# Number and numeral classifiers

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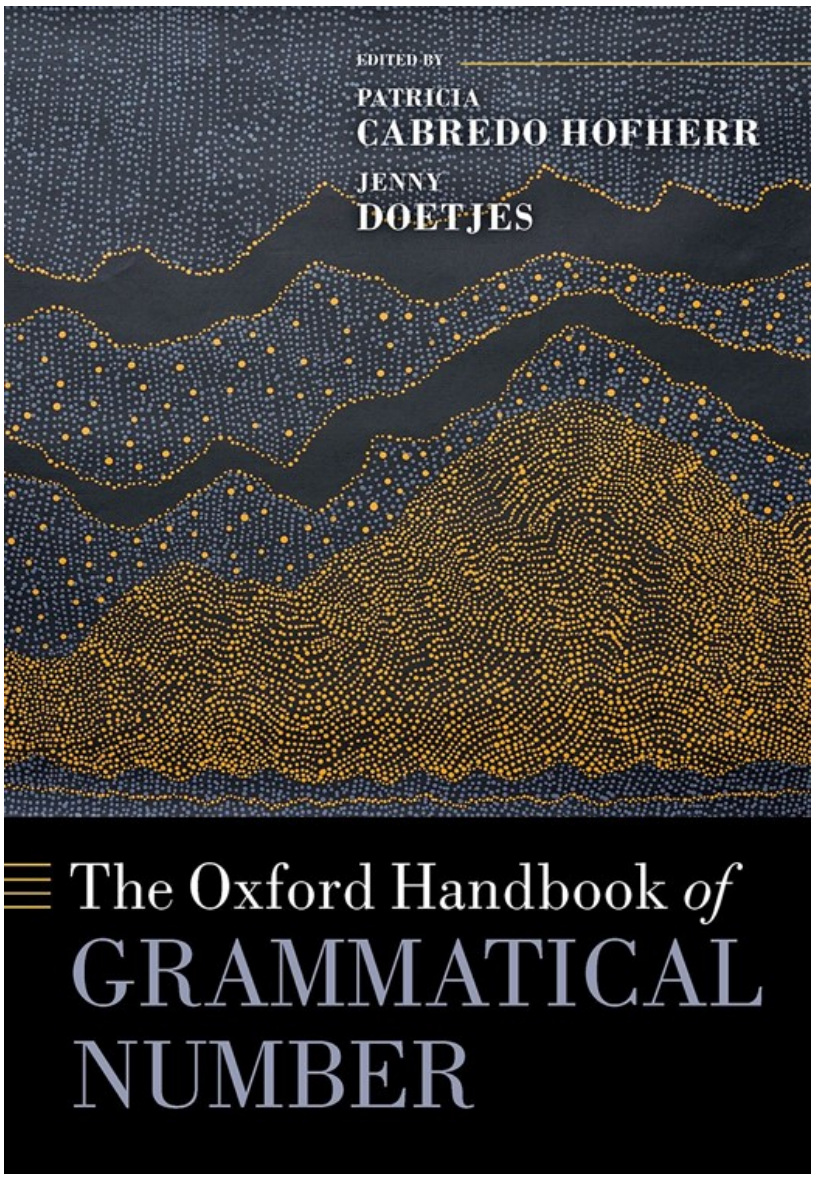


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CHAPTER

# 10 Number and Numeral Classifiers

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**Abstract**

This chapter describes various ways in which numeral classifiers interact with semantic number and number marking across languages. According to the Sanches–Greenberg–Slobin generalizations, languages in which the use of numeral classifiers is obligatory do not have obligatory number marking on nouns, and in the presence of numeral classifiers, nouns are normally not marked for number. An empirical and theoretical discussion of these generalizations is followed by a description of data from the Austronesian language Mokilese, an obligatory numeral classifier language with obligatory number marking on definite and indefinite markers. Finally, the chapter turns to number marking on classifiers (i.e. the form of the numeral classifier used with the numeral for 'one' differs from the form used with other numerals), as well as number marking by means of classifiers (i.e. cases where numeral classifiers play a role in the semantic number-marking strategies that a language has).

**Keywords:** numeral classifiers, Sanches–Greenberg–Slobin generalizations, nominal number morphology, types of number markers, definiteness, mass–count distinction

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## 10.1 Introduction

IN so-called numeral classifier languages, numerals require or permit the insertion of a numeral classifier when they combine with a noun. An example of obligatory insertion of a numeral classifier is given in (1a). This example can be contrasted with the English example in (1b), where a plural noun is used.[1]

(1)

a. sān *(zhī) bǐ (Mandarin)
three CL$^{branch}$ pen

b. three pen*(s) (English)

As will be shown in this chapter, numeral classifiers interact with number marking in various ways. The chapter will start with a short overview of the main properties of numeral classifiers and discusses two types of semantic approaches to the question why classifiers are inserted (section 10.2). The rest of the chapter will treat several issues pertaining to the ways in which number and numeral classifiers interact across languages.

A first type of number marking that is relevant for numeral classifiers is morphological number marking on nouns. According to the Sanches–Greenberg–Slobin generalizations, obligatory number marking on nouns and obligatory use of classifiers are mutually incompatible across languages (Sanches, 1971; Greenberg, 1972; Sanches and Slobin, 1973). The generalizations will be discussed from an empirical and from a theoretical perspective in section 10.3. Section 10.4 focuses on the Austronesian language Mokilese
p. 221 (Harrison and Albert, 1976), a language with obligatory classifier ↳ insertion on the one hand and obligatory number marking on the other. Number is marked in various ways in the rich system of definite and indefinite determiners of the language. Determiners are in most cases obligatory, in contradiction with typological claims that have been made in the literature (Chierchia, 1998a, 2010). Section 10.5 turns to numeral classifier languages in which classifiers themselves are marked for number, depending on the

numeral. In these languages, different classifiers are used with the numeral for 'one' and higher numerals. The section also addresses the difference between number agreement on the classifier in a classifier system and number marking on measure words in non-classifier languages. Section 10.6 discusses the use of numeral classifiers in expressing number. In some numeral classifier languages (e.g. the Sino-Tibetan language Cantonese) numeral classifiers are not only used with numerals (see (1a)), but they can also convey singular meaning in the absence of numerals.

