linguists generally agree that a distinction between these two kinds of numeral classifiers should be made, they differ in the usage of terms. Some use 'measure words' to refer to both kinds of classifiers interchangeably while others use 'count-classifier,' or 'count-noun classifiers,' or 'qualifying classifiers' for nouns that can occur naturally in concrete, countable entities, and use 'massifiers,' 'quantifiers,' 'mass-classifiers,' or 'measure words' for those classifiers that do not categorize but simply give measurement units to the noun entities (Cheng & Sybesma, 1998; Huang, 1982; Lee, 1996; Loke, 1991; Tai, 1992, 1994). In this study, I adopt the terms 'count-noun classifiers' and 'mass-noun classifiers' to make the distinction between these two sets of Chinese numeral classifiers. This article is divided into five sections. In Sect. 2, I argue that although shape categories constitute a major cognitive base for numeral classification, lexical taxonomy also plays a unique role in determining the use of some Chinese classifiers. In Sect. 3, I discuss the relationship and the distinction between count-noun classifiers and mass-noun classifiers. In Sect. 4, I describe an important characteristic of Chinese numeral classifiers—their function to specify and clarify the referential meaning of a noun that has multiple meanings, and in the process I refute the claim that numeral classifiers are semantically redundant. In Sect. 5, I argue that Chinese numeral classifiers can be creatively used for stylistic and artistic effects. In Sect. 6, I caution that although in general the relationship between a noun and its classifier is explicable from a semantic/cognitive stance, it is not always transparent and consistent; at times the choice of a classifier can be entirely arbitrary and even native speakers may disagree as to what is the appropriate classifier to use for a noun.

2 Numeral classifiers and lexical taxonomies

Most studies on linguistic categorization focus on salient characteristics or inherent features perceived in the real world. Cross-linguistic studies have revealed that such semantic categories as "humanness," "animacy," "shape," "use," and "consistence" are most frequently employed in the classifier languages in putting objects into certain classes or groups (Craig, 1986). Looking at Chinese classifiers, one also finds that all the above-mentioned parameters are adopted though to different degrees (Tai, & Wang, 1990; Tai, 1994; Shi, 1996). For example, the classifier *tiao* can categorize the following seemingly heterogeneous objects into one class as long as they are perceived to share such semantic features as one-dimensional and/or rope-like:

- (3)a. yi *tiao* she (one CL snake; 'a snake')
 b. yi *tiao* he (one CL river; 'a river')
 c. yi *tiao* jie (one CL street; 'a street')
 d. yi *tiao* xinwen (one CL news; 'an item of news')

However, noun classes as revealed by classifiers are but one way to categorize an object "in terms of relevant parameters of world view." In some languages, the classification of things in the world is built into the nouns. Both Dixon and Lakoff point out that in traditional Dyirbal, an aboriginal language of Australia, all the nouns must be preceded by one of four words: *bayi* (human males; animals), *balan* (human females; water; fire; fighting), *balam* (non-flesh food), and *bala* (everything not in the other classes) (Dixon, 1986; Lakoff, 1986). These four words in turn classify all objects in the Dyirbal universe, and "to speak Dyirbal correctly one must use the right classifier before each noun" (Lakoff, 1986, p. 14). Delancey also reports that in Thai as well as in other Tai languages (which include closely related languages spoken in southern China, northern Burma, Vietnam, and Laos), nouns may be formed by noun compounds that contain what he calls a "class term" or "lexical taxonomy" and that the class terms represent "a category which occurs throughout the family" and thus "have a semantic classifying function similar to that of classifiers" (Delancey, 1986, pp. 438–439). For example, the word *phluu* in the Thai noun compounds *bay-phluu* (betel leaf) and *ton-phluu* (betel vine) indicates a higher taxon of the same category of object (e.g., 'leaf') and the other half of the compound a specific type under the category. In Chinese, this process of lexical taxonomy is very common in forming noun compounds and plays a role in determining the use of classifiers for some nouns. Recognizing this built-in taxonomical feature of some Chinese compound nouns, Qian Hu noted, "some classes of nouns have morphological markings, such as suffix or final morpheme of a compound noun. These morphemes may indicate the semantic categories of the noun, and sometimes coincide with the semantic categories identified by classifiers (Hu, 1993, p. 16)."⁴ Take classifier *ke* as an example. By definition, *ke* is a classifier for small, solid, and kernel-like objects, thus it can classify the following diverse objects into one group:

- (4)a. yi *ke* huangdou (one CL soybean; 'a soybean')
 b. yi *ke* ya (one CL tooth; 'a tooth')
 c. yi *ke* dingzi (one CL nail; 'a nail')
 d. yi *ke* zidan (one CL bullet; 'a bullet')

If *ke* is a classifier for small and kernel-like objects, how do we explain the fact that *ke* is also a classifier for such objects as 'yuanzidan' ('atom-bomb') and 'daodan' ('guided missile')? The reason may lie in the class term *dan* in the noun compounds. The original meaning of the word *dan* or *danzi* was "marble" or "pellet shot from a slingshot." Later, *dan* also came to refer to "weapons that contained explosives and could be fired, launched, or dropped." Because *ke* is a classifier for *dan*, other noun compounds that contain *dan* also use *ke* as a classifier even though such noun entities have no resemblance to small and kernel-like objects:

- (5)a. san *ke* zidan (three CL bullet; 'three bullets')
 b. san *ke* zhadan (three CL bomb; 'three bombs')

⁴ Hu (1993). I thank one of the anonymous reviewers for referring me to Hu's work.