## 10.2 Numeral classifiers

### 10.2.1 Sortal and mensural classifiers

Numeral classifiers indicate units of counting. In general, a difference is made between sortal classifiers and mensural classifiers. Sortal classifiers indicate a default unit 'in terms of which the referent of the head noun can be counted' (Grinevald, 2005: 1020). Sortal classifiers are typically combined with nouns that have an individuated interpretation: in the example in (1a), in which the sortal classifier *zhī* is used for the noun *bǐ* 'pen', each unit of counting corresponds to an individual pen. In this respect, sortal classifiers resemble unit counters such as *piece* in English, as in *two pieces of furniture* (see Greenberg, 1972). Mensural classifiers, on the other hand, specify a unit that is to a large extent independent of the meaning of the noun. They are comparable to measure words in languages that do not make use of classifiers and are used in order to create countable units that are not already available in the meaning of the noun:

(2)

a. liǎng jīn mǐ/píngguǒ (Mandarin)
two CL$^{half_kilo}$ rice/apple

b. two pounds of rice/apples (English)

Even though mensural classifiers are a type of measure word, a distinction can be made between mensural classifiers and measure words such as *pound* in English. In the first place, mensural classifiers are normally part of a larger system of classifiers, which also comprises sortal classifiers (Allan, 1977; Grinevald, 2005). In the second place, classifiers behave differently from ordinary nouns in the sense that they are permitted
p. 222 in positions where ordinary nouns are not allowed. In this respect mensural classifiers ↳ differ from measure words in a language such as English, which are, from a grammatical point of view, more similar to ordinary nouns, as illustrated by the requirement of plural marking in both (2b) and (1b).[2] In the third place, even for languages with obligatory insertion of numeral classifiers, it is not uncommon to find measure words that cannot function as classifiers and need insertion of a classifier themselves when they are combined with a numeral (Doetjes, 2017a). Examples of such languages include Mandarin (Li and Thompson, 1981: 105) as well as Mokilese (Austronesian, Harrison and Albert, 1976: 106), Jacaltec (Mayan, Craig, 1986a: 244), and Taba (Austronesian, Bowden, 2001: 254). The Mandarin examples in (3) illustrate the difference between the two types of measure words:

(3)

a. sān (*ge) tiān (Mandarin)
three CL$^{general}$ day
'three days' (Li and Thompson, 1981: 105)

b. liǎng *(ge) yuè
two CL$^{general}$ month
'two months' (Li and Thompson, 1981: 169)

The impossibility of classifier insertion with *tiān* 'day' follows if the measure word *tiān* in (3) is analysed as a mensural classifier. The measure word *yuè* 'month' cannot be analysed as such, as it requires classifier insertion, on a par with ordinary nouns (see (1a)).[3]

Numeral classifiers are characterized by the fact that they are optionally or obligatorily inserted in the context of numerals and other quantity expressions, but they can be found in other contexts as well. In Mandarin, for instance, numeral classifiers are also used with demonstrative determiners. Besides numeral classifiers, other types of classifiers exist (see for instance Aikhenvald, 2000; Senft, 2000; Grinevald, 2005). They show up in genitive structures (genitive classifiers), on verbs (verbal classifiers), and they may also simply accompany nouns (noun classifiers). They 'classify' nouns in the sense that they usually reflect certain properties of the nouns they conventionally combine with (e.g. form or function) and as such they constitute grammatical systems of noun categorization (Grinevald, 2005).[4] For instance, the numeral classifier *zhī* in example (1a) comes from the word for 'branch' and is typically used with nouns that denote long, thin objects. Note however that there also exist general classifiers such as *ge* in (3), which do not contain information about the form or function of the default units corresponding to the noun they combine with. Other types of classifiers may classify nouns based on (properties of) the type of material, as illustrated in (4a) for the ↳ verbal classifier *-ti-* for 'water' in Munduruku (Tupi), and in (4b) for the genitive classifier *kene-* for 'edible' in Ponapean (Austronesian), both cited by Grinevald (2005). Contrary to numeral classifiers, these classifiers do not correspond to units of counting:

p. 223

(4)

a. ti dojot puye, o'-ti-mog ip baseya'a be (Munduruku)
water bring when they-CL.water-place they basin in
'when they brought water, they placed it in the basin' (**noun classifier**)
(Mithun, 1986: 381)

b. kene-i mwenge (Ponapean)
CL.*edible*-GEN/1 food
'my food' (**genitive classifier**) (Rehg and Sohl, 1981: 184)

This chapter focuses on numeral classifiers. Numeral classifiers are inserted in the context of numerals and other quantity expressions and therefore intimately related to number and counting.

The size of the inventory of numeral classifiers varies from language to language (see Grinevald, 2005). In Mandarin there is a relatively large set of sortal classifiers and mensural classifiers form an open class (see for instance Cheng and Sybesma, 1998: 403), while Mokilese offers a much smaller inventory of classifiers (Harrison and Albert, 1976: 95). There even exist numeral classifier languages in which one single sortal classifier is used (see the Western Armenian, Mi'gmaq and Hausa examples below).

## 10.2.2 Semantic approaches to numeral classifier insertion

Semantic approaches to classifier insertion usually assume that the semantics of numerals and nouns in classifier languages makes it impossible to combine them directly. The classifier can be seen as an element that forms a bridge between the numeral and the noun. One can distinguish two main types of semantic approaches to classifier insertion depending on whether the classifier is seen as an element that changes the denotation of numerals in such a way as to make them compatible with nouns, or as an element that modifies nouns in order to make them compatible with numerals (see in particular Krifka, 1995a).

Within the first type of approach, the classifier is inserted because the numeral needs the classifier in order to be compatible with nouns. Krifka (1995a) proposes that numerals in non-classifier languages incorporate an abstract unit of counting, which makes it possible to combine them directly with nouns. In numeral classifier languages, numerals lack such an abstract element. By adding a classifier to the numeral, a

denotation similar to the one of a numeral in a non-classifier language is obtained. Insertion of a sortal classifier thus makes the numeral compatible with the noun. Some recent evidence in favour of this type of
p. 224 approach is presented by Bale and Coon ↳ (2014). As they show on the basis of Mi'gmaq (Eastern Algonquian) and Chol (Mayan), there exist languages in which some numerals take classifiers while others do not.[5] Bale and Coon explain this by assuming that those numerals that can be directly combined with nouns include a default measure function, while the other type of numeral lacks this meaning component and depends on the insertion of a classifier.

The second type of approach takes classifiers to be elements that are inserted because the meaning of the noun needs to be altered in order to make it compatible with a numeral. This type of approach is adopted by Chierchia (1998a) who assumes that all nouns in Mandarin as well as mass nouns in number-marking languages correspond to number-neutral predicates rather than to singular or plural predicates. For instance, the predicate *píngguǒ* 'apple' corresponds to a set containing both singular apples (atoms) and the pluralities that can be formed on the basis of these apples. Chierchia assumes that this type of structure does not permit us to single out the atoms, and that this is the reason why they cannot be directly modified by numerals. The classifier or measure word turns the number-neutral predicate into a singular predicate (a set of atoms), which is compatible with the numeral.[6] For count nouns in number-marking languages, Chierchia assumes that the lexical entry singles out the set of atoms, which makes them directly compatible with numerals (1998a: 71). The assumption that classifiers select nouns and that the noun–classifier complex is in turn modified by a numeral is often made in syntactic approaches to classifiers as well (see for instance Cheng and Sybesma, 1999; Borer, 2005). Borer's theory will be treated in more detail in the next section, which focuses on the relation between number marking and classifiers.

Note that it is rather difficult to provide conclusive semantic arguments in favour of one type of approach or the other. Take for instance the type of pattern discussed by Bale and Coon, which they argue to be evidence in favour of the first type of approach. If in one and the same language some numerals combine with nouns directly while others trigger the insertion of a classifier, it is clear that there are two types of numerals in the language. However, this does not necessarily imply that the classifier changes the meaning of the numeral rather than the meaning of the noun; it could also be the case, for instance, that one type of numeral needs a noun with a singular denotation while the other requires the noun to have a number-neutral denotation. In this scenario, the role of the classifier could be to turn a number-neutral noun into a noun with a singular denotation and this would explain the different behaviour of the two sets of numerals as well. This example illustrates the difficulty of establishing the meaning component that is added by the
p. 225 classifier, the main problem being that there is currently ↳ no consensus about what types of meanings numerals and nouns can have cross-linguistically (see also this volume, Chapter 4).

## 10.3 The sanches–greenberg–slobin generalizations: classifiers and number marking on nouns

### 10.3.1 Empirical generalizations

Two well-known generalizations on the relation between numeral classifiers and number have been formulated in Sanches (1971), Sanches and Slobin (1973) and (Greenberg, 1972). This section will discuss these generalizations both from an empirical and a theoretical point of view.

Sanches (1971), cited in Greenberg (1972: 17), states that '[i]f a language includes in its basic mode of forming quantitative expressions numeral classifiers, then…it will not have obligatory marking of the plural on nouns'. Moreover, she assumes that classified nouns are singulars (for both generalizations, see also Sanches and Slobin, 1973). Greenberg (1972: 18) takes over the first generalization and reinterprets the

second by the claim that classified nouns are normally not morphologically marked for number. In other words, the noun that is combined with a classifier is neither a singular nor a plural. Given this, the second generalization could be an explanation of the first: if numeral classifiers typically combine with nouns that are not marked for number, systematic use of numeral classifiers is not expected in languages with a grammatical, obligatory singular–plural opposition, as these languages would simply lack the type of nouns needed in the context of the classifier.

It is important to realize that the Sanches–Greenberg–Slobin generalizations express a rather weak relation between number marking on the one hand and the occurrence of numeral classifiers on the other. The first generalization is about languages with obligatory classifiers and obligatory number marking only. Western Armenian, in which morphological number marking on nouns is optional in indefinite noun phrases and obligatory in definite noun phrases, permits the use of an optional (sortal) classifier in the context of numerals (Borer, 2005, Bale and Khanjian, 2014):

(5)

| | | | | | |
|---|---|---|---|---|---|
| a. | Yergu | (had) | hovanoc | uni-m. | (Western Armenian) |
| | two | (CL) | umbrella | have-1SG | |
| b. | Yergu | (*had) | hovanoc-ner | uni-m. | |
| | two | (*CL) | umbrella-s | have-1SG | (adapted from Borer, 2005: 94, (6)) |

The example in (5a) also illustrates that the absence of number marking does not necessarily imply the
p. 226 presence of a classifier (see Gil, 2005; Wilhelm, 2008; Chierchia, 2010; ↳ Doetjes, 2012). Finally, the example in (5b) shows that the classifier is incompatible with plural marking on the noun, in line with the second generalization.

The example in (5b) contrasts with the following example from Yucatec Maya:

(6)

| | | | |
|---|---|---|---|
| oš | tul | maak(oob) | (Yucatec Maya) |
| three | CL$^{animate}$ | person(s) | |
| 'three persons' | | | (adapted from Allan, 1977: 294, (34), (35)) |

According to the analysis proposed by Butler (this volume, Chapter 23), the plural morpheme is cliticized at a higher level in the extended projection of the noun rather than functioning as an inflectional plural morpheme on the noun. Following this analysis, *-oob* occurs outside of the scope of the numeral and is as such irrelevant for the second generalization.

The case of Hausa (Chadic) is different in this respect. Hausa is similar to Western Armenian in the sense that there is one sortal classifier (*gùdaa*) which is optionally inserted when numerals combine with nouns that have a count interpretation. However, contrary to Western Armenian, Hausa permits the use of plural marked nouns in combination with this classifier. Contrary to the plural marker in Yucatec, the plural marker in Hausa is a morpheme on the noun. Both singular and plural nouns can be used in combination with the classifier, as shown in (7).

(7)

| | | | | |
|---|---|---|---|---|
| a. | kujèeraa | gùdaa | huɗu | (Hausa) |
| | chair.SG | unit | four | |
| b. | kùjèeruu | gùdaa | huɗu | |
| | chair.PL | unit | four | |
| | 'four chairs' | | | (Zimmermann, 2008: 432, fn. 10) |

Newman (2000: 382) reports that, according to Jaggar (p.c.), the use of the plural is required in this context, implying that (7a) is not acceptable in all variants of the language.

Mi'gmaq (Eastern Algonquian) is another example of a language where plurals may be obligatory in the context of classifiers (Bale and Coon, 2014). Like Hausa, Mi'gmaq only makes use of a single classifier. The insertion of this classifier (*te's*) is required in combination with numerals above five and excluded in combination with numerals up to five. The number marker is obligatorily present on animate nouns, as illustrated in (8):

(8)

| | | | |
|---|---|---|---|
| asugom | te's-ijig | ji'nm-ug | (Mi'gmaq) |
| six | CL-AGR | man-PL | |
| 'six men' | | | (Bale and Coon, 2014: 700, (12b)) |

Bale and Coon point out that the plural marker *-ug* also occurs on adjectives and verbs and suggest that its status might be different from the one of the plural marker in number-marking languages such as English.

p. 227 The possibility of having plural markers in the context of a classifier is not in contradiction with the first Sanches–Greenberg–Slobin generalization, given that the generalization only makes a claim about languages in which numeral classifiers and number marking on nouns are both obligatory (see Doetjes, 2012 for discussion). In Yucatec Maya, the (optional) number is not located on the noun, while in Hausa the classifier is optional. Mi'gmaq comes closest to a system that makes obligatory use of both classifiers and number marking on nouns, but note that number marking is only present on animate nouns, and the single sortal classifier the language disposes of is used with some numerals and not with others. There do not seem to be examples of languages with both obligatory insertion of numeral classifiers for all numerals and obligatory number marking on all nouns, in accordance with the first generalization. On the other hand, both Mi'gmaq and Hausa are exceptions to the second generalization, according to which classifiers normally combine with nouns that are not marked for number (Greenberg's version).

Given that plural nouns are sometimes compatible with classifiers, the question arises whether the same is true for singular nouns. Even though the condition is phrased in morphological terms, the reason for Greenberg to deviate from the original formulation seems to be that he assumes that classifiers typically occur on nouns that are neither singular nor plural. Even though it is not always clear what tests can be used for singularity, one may observe that if a noun without plural marking combines with a classifier, there is usually independent evidence that the noun does not have a singular denotation.