- c. san *ke* yuanzidan (three CL atom-bombs; ‘three atom-bombs’)
 d. san *ke* daodan (three CL guided-missile; ‘three guided-missile’)

In the above examples, the lexical word *dan* can be treated as a class term that groups a range of explosive objects from ‘bullets’ to ‘atom-bombs’ into one category and, as such, they all take the same classifier *ke*. This same process of lexical taxonomy also applies to the use of *tiao* as a shape classifier for objects which do not necessarily contain the long and one-dimensional features that are typically associated with *tiao*. For example, we would have no problem to understand why *tiao* is used as a classifier for *yi tiao tui* ‘one leg’ or *yi tiao kuzi* (‘one pair of pants’) since both ‘leg’ and ‘pants’ can be seen as one-dimensional objects. But why should the following nouns also take *tiao* as a classifier?

- (6)a. *yi tiao* neiku (one CL underwear; ‘a pair of underwear’)
 b. *yi tiao* sanjiaoku (one CL briefs; ‘a pair of briefs’)
 c. *yi tiao* youyongku (one CL swimming trunk; ‘a swimming trunk’)
 d. *yi tiao* duanku (one CL shorts; ‘a pair of shorts’)

Obviously, the shape parameter of *tiao* is irrelevant here. These objects take the classifier *tiao* because they are categorized into one group by the class term or morpheme *ku* ‘pants’, and since *tiao* serves as a generic classifier for *ku* (a piece of clothing one puts through one’s legs), any noun that contains the class term *ku* acquires *tiao* as a classifier through lexical taxonomy.

3 Count-noun classifiers, mass-noun classifiers, and boundaries

In numeral classifier languages, a classifier is obligatory when the noun is counted or is used in a demonstrative structure. For example, *shuzhuo* ‘desk’ in (7) does not take a classifier since it is not in a quantified or demonstrative syntax, but has to take a numeral classifier in example (8):

- (7) Wode shuzhuo shi xinde.
 my desk be new
 ‘My desk is new.’

- (8) Zhe jian wuzi you liang zhang shuzhuo, na zhang shi wode.
 this CL room have two CL desk, that CL be mine.
 ‘This room has two desks, that (one) is mine.’

Because a numeral classifier only occurs in quantitative or demonstrative expressions, a common view held by many linguists is that a classifier functions simply as giving a unit to the noun (Greenberg, 1972; Lehman, 1979; Ritchie, 1971). For example, according to Greenberg, classifiers serve as “quasi-units” to indicate a unit of collectivity expressed by the noun. Similarly, Ritchie points out that a classifier expresses an individual instance of a “substance” conveyed by the noun. In Lehman’s definition, “classifier expressions (a classifier together with a number, demonstrative, attributive or whatever) are lexical realizations of (referentially indexed) variables, set variables in particular, bound by quantifiers of one kind or other” (Lehman, 1979, p. 154). But Chinese numeral classifiers often do more than simply playing a quantifying role by providing a unit or measurement for the noun,

as they also serve the qualifying function of adding special meanings to the noun. One piece of evidence of this function of Chinese classifiers is that the choice of a particular classifier can help set some perimeters or a boundary to the same noun entity (Hu, 1993; Tai & Wang, 1990). This function of classifiers is particularly important for those noun entities that can take different shapes or forms. Take the word *yueliang* ‘moon’ for example; a ‘moon’ can be round or crescent depending on its lunar cycle. In English, different lexical words are used to capture the changing forms of the moon: a full moon or a crescent moon (or new moon). But in Chinese it is often the classifiers that contour the shapes or specify the referential meanings of the object in question. Thus, when it is full moon, the classifier *lun* is used; when it is new moon, the classifier *wan* is used:

- (9)a. *yi lun yueliang* (one CL moon; ‘a full moon’)
 b. *yi wan yueliang* (one CL moon; ‘a crescent moon’)

In the above examples, the only difference between the expressions is the different choice of classifiers. The word *lun* has a lexical meaning of a wheel, and when used as a classifier for “moon,” indicates the round shape of the moon. For the same semantic dimension, *lun* is also a classifier for *taiyang* ‘sun’. The lexical meaning of *wan* is curved or bending, and when used as a classifier for “moon”, it indicates the crescent shape of the moon. According to Hu, “a noun can co-occur with different classifiers depending on its referent’s physical appearance. ...The flexibility with classifiers occur most often with shape classifiers used for nouns whose referents may be of different shapes” (Hu, 1993, pp. 17–18). Another example in this regard can be seen in a wide range of classifiers that can go with the same word *xiangyan* ‘cigarette’. Look at the following examples:

- (10) a. *yi gen xiangyan* (one CL cigarette; ‘a cigarette’)
 b. *yi jie xiangyan* (one CL cigarette; ‘a section of cigarette’)
 c. *yi bao xiangyan* (one CL cigarette; ‘a pack of cigarette’)
 d. *yi tiao xiangyan* (one CL cigarette; ‘a carton of cigarette’)

Scholars generally agree that a distinction must be made between count-noun classifiers and mass-noun classifiers. Count-noun classifiers, they argue, denote some inherent and permanent properties of an object while mass-noun classifiers only indicate temporary states of the object in question and give a quantifying description of the object (Allen, 1977; Tai & Wang, 1990; Tai, 1992). According to this distinction, *gen* in example (10a) is a count-noun classifier as it indicates a long and stick-like property that is characteristic of a cigarette while *jie*, *bao*, and *tiao* are mass-noun classifiers since they express a temporary state of a cigarette or cigarettes. In their function of denoting simply units or measurements, mass-noun classifiers such as *jie*, *bao* and *tiao* can be used for objects of different noun classes:

- (11)a. *yi jie xiangyan* (one CL cigarette; ‘a section of cigarette’)
 b. *yi jie shenzi* (one CL rope; ‘a section of rope’)
 c. *yi jie shuiguan* (one CL water pipe; ‘a section of water pipe’)
- (12)a. *yi bao xiangyan* (one CL cigarette; ‘a pack of cigarettes’)
 b. *yi bao mianfen* (one CL flour; ‘a bag of flour’)
 c. *yi bao liwu* (one CL gift; ‘a package of gift’)

- (13)a. yi *tiao* xiangyan (one CL cigarette; 'a carton of cigarettes')
 b. yi *tiao* mianbao (one CL bread; 'a loaf of bread')
 c. yi *tiao* feizao (one CL soap; 'a bar of soap')

For the most part, mass-noun classifiers are easy to distinguish from count classifiers and are found quite commonly in all natural languages. Typical mass-noun classifiers are those that express scalar concepts such as length (inches, meters, miles), weight (ounces, pounds), aggregation (pile, heap, group, chunk, slice), and an open-class of container objects serving as units (box, pack, bottle, bowl, plate and so on). But at times, the distinction between a count-noun classifier and a mass-noun classifier can be fuzzy and less well defined. As pointed out by Becker, (1975, p. 114), the "assumed distinction between classifiers proper and quantifiers is really best considered a continuum, for, while there are forms that are clearly classifiers and clearly quantifiers, there are some forms that are intermediary and not clearly one or the other." This ambiguity can be seen in the use of the Chinese classifier *tiao*. On the one hand, *tiao* is a de facto shape count-noun classifier as it occurs with objects that are long and rope-like. On the other hand, *tiao* can also be a mass-noun classifier indicating a unit or temporary state as seen in the examples in (13). However, even in its role as a mass-noun classifier, *tiao* still retains its semantic implication as a shape classifier. Becker attributes the difficulty of drawing a clear-cut line between count-noun classifiers and mass-noun classifier to the fact that "*quantity* and *quality* are not discrete semantic classes but rather polarities in a semantic continuum" (1975, p. 114).

Another factor which may also complicate the matter is the fact that often numeral classifiers play a dual role of both qualifying and quantifying an object (Denny, 1986). In other words, a numeral classifier can serve both as a count-noun classifier and as a mass-noun classifier. The clearest evidence of this claim is that both count-noun and mass-noun classifiers are obligatory in enumeration. At any rate, although it may be still debatable whether count-noun classifiers and mass-noun classifiers can be completely separated, what is clear is that in Chinese the distinction is not clear cut, and is often further complicated by the fact that both count-noun classifiers and mass-noun classifiers occur in the same syntactic position. Whether the same noun entity is taking a count-noun classifier or a mass-noun classifier depends on the different indexical meaning or form of the object in question. Some examples are as follows:

- (14)a. yi *pian* mianbao (one CL bread; 'a slice of bread')
 b. yi *kuai* mianbao (one CL bread; 'a chunk of bread')
 c. yi *tiao* mianbao (one CL bread; 'a loaf of bread')
- (15)a. yi *duo* hua (one CL flower; 'a flower')
 b. yi *shu* hua (one CL flower; 'a bunch of flowers')
 c. yi *cu* hua (one CL flower; 'a cluster of flowers')

However, according to Cheng and Sybesma (1998, pp. 387–388), we can also use syntax to test the count-mass distinction by inserting an optional modification marker *de* between the classifier and the noun. While the modification marker *de* can be inserted between a mass-noun classifier and the noun, it can not be inserted between a count-noun classifier and the noun. They provide the following examples to illustrate the point:

- (16)a. san bang (de) rou
 three CL-pound DE meat
 ‘three pounds of meat’
- b. liang xiang (de) shu
 two CL-box DE book
 ‘two boxes of books’
- c. ba tou (*de) niu
 eight CL-head cow
 ‘eight cows’
- d. jiu gen (*de) weiba
 ‘nine tails’ CL-one dimensional tail

4 Debates on the semantic redundancy of numeral classifiers

Cross-linguistic studies have shown that although in most classifier languages the surface syntax of a count-noun classifier structure is often identical with that of a mass-noun classifier, a count-noun classifier is quite different from a mass-noun classifier in its relationship to the head noun (Adams & Conklin, 1973; Allen, 1977; Denny, 1976; Tai & Wang, 1990; T’sou, 1976). Look at the following examples:

- (17)a. yi *ke* tang (one CL *candy*; ‘one candy’)
 b. yi *bang* tang (one CL-*pound* candy; ‘one pound of candy’)
 c. yi *he* tang (one CL-*box* candy; ‘one box of candy’)

Syntactically, the three phrases above all share the same structure. But *ke* in (17a) is considered a numeral classifier while *bang* ‘pound’ in (17b) is a standard weight unit and *he* ‘box’ in (17c) is a container mass-noun classifier. Both weight units and mass-noun classifiers are extrinsic to the head noun and belong to an open-ended class. For example, while we can say *yi bang tang* ‘one pound of candy’, we can also say:

- (18)a. yi *bang* ji (one CL-*pound* candy; ‘one pound of chicken’)
 b. yi *bang* miantiao (one CL-*pound* noodle; ‘one pound of noodles’)
 c. yi *he* ji (one CL-*box* chicken; ‘a box of chicken’)
 d. yi *he* miantiao (one CL-*box* noodle; ‘a box of noodles’)

According to Tai and Wang (1990) and Croft (1994), there are two types of classifiers—classifiers that create a unit of measure (as most measure words and mass-noun classifiers do) and those for noun entities “that provide natural units which can be counted” in single or mass units.⁵ Those noun entities that can be naturally counted in single units such as ‘a book’ or ‘a chicken’ or ‘a noodle’ usually take a count-noun classifier that requires the presence of some intrinsic feature and is not open to unlimited extension. Thus, it would be absurd semantically to use *ke* (which is a classifier for kernel object) for ‘chicken’ or ‘noodles’. The appropriate

⁵ These were the paraphrased words from Cheng and Sybesma (1998, p. 388). I use their paraphrase as they state the mass-count distinction most clearly.

numeral classifiers for ‘chicken’ and ‘noodle’ are *zhi* (a classifier for animals) and *gen* (a shape classifier indicating long and stiff), respectively.

- (19)a. * *yi ke ji*
 b. * *yi ke miantiao*

Because a count-noun classifier denotes some inherent or permanent features of a noun, Adams and Conklin (1973, p. 2) therefore claim that “numeral classifiers *qualify* rather than quantify the head noun.” However, in his study of the typology of numeral classification systems, Greenberg sees classifiers as indicating units of the collective ensemble expressed by the noun and, as such, they add no meaning to the noun other than providing redundant information. In his words, numeral classifiers are items “which are shown to be redundant when translation into a non-numeral classifier language like English is carried out” (Adams, 1986; Greenberg, 1974, p. 84). For example, in the Chinese phrase *zhe gen gunzi* (this CL-long and one-dimensional stick), the semantic features of long and one-dimensional indicated by the classifier *gen* seem to be redundant as they are already implied in the head noun since ‘a stick’ is called such because it is one-dimensional and stiff, and it would not be called ‘a stick’ if it were round or square. Greenberg’s theory of redundancy presupposes that the use of a numeral classifier adds no new information but just repeats or reinforces what is already inherent or present in the noun. The problem with Greenberg’s redundancy theory is that in classifier languages, a noun entity may have shifting and different semantic references, and it is often through the use of a particular classifier that the meaning becomes clear and specified. An often-cited example in this regard is the Burmese word ‘river’ illustrated by Becker (1975, p. 113). Becker has shown that the Burmese word *myi?* ‘river’ can take more than eight classifiers, and that a different semantic implication is invoked depending on the choice of a different classifier:

- (20)a. *myi? tə ya?* ‘river one place’ (e.g., destination for a picnic)
 b. *myi? tə tan* ‘river one line’ (e.g., on a map)
 c. *myi? tə hmwa* ‘river one section’ (e.g., a fishing area)
 d. *myi? tə 'sin* ‘river one distant arc’ (e.g., a path to the sea)
 e. *myi? tə 'we* ‘river one connection’ (e.g., tying two villages)
 f. *myi? tə 'pa* ‘river one secret object’ (e.g., in mythology)
 g. *myi? tə khu'* ‘river one conceptual unit’ (e.g., in a discussion of rivers in general)
 h. *myi? tə myi?* ‘river one river’ (e.g., the unmarked case)

According to Becker (1975, p. 113), “a given noun may be included in several different places in the classifier system” and “the classifier is, in part, an indication of the context in which one is speaking about something.” Thus, in the case of Burmese, one can speak of a river in at least eight contexts depending on the speech act one is performing. In other words, the use of a specific classifier as shown above not only connotes a particular meaning but also suggests a pragmatic stance highlighting the speaker’s intention about the information to be conveyed. In her study of Southeast Asian languages, Adams also finds that classifiers do carry meanings and can “be manipulated to say different things about the objects in question” (Adams, 1986, p. 242).

Looking at the use of Chinese count-noun classifiers, one finds ample examples where different classifiers have to be employed in order to specify the different

referential components of one noun entity. For example, the Chinese word *ke* has at least two very different meanings in the school context; it can mean ‘a *class* one takes for a particular day’ or ‘a *course* one takes for the whole semester’. The only way we know which is the use of different classifiers:

- (21)a. san *tang* ke (three CL class; ‘three classes’)
 b. san *men* ke (three CL course; ‘three courses’)

The Chinese noun entity *ke* is ambiguous, only through the use of a particular count-noun classifier can its meaning be clear. Therefore, Chinese numeral classifiers can add meanings and clarify ambiguities.⁶ The semantic relation between a noun and its classifier also requires agreement at the discourse level. A sentence can be rendered semantically unacceptable if a wrong classifier is used. For examples, while the sentences in (22a) and (23a) make sense, the ones in (22b) and (23b) do not:

- (22)a. Wo jintian shangle san *tang* ke.
 I today took three CL-unit class.
 ‘I took three classes today.’
 b. *Wo jintian shangle san *men* ke.
 I today took three CL-subject course.
 ‘I took three courses today.’⁷
- (23)a. Wo zhege xueqi shangle san *men* ke.
 I this semester took three CL courses.
 ‘I took three courses this semester.’
 b. *Wo zhege xueqi shangle san *tang* ke.
 I this semester took three CL classes.⁸
 ‘I took three classes this semester.’