To illustrate this, let us return to the example of Hausa, a language in which number marking is in many contexts obligatory and where classifiers can be found in the context of singular nouns (see example (7a)). At first sight, this is a language where the absence of plural marking may well correlate with a singular interpretation of the noun (i.e. a set of atoms). However, there are reasons to assume that singular count nouns in Hausa denote number-neutral predicates (sets that contain both atomic and plural individuals) rather than sets of atoms, based on their compatibility with quantity expressions (see also Zimmermann, 2008). As illustrated in (9), the quantity expression *dà yawàa* 'much/many' is compatible with singular and with plural nouns (see also Newman, 2000):

(9)

| | | | |
|---|---|---|---|
| yaaròo/ | yâraa | dà yawàa | (Hausa) |
| boy/ | boys | with many | |
| 'many boys' | | | (Součková, 2011: 86, (24b)) |

The compatibility of *yaaròo* and the modifier *dà yawàa* raises the question whether the morphologically singular noun *yaaròo* is semantically singular or rather semantically number neutral. Cross-linguistically, modifiers such as *dà yawàa* 'much/many' typically combine with plurals and mass nouns or with number-neutral nouns and mass nouns, but they normally do not occur with semantically singular nouns (see this volume, Chapter 4). Based on the properties of the modifier, the use of the singular ↳ form *yaaròo* 'boy' with *dà yawàa* 'much/many' in (9) strongly suggests that *yaaròo* denotes a number-neutral predicate rather than a singular predicate. As far as I am aware, nouns that can combine with classifiers or measure words are also compatible with degree modifiers. This means that it may well be the case that non-plural count nouns that may occur with classifiers or measure words always have a number-neutral rather than a singular interpretation, in accordance with Greenberg's formulation of the second generalization (but see Sağ, 2017 for a different perspective).

p. 228

## 10.3.2 Theoretical implementations

The Sanches–Greenberg–Slobin generalizations are accounted for in different ways in the theoretical literature. As mentioned above, Chierchia (1998a) predicts that general systems of numeral classifiers occur in languages in which nouns are number-neutral rather than singular or plural predicates. Classifiers are inserted in order to make number-neutral nouns compatible with numerals, while nouns that show a singular–plural opposition do not require classifier insertion. Chierchia thus predicts the incompatibility of a general system of numeral classifiers and obligatory number marking on nouns, without making claims about languages in which optional classifier insertion and number marking are combined.

Within a syntactic approach, Borer (2005) assumes that classifiers and plural markers compete for the same position in the syntactic tree. This position is the head of a Classifier Phrase (ClP), which is the locus of the feature <DIV>, where DIV stands for *divider*. Both number markers and classifiers can be lexical instantiations of DIV, predicting their complementary distribution. This accounts not only for the first Sanches–Greenberg–Slobin generalization, but also for the Armenian pattern in (5). In (5b) the plural marker is the lexical instantiation of the divider, while in (5a) the classifier is. In order to explain the possibility to leave out the classifier *had* in (5a), Borer assumes that the numeral in Western Armenian optionally introduces the feature <DIV> and as such does not depend on the presence of either the plural marker or the classifier. This possibility can also account for languages such as Dëne Sųłiné, which lack both number and classifiers (Wilhelm, 2008).

Bale and Khanjian (2008) offer a semantic explanation for the pattern in (5). They argue that both classifiers and measure words only combine with expressions that denote complete semilattices (i.e. structures that include atoms as well as all possible sums of these atoms). This means that they can combine with inclusive plurals, while they are incompatible with exclusive (or strict) plurals which do not include atoms in their denotation (see this volume, Chapter 2, for discussion on the distinction between exclusive and inclusive plurality). Bale and Khanjian argue that plurals in Western Armenian are exclusive plurals. If classifiers only combine with inclusive plurals (that is, plurals that denote complete semilattices, and thus include the atoms), the incompatibility of the classifier and the plural noun in examples such as (5b) follows. ↳ The optionality of the classifier is accounted for by assuming that there exist two series of homophonous numerals one of which depends on a classifier in order to be compatible with nouns while the other is directly compatible with numerals. This would be similar to what is found in Chol, where two sets of (non-homophonous) numerals coexist, one of which takes classifiers while the other does not (Bale and Coon, 2014; see also the previous section). Note that the first Sanches–Greenberg–Slobin generalization remains unaccounted for in the approach of Bale and Khanjian: their assumptions do not exclude the possibility of a language with semantically singular nouns (that is, sets of atoms) and inclusive plurals (complete semilattices), in which all numerals need classifier insertion. In such a language, obligatory number marking on nouns and obligatory classifier insertion would co-occur, running counter to the first

p. 229

generalization. The Hausa data in (7) may present another problem for this account, given that Hausa has been claimed to have exclusive plurals (Zimmermann, 2008). Bale and Khanjian's analysis would therefore predict that Hausa plurals are incompatible with classifiers, contrary to fact. If the difference between Western Armenian and Hausa is looked at from the syntactic perspective of Borer (2005), one has to assume that the Hausa plurals do not target the same position as the classifier while the Western Armenian ones do.[7] Further research is necessary to explore under what conditions plural nouns can be combined with numeral classifiers.

To conclude, languages with systematic number marking on all nouns and a general and obligatory system of numeral classifiers do not seem to occur. Despite the existence of exceptional systems such as the one in Hausa, classifiers normally occur with nouns that are not marked for number. Whereas plural marking on nouns is not excluded in the context of classifiers, there is evidence that non-plural nouns that are found in the context of classifiers are number neutral rather than singular, but further research is necessary to confirm this.

## 10.4 Compulsory number marking in a numeral classifier language: the case of mokilese

### 10.4.1 Numeral classifiers and number marking in Mokilese

A system combining obligatory number marking and obligatory insertion of numeral classifiers can be
p. 230 illustrated on the basis of the Austronesian language Mokilese ↳ (Harrison and Albert, 1976). Number marking is absent on nouns, but it is obligatorily present on definite articles and demonstrative determiners and it is also expressed via classifiers on indefinite noun phrases. Moreover, the rich article system in the languages challenges the claim that numeral classifier languages typically lack definite and indefinite articles (Chierchia, 1998a, 2010).

Numeral classifiers in Mokilese are roots, which are prefixed by numerals. The examples below illustrate the use of three numeral classifier roots, *-w* CL$^{\text{general}}$, *-men* CL$^{\text{animate}}$, and *-pas* CL$^{\text{long object}}$ combined with the numeral prefixes *pah-* 'four' and *rah-* two:[8]

(10)

a. puk pahw (Mokilese)
puk pah-w
book four-CL$^{\text{general}}$
'four books'

b. amwje pahmen
amwje pah-men
mosquito four-CL$^{\text{animate}}$
'four mosquitos'

c. suhkoa rahpas
suhkoa rah-pas
tree two-CL$^{\text{long object}}$
'two trees' (adapted from Harrison and Albert, 1976: 93–5)

Obligatory number marking is independent of classifiers for definite noun phrases, and connected to the classifier system for indefinite noun phrases. In definite noun phrases, number is marked obligatorily on demonstratives and on the definite article, which are realized as suffixes on the noun. This is illustrated for the proximal demonstrative in (11):

(11)

| woalle | woalkai | (Mokilese) |
|---|---|---|
| woal-e | woal-kai | |
| man-DEM.SG | man-DEM.PL | |
| 'this man' | 'these men' | (adapted from Harrison and Albert, 1976: 78–9) |

In indefinite noun phrases, number is marked by means of classifiers (see also section 10.6). Singular indefinites are obtained by suffixation of a classifier. In the case of the general classifier *-w* it is still visible that the numeral for 'one' is present in the structure, suggesting that singularity originally comes from the numeral:

p. 231

(12)

a. pukkoaw (Mokilese)
puk-oa-w
book-one-CL$^{general}$
'a book'

b. koaulpas
koaul-pas
song-CL$^{longobject}$
'a song' (adapted from Harrison and Albert, 1976: 104)

Plural indefinites are formed by using the plural marker *-pwi*, which is incompatible with numerals. In indefinite noun phrases, *-pwi* is in complementary distribution with numeral classifiers, resulting in a singular plural opposition:

(13)

a. woalmen (Mokilese)
woal-men
man-CL$^{animate}$
'a man' (adapted from Harrison and Albert, 1976: 104)

b. woalpwi
woal-pwi
man-SOME
'(some) men' (adapted from Harrison and Albert, 1976: 75)

Definite and indefinite noun phrases are normally represented by nouns that are suffixed either by a definite or demonstrative determiner (definites) or by a classifier/the plural marker *-pwi*. In all these cases, the noun phrase as a whole is marked for number. In the example below, the noun *war* 'canoe' is marked as an indefinite by *-pas* 'CL$^{long\ object}$' in its first occurrence and by the singular definite marker *-wa* in its second occurrence:[9]

(14)

Arai poaloa **warpas**. Arai poaloahro peiddi **warwa**. (Mokilese)
'They chopped down a canoe hull. They kept chopping until the canoe hull was felled.'
**war-pas**: canoe-CL$^{longobject}$ 'a canoe'; **war-wa**: canoe-DEF.SG 'the canoe'
(adapted from Harrison and Albert, 1976: 77)

Bare nouns, which lack number marking, are limited in use. They are found in generic sentences and in the
p. 232 context of contrast and in a few other constructions, but not in ↳ definite and indefinite noun phrases; see

Harrison and Albert (1976: 72–4) for a detailed description of the contexts in which bare nouns are allowed.[10]

## 10.4.2 Theoretical consequences: Numeral classifiers and articles

Mokilese turns out to have a rather unexpected combination of properties in view of commonly adopted assumptions about numeral classifier languages. According to (Chierchia, 1998b, 2010), languages with numeral classifiers typically lack definite articles, and permit a definite reading for a bare noun. This is so, because in this type of language, the nouns themselves have argument status and can have a definite interpretation in the absence of an article (see also Dayal, 2004, for more elaborate discussion on why the definite reading is predicted to be available in this case).

Recently, this claim was challenged and adapted on the basis of data from the Sino-Tibetan language Yi, spoken in China (Jiang, 2018). In this language with obligatory numeral classifiers, definite noun phrases can be marked by a definite article. In this case, the classifier is present as well. Moreover, the bare noun can also have a definite meaning. Jiang claims that the fact that the definite article in Yi comes with a classifier is crucial: the classifier turns the kind-denoting noun into a predicate, and the determiner instantiates the iota operator, which turns the predicate again into an argument. In the absence of the classifier, the bare noun can have a definite reading and the use of the definite article is prohibited. Based on this, Jiang argues that definite determiners may occur in numeral classifier languages when the following two conditions are met: the bare noun can also be used with a definite interpretation (which she assumes to follow from the fact that the bare noun denotes a kind, see Dayal, 2004), and the definite article can only be used in combination with a classifier (the classifier turns the kind-denoting noun into a predicate, which can be turned into an argument by the definite article).

The data from Mokilese show that even Jiang's version of the generalization is too strong. First of all, the definite article in Mokilese does not trigger insertion of a numeral classifier. Moreover, the bare noun in Mokilese cannot have a definite interpretation in the absence of the definite marker (Harrison and Albert, 1976: 72–4, 76–7). An explanation for the properties of Mokilese could be that there are different types of classifier systems. As indicated in section 10.2, there are reasons to assume that, in some languages at least, classifiers may change the denotation of the numeral rather than the denotation of the noun. This might also be the case in Mokilese, where the numeral is prefixed on the classifier. In Jiang's analysis, the numeral
p. 233 classifier turns a kind-denoting noun into a predicate and this plays a crucial ↳ role in licensing the presence of the definite article. It is therefore plausible that the same generalization does not hold in classifier languages in which the classifier is combined with the numeral rather than with the noun. If this is on the right track, Jiang's conditions on definite articles only hold for a particular type of classifier system, namely one in which the classifier changes the denotation of the noun in order to make it compatible with a numeral, rather than to all numeral classifier languages.

Note however that articles are also often absent in languages without numeral classifiers (e.g. Slavic languages), as acknowledged by Chierchia (1998b). Given this, it could be the case that numeral classifier languages also vary in this respect, without there being a clear relation between the presence or lack of articles and different types of classifier systems. More research on genetically unrelated numeral classifier languages is necessary in order to gain further insight in the relation between numeral classifiers and articles.

## 10.5 Number-marked classifiers

### 10.5.1 Taba 'singular' and 'plural' classifiers

As shown in the previous sections, numeral classifier languages may have obligatory or optional number markers independently of the numeral classifier system. This section turns to a phenomenon that is much less studied, and discusses classifier systems in which the choice of the classifier depends on the number properties of the numeral; that is, it depends on whether the numeral for 'one' is used or a numeral corresponding to a number higher than 'one'. The phenomenon will be illustrated with data from Taba in the current subsection. The next two subsections turn to related phenomena in Ejagham (Niger–Congo, Watters, 1981) and Jacaltec (Mayan, Craig, 1986a).