In following examples, we can see that the meaning of a classifier is not redundant at all but plays a crucial role in differentiating the meanings of a noun entity:

- (24)a. yi *dong* lou (one CL building; ‘a [whole] building’)
 b. yi *ceng* lou (one CL building; ‘one floor [of a building]’)
- (25)a. san *zhang* baozi (three CL newspaper; ‘three pages of newspaper’)
 b. san *fen* baozi (three CL newspaper; ‘three subscriptions of newspaper’)
 c. san *jia* baozi (three CL newspaper; ‘three newspaper agencies’)

⁶ Other scholars have talked about this unique indexing feature of Chinese numeral classifiers as well; see Hu (1993); Tai and Wang (1990); Tai (1994). I thank one of the anonymous reviewers for pointing this out for me.

⁷ Example (22b) can be semantically acceptable if the emphasis is on the fact that ‘I had three courses [of different subjects] today’. If the emphasis is simply how many classes one took on a particular day, the correct classifier should be *tang* or *jie*.

⁸ Of course this sentence can be meaningful if it is intended to say that the person only had three classes for the semester and then dropped out.

In her explanation of the phenomenon that a particular noun can take several classifiers, Adams emphasizes that it is because “the noun as a symbol is imprecise and its physical referents can have different enough characteristics that different classifiers are appropriate for them” (1986, p. 242). Instead of considering a noun as an imprecise symbol, Denny proposes that nouns and classifiers belong to relatively independent systems of classes under which “nouns have more to do with what is out there in the world, and classifiers more to do with how humans interact with the world (Denny, 1976, p. 125). In Denny’s view, a “classifier need not be tied to the noun within the linguistic structure itself” and “the situation being talked about and the speaker’s intentions about the information to be conveyed determine the choice of classifier and of noun” (1976, p. 123). Clearly, examples from Chinese and other classifier languages suggest that numeral classifiers not only carry meanings, they are sometimes crucial in determining the multiple meanings of a particular noun.

5 Classifiers and stylistic effects

Another proof that count-noun classifiers carry meanings can be found in the fact in numeral classifier languages, different classifiers can be used with the same noun for various stylistic effects or the speaker’s intentions (Loke, 1996; Polio, 1994; Sun, 1988; Tai, 1992; Tai & Wang, 1990). In such cases, there is no change in the referential meaning of the noun but some other semantic qualities such as formal vs. informal, written vs. colloquial, educated vs. uneducated, positive vs. negative, and common usage vs. local dialects are invoked. Look at the following comparisons:

- (26)a. *yi zhang hua* (one CL painting; ‘a painting’)
 b. *yi fu hua* (one CL painting; ‘a painting’)
 c. *yi zhen hua* (one CL painting; ‘a painting’)
- (27)a. *yi ge yang* (one CL sheep; ‘a sheep’)
 b. *yi zhi yang* (one CL sheep; ‘a sheep’)
 c. *yi tou yang* (one CL sheep; ‘a sheep’)
- (28)a. *yi ge jiangjun* (one CL general; ‘a general’)
 b. *yi wei jiangjun* (one CL general; ‘a general’)
 c. *yi ming jiangjun* (one CL general; ‘a general’)
 d. *yi yuan jiangjun* (one CL general; ‘a general’)

In the first set of examples (26), the same noun *hua* ‘painting’ occurs with three different classifiers. Although the referential meaning of *hua* remains the same in all three examples, there are different semantic connotations due to the use of different classifiers. In (26a), the use of classifier *zhang* indicates the painting as a physical entity that has a flat surface. But in example (26b), classifier *fu* adds more meanings to the expression. It can suggest a more sophisticated use of classifiers (e.g., a more educated person may use *fu* instead of *zhang* when describing a painting or it may suggest a more formal situation where one needs to use *fu* to suit the occasion.) The use of the classifier *zhen* in (26c) carries an even more formal and sophisticated meaning than that of *fu*. It suggests that the painting is particularly valuable—so

much so that a very specialized and exclusive classifier must be used. Interestingly, the degree of formality is correlated with the range of objects these classifiers can be used to refer to. As a classifier, *zhen* has the most narrow range as it can only refer to paintings exclusively, *fu* also has a limited range but it can be used for clothing in addition to paintings. In comparison, *zhang* is much more inclusive and can be used for objects as diverse as tables, beds, newspapers, paintings, and name cards. In other words, the degree of formality of the style decreases as the number of items counted by a classifier increases.

Similarly, in the second set of examples (27), three classifiers are used to count the same noun *yang* ‘sheep’ with little change in the referential meaning. However, the use of *ge* in (27a) would suggest a more colloquial or less formal use than that of *zhi* in (27b) and *tou* (27c). Although there is a slight difference between the use of *zhi* and *tou* in that *zhi* is a general classifier for animals while *tou* is a more specific classifier for domestic animals, the difference is entirely taxonomic, but not referential. Interchange between the two does not involve any change in meaning except perhaps to indicate whether one treats sheep as a kind of animal in general or a domestic animal in particular. Finally, in the last set of examples (28), the choice of a different classifier for *jiangjun* ‘general’ adds a range of semantic motivations: *ge* is neutral and unmarked, *wei* suggests respect, *ming* is formal and in the written format, and *yuan* conveys more of a classical usage.

In her study of Chinese classifiers in empirical use, Erbaugh (1986) has found that adults tend to use more classifiers and more specific ones than children, an indication that children would start using more general classifiers and fine-tune their use of classifiers as they matured. She also observed that despite the fact that “traditional and teaching descriptions of Mandarin require an invariant, specific classifier in an enormous variety of cases, but in everyday usage and conversations, adults as well as children tend to use the general rather than the more specified classifiers” (Erbaugh, 1986, pp. 405–406).⁹ However, such factors as “level of formality, discourse type, especially narrative and poetry, length of speech turn, presence of the referent, familiarity of the referent and age of the hearer” are all important in determining whether special classifiers will be used (1986, p. 413). This observation confirms the generalization Craig has made concerning the use of classifiers in discourse in most classifier languages; that is, “the greater the formality of style, the richer the variety of classifiers and the higher the frequency of their use” (Craig, 1986, p. 8). In other words, the use of classifiers can be both an indication of style or level of language, further enriching the repertoire of language expressions.

6 Classifiers and semantic motivation

While different classifiers may be used for a particular noun, as discussed above, to bring out different characteristics or stylistic effects of the noun referent, it is not uncommon for classifiers sometimes to appear to group heterogeneous entities into one class with no apparent semantic motivation. According to some scholars, this may be due to the fact that all classes contain prototypical items and the formation

⁹ There is a huge literature on observing and studying child acquisition of classifiers, and these studies have reached conclusions similar to Erbaugh, especially about the tendency of using the general classifier *ge* in all circumstances. See Hu (1993), Lee (1996), Loke (1991).

of a class can be achieved through association with the prototypes (Givon, 1986; Hopper & Thompson, 1984; Lakoff, 1986; Tai, 1994). Thus, objects of diverse kinds may be grouped into one class or another through “typicality conditions rather than criteria conditions” (Tai, 1994, p. 482). Based on Dixon’s works, Lakoff extends prototype theory to make sense out of seemingly inconsistent and incoherent classes by emphasizing that objects can also be grouped together through such processes as “the Domain of Experience Principle,” “the Myth-and-Belief Principle,” and “the Important Property Principle” (Lakoff, 1986, pp. 15–16). In these approaches, the emphasis is still on the “perceived” or “imputed” relationship between the head noun and the semantic range covered by a classifier.

While acknowledging the cognitive basis of linguistic classification, we must also recognize that in the usage of Chinese classifiers, the semantic relation between noun and classifier is not always evident, and that the selection of a classifier for a particular noun is not always predictable and consistent. Ahrens points out a frequent disjunction between what is considered the “proper” usage of a classifier in formal or educated contexts on the one hand, and its actual usage in speech on the other hand. She notes, “Classifier usage in Mandarin Chinese is usually considered to be a stable process. When nouns are taught in school, they are taught with their accompanying classifier. Upon introspection, speakers can recall the classifier to be used with a noun, but *in speech they do not always use that classifier*” (Ahrens, 1994, pp. 202–203, italics added). In other words, from a psycholinguistic stance, native speakers may have a perceived notion of “correct” classifier use based often on prototypes; however, it may sometimes be difficult to draw a clear-cut classifier-noun relationship because semantic motivation is not always predictable. Therefore, Ahrens argues that “the use of Chinese classifiers in modern Mandarin is semantically motivated, although not fully predictable” (1994, p. 207). One obvious reason for this is that in Chinese classifier usage, it is not uncommon that one classifier can be used for a wide range of noun entities that share no clear semantic or intrinsic features. Take the classifier *bu* as an example. It can be used as a classifier for a novel, a film, a car, a telephone, and the list can go on. There is no clear shared prototypical or semantic reason why these nouns can be grouped together under the classifier *bu*:

- (29)a. yi *bu* xiaoshuo (one CL novel; ‘a novel’)
- b. yi *bu* dianying (one CL film; ‘a film’)
- c. yi *bu* jiaochē (one CL car; ‘a car’)
- d. yi *bu* dianhua (one CL telephone; ‘a telephone’)

In some cases, one classifier can be used with nouns of different taxonomies because the classifier itself carries multiple lexical meanings. The classifier *zhi* is a case in point. *Zhi* can be used as a generic classifier for animals including mammals, birds, insects, and frogs:¹⁰

- (30)a. yi *zhi* mao (one CL cat; ‘a cat’)
- b. yi *zhi* laohu (one CL tiger; ‘a tiger’)
- c. yi *zhi* niao (one CL bird; ‘a bird’)
- d. yi *zhi* pangxie (one CL crab; ‘a crab’)

¹⁰ However, *zhi* as a classifier for animals cannot be used for those that have salient one-dimensional shape such as fish or snake, for which the classifier *tiao* (long, one-dimensional) must be used.

But because *zhi* also has a lexical meaning of referring to ‘one of a pair’ for those objects that occur in pairs, it can also serve to indicate a semantic reference meaning ‘singular.’ Compare the following sets:

- (31)a. yi *zhi* yanjing (one CL eye; ‘one eye’)
 b. yi *zhi* xie (one CL shoe; ‘one shoe’)
 c. yi *zhi* kuaizi (one CL chopstick; ‘one chopstick’)

Furthermore, *zhi* can be used as a classifier for some three-dimensional, container-like objects or ball-like objects such as a basket, a balloon, a pineapple.

- (32)a. yi *zhi* lanzi (one CL basket; ‘one basket’)
 b. yi *zhi* qiqiu (one CL balloon; ‘one balloon’)
 c. yi *zhi* boluo (one CL pineapple, ‘one pineapple’)

In the examples (30) through (32), the objects classified by *zhi* are as diverse and random as from animals to shoes to baskets. The reason that they can take *zhi* as a classifier is not because they have some shared prototypical properties, but rather because *zhi* as a classifier has multiple lexical meanings that can crosscut semantic domains. Both the use of the classifier *bu* and the classifier *zhi* in the above examples indicate that the Chinese classifier system can be arbitrary at times and that linguistic convention rather than semantic motivation may be a factor in accounting for the use of a classifier. Haas’ practical advice regarding the use of Thai classifiers also holds true in Chinese classifiers: “We cannot make rules covering the choice of classifier to be used in every given instance. The use of classifiers is a matter that must be treated not only as a part of the grammar of the language but also as a part of its lexicography” (Haas, 1942, p. 203).