Taba, an Austronesian language of Eastern Indonesia (Bowden, 2001), is an obligatory classifier language in which the choice of the classifier depends in certain cases on the number properties of the numeral. For nouns denoting humans or animals, the prefix *i-* is used with the numeral *so* 'one', while the numerals 2 to 9 require insertion of the proclitic *mat=* for human nouns and the proclitic *sis=* for nouns denoting animals (and a few other nouns).[11] In the original examples, both *i=* and *mat=* are glossed as CLASS. In the glosses below, a superscript is added to emphasize the fact that the choice between *i-* or *sis=* in these examples is not related to the noun (both nouns take the same classifiers) but to the choice of numeral and as a consequence to the number properties of the noun phrase as a whole.

p. 234

(15)

a. Not yan iso le (Taba)
n-ot yan i=so le
3SG-catch fish CL$^{human/animal}$=one only
'He only caught one fish.'

b. Galala sishot da
galala sis=hot da
cockatoo CL$^{animal}$=four DISTAL
'Those four cockatoos.' (adapted from Bowden, 2001: 257, (66), (67))

These examples show that the form of the classifier may reflect number properties of the numeral. Number marking on numeral classifiers as illustrated for Taba resembles to a certain degree number marking on measure words and unit markers such as *kilo* and *piece* in English, as in *two pieces of furniture*. However, measure words in English are not part of a numeral classifier system and plural marking is also present on ordinary nouns, as in *two chairs*. The difference between the two types of phenomena will be further illustrated on the basis of Ejagham in the next subsection.

### 10.5.2 Number marking on unit markers: the case of Ejagham

Ejagham, a Niger–Congo language spoken in Cameroon and Nigeria is described by Watters (1981) as a language in which part of the lexicon obligatorily takes numeral classifiers. Most nouns, however, combine directly with numerals, in which case they are marked for number by means of a noun class system: singular and plural nouns in the language belong to different noun classes, which determine their agreement properties (for a detailed discussion of number marking by means of noun class systems in Bantu, see Chapter 26 in this volume). This is illustrated in (16), where 1 and 2 refer to the noun classes 1 and 2 respectively, the noun classes that yield a singular–plural opposition for the noun *nɛ̀* 'person':

(16)

a. Ǹ-nɛ̀ yɔ́-d (Ejagham)
1-person 1-one
'one person' (Watters, 1981: 469, (33a))

b. à- nɛ̀ á- bá'ɛ́
2-person 2-two
'two persons' (Watters, 1981: 471, (35a))

A rather large class of nouns only falls in a single noun class, and these nouns cannot directly combine with
p. 235 numerals. Watters distinguishes five different classifiers, some of ↳ which can also be used as independent nouns. These are obligatorily marked for a singular or plural depending on whether the numeral corresponds to 'one' or a higher numeral. As in the case of other nouns, this is done by means of the noun class system. The classifier used in the examples in (17), which is used for round or clustered fruits and roots, belongs to noun class 5 if it is singular and to noun class 9 if it is plural, GN is a genitive linker. As the examples show, the choice of the singular or the plural noun class depends on the numeral, and the numeral agrees in noun class with the classifier. The numeral for 'one' takes agreement corresponding to the singular form of the classifier *ɛ̀-rə́m* (class 5), and the numeral for 'two' takes agreement corresponding to the plural form of the classifier *Ǹ-də́m* (class 9) (glosses are added based on information in the grammar):

(17)

a. ɛ̀-rə́m ' í-čɔ́kùd jə́-d (Ejagham)
5-CL$^{\text{round/clustered fruit/root}}$GN 19-orange 5-one
'one orange'

b. Ǹ-də́m ' í-čɔ́kùd ɛ́-bá'ɛ́
9-CL$^{\text{round/clustered fruit/root}}$GN 19-orange 9-two
'two oranges' (adapted from Watters, 1981: 311, (123a))

Even though at first sight, these examples resemble the Taba examples in (15), the singular–plural opposition illustrated in (17) is more similar to number marking on unit markers such as *piece* in English. First of all, Ejagham is a language in which numerals normally directly combine with the noun. The structure illustrated in (17) is only found for a subset of nouns. Second, the way in which the elements that are called classifiers in (17) are marked for number is the same in which nouns are normally marked for number in the language, as illustrated in (16), and, as indicated by Watters, they function as the head of the noun phrase as evidenced by the agreement on the numerals in (17) (Watters, 1981: 310). In this respect, the classifiers of Ejagham are similar to unit markers such as *piece* in *piece(s) of furniture* in English (see also Doetjes, 2012). The particular property of Ejagham seems to be that it disposes of a relatively large class of nouns with a countable meaning that are members of a single noun class and as such lack a singular–plural opposition. Unlike other nouns with a count interpretation, these nouns cannot directly combine with numerals, and behave in that respect as collective mass nouns in languages such as English (e.g. *furniture*).

### 10.5.3 Jacaltec

The complex system of classification in the Mayan language Jacaltec combines several types of number marking (Craig, 1986a,b, 1992). In the context of numerals other than the numeral for 'one', several layers of classifying elements are present. The example in (18) is from Craig (1986b: 265) and illustrates the
p. 236 complex system of noun ↳ classification as used in the context of numerals higher than 'one'. The leftmost element, cliticizing on the numeral, is called a NUMBER CLASSIFIER (NB_CL).[12] There are three of them, expressing the categories human, animal, and inanimate. These elements are obligatorily suffixed on numerals other than the numeral for 'one'. According to Craig (1986a: 244), they constitute a 'morphologized system of what in other languages would be numeral classifiers'. The number classifier is followed by a second classifier-like element, which is called a PLURAL CLASSIFIER (PL_CL). In addition to number, this second element also expresses a form of classification: *heb'* is obligatorily inserted with human nouns (18b) and *hej* is optionally inserted with other animate nouns (18c). When the noun is inanimate, this element is absent (18d). The next element is a NOUN CLASSIFIER (N_CL). Contrary to the number classifiers, which only occur with numerals, plural classifiers and noun classifiers are also used in the absence of numerals. Noun classifiers (possibly preceded by a plural classifier) can also function as pronouns and mark definiteness and/or salience of the referent of the noun phrase in the following discourse (Craig, 1986a: 269–73, see also section 10.6).

(18)

| | NUM+NB_CL | PL_CL | N_CL | NOUN | (Jacaltec) |
|---|---|---|---|---|---|
| b. | ca-wañ | heb' | naj | winaj | |
| | 2-NB_CL$^{human}$ | PL_CL$^{human}$ | N_CL$^{man}$ | man | |
| | 'the two men' | | | | |
| c. | ca-c'oñ | (hej) | no7 | nok' | |
| | 2-NB_CL$^{animal}$ | PL_CL$^{animal}$ | N_CL$^{animal}$ | animal | |
| | 'the two animals' | | | | |
| d. | ca-b' | Ø | te7 | ñah | |
| | 2-NB_CL$^{inanimate}$ | | N_CL$^{plant}$ | house | |
| | 'the two houses' | | | | |

(adapted from Craig, 1986b: 265, (4), 1986a: 246, (2))

The pattern discussed for the numeral *ca* 'two' applies to higher numerals, but not to the numeral for 'one', *hune7* 'one, a', which behaves in a very different way.[13] Both the number classifier and the plural classifier are absent, whereas the noun classifier is optional, as illustrated in the examples below (Craig, 1986a):

p. 237 (19)

a. (...) scawilal tu7 xil naj hune7 hach'en tz'ulik (...) (Jacaltec)
near there saw he INDEF cave small
'(...) near there he saw a cave that was small (...)'
(Craig, 1986a: 271, (24))

b. xinlok' hune7 no7 txitam bak'ich tu7 yiñ k'iñ
I bought INDEF N_CL$^{animal}$ pig fat DEM for fiesta
yaj xcam no7 ewi
but died PRO$^{animal}$ yesterday
'I bought that big fat pig for the fiesta, but it died yesterday.'
(Craig, 1986a: 273, (26a))

The presence of the noun classifier in the latter example is related to the discourse salience of the referent of the noun phrase in the following discourse, an effect that is also found for noun classifiers when used in the absence of numerals (Craig, 1986a: 271); I will come back to this in the next section.