7 Conclusion

Numeral classification is an instance of the use of a linguistic device for the purpose of categorization. Because so many geographically separated and unrelated languages employ roughly the same set of categories for classification, it is believed that what numeral classifiers define are cognitive categories and reflect a human reclassification of the world (Adams & Conklin, 1973). However, empirical evidence both across languages and within a particular language also seems to indicate that linguistic categorization is a highly language-specific and culturally motivated activity as well. As noted by Craig, “Classifiers offer enough of a challenge to the nature of categories that ... some may be tempted to say that they are arbitrary forms that do not reflect conceptual structures (Craig, 1986, p. 2). Just to give an example of showing how each language is unique in developing its own classificatory system and how arbitrary such classification systems can be, let us compare the use of classifiers in Chrau (a Mon-Khmer language spoken in Southeast Asia) and Chinese. Both Chrau and Chinese are numeral classifier languages and use a semantic category of flatness. But while in Chrau the following objects are grouped into one class owing to their perceived feature of flatness (Adams & Conklin, 1973, p. 6), in Chinese the same set of objects is grouped into very different categories, each with a different classifier:

(33)	Chrau	Chinese	
	(One group: flatness)		Classifiers
	‘turtle’	wugui	<i>zhi</i> (animal)
	‘mat’	dianzi	<i>kuai</i> (two-dimensional)
	‘trousers’	kuzi	<i>tiao</i> (one-dimensional, rope-like)
	‘cloth’	bu	<i>kuai</i> (two-dimensional)
	‘clothing’	yifu	<i>jian</i> (a specific classifier for clothes)
	‘small gong’	luo	<i>mian</i> (flat, smooth surface)

Even within the same language, it is not uncommon that a number of objects may appear to be arbitrarily grouped into one class based not on cognitive attributes but simply by linguistic convention. The fact that even competent native speakers may sometimes disagree with each other or feel at a loss as to what classifier a particular noun should take further points out that the relationship between noun and classifier is not always explicable and predictable. This may also explain why empirical studies on the use of Chinese classifiers often find that in actual conversations and speech acts there is an overwhelmingly high tendency to use the general classifier *ge* (Erbaugh, 1986; Guo, 2002; He, 2001; Sun, 1996). Adults as well as children tend to use this general classifier in a situation when they are uncertain about what classifier they must use for a particular noun, and they also use it in situations where there are known specific classifiers.

Therefore, while recognizing that the Chinese classifier system is cognitive-based, we must also realize that this system is by no means a rigid and closed one. There are multiple ways in which categorization may be carried out, through lexical taxonomy, prototype association, domain of experience, perception, and even human imagination. Moreover, classifiers themselves also play multiple roles in the language system. Not only can they play a quantifying role, but they also carry out a qualifying role by providing additional semantic information. Last but not the least, the use of classifiers can certainly make the language much more expressive, vivid, and innovative, since the choice of different classifiers can generate such a wide range of stylistic effects that rules of classification are often deliberately ignored or transgressed for special artistic and creative appeal.

References

- Adams, K. L. (1986). Numeral classifiers in austroasiatic. In C. Craig (Ed.), *Noun classes and categorization* (pp. 241–262). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Adams, K. L., & Conklin, N. F. (1973). Toward a theory of natural classification. *Papers from the ninth regional meeting. Chicago Linguistics Society*, pp. 1–10.
- Ahrens, K. (1994). Classifier production in normals and aphasics. *Journal of Chinese Linguistics*, 22, 203–247.
- Allen, K. (1977). Classifier. *Language*, 53(2), 285–311.
- Becker, A. L. (1975). A linguistic image of nature: The Burmese numerative classifier system. *Linguistics*, 165, 109–121.
- Cheng, L. L.-S., & Sybesma, R. (1998). Yi-wan Tang, Yi-ge Tang: Classifiers and massifier. *The Tsinghua Journal of Chinese Studies, New Series*, 28(3), 385–412.
- Chien, Y.-C., Barbara, L., & Chiang, C.-P. (2003). Chinese children comprehension of count-classifiers and mass-classifiers. *Journal of East Asian Linguistics*, 12, 91–120.
- Craig, C. (1986). Introduction. In C. Craig (Ed.), *Noun classes and categorization* (pp. 1–10). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Croft, W. (1994). Semantic universals in classifier systems. *Word*, 45, 145–171.

- Denny, P. J. (1976). What are noun classifiers good for? *Papers from the twelfth regional meeting. Chicago Linguistic Society*, pp. 122–132.
- Denny, P. J. (1986). The semantic role of noun classifiers. In C. Craig (Ed.), *Noun classes and categorization* (pp. 279–308). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Delancey, S. (1986). Toward a history of Tai classifier systems. In C. Craig (Ed.), *Noun classes and categorization* (pp. 437–452). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Dixon, R. M. W. (1986). Noun classes and noun classification in typological perspective. In C. Craig (Ed.), *Noun classes and categorization* (pp. 105–113). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Erbaugh, M. S. (1986). Taking stock: The development of Chinese noun classifiers historically and in young children. In C. Craig (Ed.), *Noun classes and categorization* (pp. 399–436). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Friedrich, P. (1970). Shape in Grammar. *Language*, 46, 370–407.
- Givón, T. (1986). Prototypes: Between Plato and Wittgenstein. In C. Craig (Ed.), *Noun classes and categorization* (pp. 77–102). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Greenberg, J. H. (1972). Numeral classifiers and substantive number: Problems in the genesis of a linguistic type. *Working Papers on Language Universals*, 9, 1–39.
- Greenberg, J. H. (1974). Studies in numerical system: Double numeral system. *Working Papers on Language Universals*, 14, 75–89.
- Guo, X. (2002). *Xiandai Hanyu Liangci Yongfa Cidian* [A Dictionary of Usage of Contemporary Chinese Classifiers]. Beijing: Yuwen Chubanshe.
- Haas, M. (1942). The use of numeral classifiers in Thai. *Language*, 18, 201–6.
- Hanyu Liangci Cidian (1988). *Hanyu Liangci Cidian* [A dictionary of Chinese classifiers]. Fuzhou: Fujian Renmin Chubanshe.
- He, J. (2001). *Xiandai Hanyu Liangci Yanjiu* [Studies on classifiers in modern Chinese]. Beijing: Minzu Publishing House.
- Hopper, P., & Thompson, S. (1984). The discourse basis of lexical categories. *Language*, 60, 703–753.
- Hu, Q. (1993). *The acquisition of Chinese classifiers by young mandarin-speaking children*. PhD dissertation, Boston University.
- Huang, C.-T. J. (1982). *Logical relations in Chinese and the theory of grammar*. PhD dissertation, MIT.
- Lakoff, G. (1986). Classifiers as a reflection of mind. In C. Craig (Ed.), *Noun classes and categorization* (pp. 13–51). Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Lakoff, G. (1987). *Women, fire and dangerous things: What categories reveal about the mind*. Chicago: University of Chicago Press.
- Lee, M. (1988). Language, perception and the world. In J. A. Hawkins (Ed.), *Explaining language universals* (pp. 211–246). New York: Basil Blackwell Inc.
- Lee, T. H.-T. (1996). Theoretical issues in language development and Chinese child language. In J. C.-T. Huang, & A. Y.-H. Li (Eds.), *New horizons in Chinese linguistics* (pp. 293–356). Dordrecht: Kluwer Academic Publishers.
- Lehman, F. K. (1979). Aspects of a formal theory of noun classifiers. *Studies in Language*, 3, 153–180.
- Li, W. (1997). The discourse function of classifier phrases in Mandarin Chinese. In S. Tötösy de Zepetnek, & J. W. Jay (Eds.), *East asian cultural and historical perspectives* (pp. 241–254). Edmonton, University of Alberta: Research Institute for Comparative Literature and Cross-Cultural Studies.
- Li, C. & Thompson, S. (1981). *Mandarin Chinese: A functional reference grammar*, Berkeley: University of California Press.
- Loke, K.-K. (1991). A semantic analysis of young children's use of Mandarin shape classifiers. In A. Kwan-Terry (Ed.), *Child language development in Singapore and Malaysia* (pp. 98–116). Singapore: Singapore University Press.
- Loke, K.-K. (1994). Is *Ge* merely a 'general classifier'? *Journal of the Chinese Language Teachers Association*, 29(3), 35–50.
- Loke, K.-K. (1996). Norms and realities of Mandarin Shape Classifiers. *Journal of the Chinese Language Teachers Association*, 31(2), 1–22.
- Polio, C. (1994). Non-native speakers' use of nominal classifiers in Mandarin Chinese. *Journal of the Chinese Language Teachers Association*, 31(3), 51–66.
- Ritchie, W. C. (1971). On the analysis of surface nouns. *Papers in Linguistics*, 4, 1–16.
- Rosch, E., Mervis, C. B., Gray, W. D., Johnson, D. H., & Boyes-Braem, P. (1976). Basic objects in Natural Categories. *Cognitive Psychology*, 8, 382–439.
- Shi, Y.-Z. (1996). Proportion of extensional dimensions: The primary cognitive basis for shape-based classifiers in Chinese. *Journal of the Chinese Language Teachers Association*, 31(2), 37–59.
- Sun, C. (1988). The discourse function of numeral classifiers in Mandarin Chinese. *Journal of Chinese Linguistics*, 2, 298–322.

- Sun, R. (1996). Guanyu Liangci 'Gehua' de Sikao [On the tendency toward using the General Ge]. *Yunnan Normal University Journal*, 1, 70–74.
- Tai, J. H.-Y. (1992). Variation in classifier systems across Chinese dialects: Towards a cognition-based semantic approach. *Symposium Series of the Institute of History and Philology, Academia Sinica*, No. 2, pp. 587–608.
- Tai, J. H.-Y. (1994). Chinese classifier systems and human categorization. In W. S.-Y. Wang, M. Y. Chen, & O. J. L. Tzeng (Eds.), *In honor of William S.-Y. Wang: Interdisciplinary studies on language and language change* (pp. 479–494). Taipei: Pyramid Press.
- 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.
- Tai, J. H.-Y. & Wang, L. (1990). A semantic study of the classifier *Tiao*. *Journal of the Chinese Language Teachers Association*, 25 (1), 35–56.
- T'sou, B. K. (1976). The structure of nominal classifier systems. In P. N. Jenner, L. C. Thompson, & S. Starosta (Eds.), *Austroasiatic studies, Part II* (pp. 1214–1247). Honolulu: University of Hawaii Press.