The plural classifier in Jacaltec is similar to the English plural marker in the sense that it is not only used with numerals. At the same time, the number classifier is typically inserted with numerals other than 'one', in which respect it resembles 'plural' numeral classifiers in Taba (proclitic *mat=* for human nouns and the proclitic *sis=* for nouns denoting animals) which are also incompatible with the numeral for 'one'.

## 10.6 Marking a singular–plural opposition by means of classifiers

A final phenomenon that relates classifiers to number marking is the derivation of a singular–plural opposition by means of classifiers. As shown in section 10.4, singular indefinites in Mokilese are marked by a classifier which in one case still bears traces of the presence of the numeral for 'one' while in plural indefinites, this same position is occupied by the plural marker *-pwi* (see (12) and (13)). In Mandarin a similar phenomenon can be found. Singular indefinites can be realized as a classifier followed by a noun, as illustrated in (20). Plurality is expressed by the element *xiē* (cf. Mokilese *-pwi*), which is incompatible with numerals higher than one and which is sometimes called a plural classifier (see Iljic, 1994 for a different point of view, Cheng et al., 2012 for discussion). The numeral *yī* 'one' being optional, it may be the case that the pattern in Mokilese and this pattern have a similar origin.

(20)

a. (yī) ge rén (Mandarin)
(one) CL$^{general}$ person
'a person'

b. (yī) xiē rén
(one) PL person
'people, some persons'

c. *sān xiē rén
three PL person

p. 238 Even though at first sight the singular interpretation of (20a) might be attributed to the presence of a silent numeral *yī* 'one', Cheng and Sybesma (1999, 2005) argue against this idea on the basis of the observation that the form that includes *yī* 'one' has a wider distribution; *yī ge rén* can have a specific indefinite interpretation, whereas *ge rén* only functions as a weak indefinite. Moreover, the idea that the singularity comes from the presence of an empty numeral cannot be extended to Cantonese, where the combination of a sortal classifier and a noun also results in a singular interpretation. Besides an indefinite meaning, CL-N can also have a definite interpretation (Cheng and Sybesma, 2005). The definite reading is not available in the presence of *yat*$^{1}$ 'one'. Postulating an empty *yat*$^{1}$ is thus not an option in these cases.[14]

(21)

a. ngo$^{5}$ soeng$^{2}$ tai$^{2}$ bun$^{2}$ syu$^{1}$ (Cantonese)
I want read CL book
'I would like to read a/the book.' (Doetjes, 2017b: 249, (7b))

b. zek$^{3}$ gau$^{2}$ soeng$^{2}$ gwo$^{3}$ maa$^{5}$lou$^{6}$
CL dog want cross road
'The dog wants to cross the road.'
(adapted from Cheng and Sybesma, 2005: 270, (24c))

c. Wu$^{4}$fei$^{1}$ jam$^{2}$-jyun$^{4}$ wun$^{2}$ tong$^{1}$ la$^{1}$
Wufei drink-finish CL$^{bowl}$ soup SFP
'Wufei finished drinking the (bowl of) soup.'
(adapted from Cheng and Sybesma, 2005: 270, (24b))

A plural interpretation can be obtained by replacing the sortal classifier (*bun*[2] in (21a) and *zek*[3] in (21b)) by *di*[1] '$_{CL}$[some]':

(22)

a. ngo[5] soeng[2] tai[2] di[1] syu[1] (Cantonese)
I want read CL[some] book
'I would like to read some books/the books.'

b. di[1] gau[2] soeng[2] gwo[3] maa[5]lou[6]
CL[some] dog want cross road
'The dogs want to cross the road.' (adapted from Doetjes, 2017b: 249, (9))

Even though *di*[1], which is often glossed as a plural classifier, triggers a plural interpretation in this example, it can be shown not to be a real plural marker, which is why it is glossed here as CL[some]. In the context of a
p. 239 noun with a mass meaning such as *tong*[1] ↳ 'soup' in (21c), replacing the mensural classifier *wun*[2] '$_{CL}$[bowl]' by *di*[1] results in a definite mass reading, as in (23).

(23)

Wu[4]fei[1] jam[2]-jyun[4] di[1] tong[1] la[1] (Cantonese)
Wufei drink-finish CL[some] soup SFP
'Wufei finished drinking the soup.'
(Cantonese, adapted from Cheng and Sybesma, 2005: 270, (24b))

The example in (23b) shows that *di*[1] does not force a plural interpretation. In this respect, *di*[1] differs from its Mandarin counterpart *xiē* in (20c), which is typically used with nouns that have count reference (Iljic, 1994) and therefore can be seen as a kind of plural marker. In Cantonese, however, the plurality of noun phrases such as *di*[1]*gau*[2] 'the dogs, some dogs' in (22b) comes from the interplay between the countable meaning of *gau*[2] and the vague quantity interpretation of *di*[1].[15] The examples show, moreover, that even in numeral classifier languages, a distinction between count and mass nouns can be made, despite the fact that both need numeral classifiers in order to be combined with numerals (Doetjes, 2017b).

The phenomenon that classified nouns can be interpreted as definite singular noun phrases is not only attested in Cantonese but is also reported for the Indo-European language Bangla (Dayal, 2012a: 204). As indicated by Dayal, the definite reading in Bangla also affects the position of the classifier: the definite reading only obtains when the noun precedes the classifier, as in (24a), whereas the indefinite reading obtains when a classifier and a numeral precede the noun, as in (24b). In this case, the numeral must be present. Following Bhattacharya (1999), Dayal derives the word order in (24a) by movement of the NP to a higher position in the DP, which also triggers the definite interpretation.[16]

(24)

a. boi ʈa (Bangla)
book CL[general]
'the book'

b. *(ɛk) ʈa boi
one CL[general] book
'a/one book' (adapted from Dayal, 2012a: 204, (14))

p. 240 A plural definite is formed by replacing the sortal classifier *ʈa* by the plural classifier *-gulo*, which is glossed as CL$_G$ for general plural classifier (Dayal, 2014):

(25)

chatro-gulo aSbe (Bangla)
student-$CL_G$ will.come
'The students will come.' (Dayal, 2014: 59, (23a))

Returning to the examples in Jacaltec discussed in the previous section, definite interpretations may also be found for noun classifiers. As illustrated by Craig (1986a: 270) on the basis of a Jacaltec cooking recipe, the noun *ha7* 'water' is used in its first occurrence as a bare noun. After that, it occurs with a noun classifier, *ha7*, yielding *ha7 ha7*, which is glossed as 'the water'. In Jacaltec, plurality is not expressed for inanimate nouns, and by means of a plural classifier for human and animate nouns. As shown in (18), the plural classifier precedes the noun classifier.

The comparison between Jacaltec on the one hand and Bangla and Cantonese on the other is also interesting from the point of view of the distinction that is normally made between numeral classifiers as opposed to noun classifiers. The comparison shows that in some cases the distinction is hard to make. While the Jacaltec noun classifiers are obligatorily present in the context of numerals, the numeral classifiers in Bangla and Cantonese have a life outside of numeral phrases, where they behave in a similar way to noun classifiers.

This section discussed the use of numeral classifiers in the absence of numerals, where the combination of a numeral classifier and a noun results in a singular interpretation. In some cases, there is evidence for the presence of an empty numeral corresponding to 'one', but in others the classifier seems to have obtained a different status, and triggers a singular interpretation in the absence of a numeral. Plural interpretation is triggered by a special classifier-like item, which is usually in complementary distribution with the classifier. In Cantonese, this element ($di^1$) is comparable to quantity expressions such as *some* in the sense that it only triggers a plural interpretation in the context of a noun with a count interpretation but not in the context of a noun with a mass interpretation.

## 10.7 Conclusions

Numeral classifiers interact with number in various ways. A first type of interaction is related to the Sanches–Greenberg–Slobin generalizations. In accordance with the first generalization, there do not seem to be languages in which both numeral classifiers and plural markers on nouns are always obligatory in the context of numerals (but see the example of Mi'gmaq discussed by Bale and Coon, 2014, in which numerals above five require insertion of a classifier and number marking on the noun). As for the second
p. 241 generalization, which states that classified nouns are normally not marked for number, ↳ some languages permit or require plural marking on nouns in the context of numeral classifiers. Nevertheless, there seems to be a tendency to have nouns that are not marked for number in combination with classifiers, and there is some evidence that real singulars may well be incompatible with classifiers across languages. This actually follows from various approaches of classifier insertion: whereas some researchers assume that the classified noun denotes a kind, others assume they constitute number-neutral predicates. Under both types of proposals, singular-denoting nouns are not expected to combine with classifiers.

Numeral classifier languages may have rich systems of number marking without having number marking on nouns, as illustrated by data from Mokilese, an obligatory numeral classifier language with obligatory number marking on demonstrative, definite, and indefinite markers. As these markers are in most contexts obligatorily present, this language also sheds light on the relation between numeral classifiers and the expression of (in)definiteness.

In some cases, numeral classifiers themselves play a role in number marking: in Taba the classifiers for humans and for animals only co-occur with the numeral for 'one', while the 'plural' classifier for humans

and animals is used with higher numerals. In addition, in languages such as Cantonese, classifiers are used to express a singular–plural opposition in the absence of a numeral.

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## Notes

1 Following a common practice in the literature on numeral classifiers, I will use CL as a gloss for classifiers, rather than the Leipzig gloss CLF. Non-standard glosses are given in footnotes.

2 Some authors use the term classifier as a cover term for measure words, unit counters, and numeral classifiers; see for instance Rothstein (2017).

3 The opposite case, namely measure words in non-classifier languages that lack otherwise obligatory plural marking, also exists, as illustrated by *two head of cattle* in English (see, among many others, Doetjes, 1997; Klooster, 1972; Rothstein, 2010, 2017; Vos, 1999).

4 This is a property that relates classifiers to gender; see, among others, Fedden and Corbett (2017).

5 In Mi'gmaq, numerals above five require insertion of the general classifier *te's*. In Chol, two sets of numerals exist: numerals borrowed from Spanish do not take classifiers while the original Mayan numerals do. A similar pattern between two sets of numerals has been reported for Kadiwéu, a Waikurúan language spoken in South America, where numerals borrowed from Portuguese do not require classifiers, while native Kadiwéu numerals do (Sandalo and Michelioudakis, 2016).

6 Chierchia (2010) assumes that classifiers turn kind-denoting nouns into predicates in order to make them compatible with numerals; see also Scontras (2014). See Ionin and Matushansky (2006) for a semantic analysis of numerals in which the complement of the numeral is a singular predicate.

7 Proposals along these lines have been made for plurals based on singulatives by Mathieu (2012a) and Ouwayda (2014) (see also, Chapter 13 in this volume).

8 Harrison and Albert (1976) often only give the full examples and their translations; in the examples used in this chapter morpheme boundaries and glosses have been added, based on the descriptions thereof in the grammar.

9 The obligatory use of definite and indefinite determiners in Mokilese is reminiscent of standard French, in which number marking is expressed on the determiner (singular *le/la* vs. plural *les* for definites and singular *un/une* vs. plural *des* for indefinites).

10 Based on the available data, neither the possibility of a kind denotation nor that of a predicate denotation for the bare noun can be excluded. See also this volume, Chapter 9.

11 The system for numerals above nine is more complex, due to the fact that the numeral corresponding to 'ten' behaves in certain respects as a classifier itself. The form of this classifier is different for animals (*beit*) and for other nouns (*yo*). In the context of human nouns, the classifier *mat=* is combined with *yo*. With numerals between two and nine, an additional plural marker is used for human nouns. For further details, see Bowden (2001: s. 10.3).

12 Craig (1986b: 246) discusses the same examples but uses a slightly different terminology: the number classifier and the plural classifier are called *number class* and *plural class* respectively.

13 The distribution of number classifiers in Jacaltec could be compared to systems as the one in Mi'gmaq in which classifiers are obligatorily inserted with numerals above five and absent with numerals up to five (Bale and Coon, 2014). Bale and Coon ascribe this difference to semantic properties of the two types of numerals (see section 10.2). This type of analysis could also explain the difference between *hune7* 'a, one' and other numerals in Jacaltec. The Taba data cannot be accounted for in a similar way, as all numerals require classifier insertion.

14 The possible readings depend on the position of the noun phrase and the type of verb phrase; see Cheng and Sybesma (1999, 2005).

15 The existence of (21a–b) might play a role in excluding a singular interpretation for examples such as the ones in (22).

16 According to Bhattarcharya (1999), the reading of examples such as (24a) is specific rather than definite. Based on a number of tests Dayal (2012a) shows that postnominal classifiers introduce a definite rather than a specific interpretation.