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Marc Allasonnière-Tang, Marcin Kilarski

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## FUNCTIONS OF GENDER AND NUMERAL CLASSIFIERS IN NEPALI

MARC ALLASSONNIÈRE-TANG  
*CNRS/University of Lyon*  
*marc.tang@univ-lyon2.fr*

MARCIN KILARSKI  
*Adam Mickiewicz University, Poznań*  
*kilarski@amu.edu.pl*

### ABSTRACT

We examine the complex nominal classification system in Nepali (Indo-European, Indic), a language spoken at the intersection of the Indo-European and Sino-Tibetan language families, which are usually associated with prototypical examples of grammatical gender and numeral classifiers, respectively. In a typologically rare pattern, Nepali possesses two gender systems based on the human/non-human and masculine/feminine oppositions, in addition to which it has also developed an inventory of at least ten numeral classifiers as a result of contact with neighbouring Sino-Tibetan languages. Based on an analysis of the lexical and discourse functions of the three systems, we show that their functional contribution involves a largely complementary distribution of workload with respect to individual functions as well as the type of categorized nouns and referents. The study thus contributes to the ongoing discussions concerning the typology and functions of nominal classification as well as the effects of long-term language contact on language structure.

KEYWORDS: Nepali; grammatical gender; numeral classifiers; functional typology.

### 1. Introduction

Nominal classification systems such as gender<sup>1</sup> in Indo-European languages and numeral classifiers in Mandarin Chinese have attracted considerable interest since they provide an insight into the complex patterns of categorization in language and the functions of lexical and grammatical phenomena. Following the morphosyntactically-oriented typologies proposed by Aikhenvald (2000a) and Grinevald (2000, 2004), more recent approaches have fo-

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<sup>1</sup> We use the term “gender” as a cover term for systems of nominal classification characterized by agreement, following, e.g., Corbett (1991).

cused on such issues as identifying functions that are either shared by diverse classification systems or depend on the means of expression (Contini-Morava & Kilarski 2013), establishing canonical morphosyntactic properties of nominal classification systems (Corbett & Fedden 2016) as well as identifying semantic and morphosyntactic properties of co-existing nominal classification systems (Fedden & Corbett 2017). In this paper, we contribute to the ongoing discussion by examining the concurrent nominal classification systems in Nepali (Indo-European, Indic), in which two grammatical gender systems co-occur with a system of numeral classifiers. We adopt the functional typology proposed by Contini-Morava & Kilarski (2013) to investigate the lexical and discourse functions of the three systems. The basic premise is that if nominal classification systems co-occur, they are likely to have different functions. In addition, if different types of classification are exploited for the same type of function, this is expected to happen with respect to different types of nouns and referents. As a consequence, in both cases we deal with a complementary distribution of functions.

In particular, this paper makes two major contributions. First, we propose a framework for a functional analysis of a complex nominal classification system involving co-existing gender and numeral classifiers. The co-occurrence of these systems creates a “patchwork” of semantic and morphosyntactic properties, raising several questions concerning their functional contribution. How do the three systems of nominal classification contribute to the expression of functions such as anaphora, deixis and disambiguation of referents? Is it the case that the workload is distributed among them, either with or without overlap in terms of the type of nouns and referents that are classified? If this is not the case, is only one type of classification markers employed for a specific function? We suggest that both situations can be observed in Nepali, the primary requirement being that the three nominal classification systems do not overlap in terms of functions or classified noun types.

Second, since the research on complex nominal classification systems has primarily dealt with the languages of Melanesia and the Americas,<sup>2</sup> the aim of this paper is to include languages from South Asia in the discussion of complex systems. The main motivation for this is that the former primarily illustrate the co-existence of different types of classifiers, which is “by far the most frequent case” (Aikhenvald 2000a: 185), as illustrated by, e.g., noun and numeral classifiers found in Akatek (Mayan) (Zavala 2000). A number of

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<sup>2</sup> See descriptions of, e.g., Mian (Papuan) (Fedden 2011; Corbett et al. 2017); Miraña (Witotoan) (Seifart 2005) and Tariana (Arawakan) (Aikhenvald 2000b, 2003).

studies have also focused on transitional gender systems, which are expressed by both free and affixed markers, as in Ngan'gityemerri (Australian) (Reid 1997). In contrast, in South Asia the case is more likely to be that of a gender system co-occurring with numeral classifiers, as in Nepali as well as, e.g., Pnar, an Austroasiatic language of Northern India (Ring 2015). As mentioned above, the co-occurrence of these two types of semantically and morphosyntactically distinct systems raises questions concerning their functional contribution and has further implications for such phenomena as the effects of language contact on grammatical structure.

The paper is structured as follows. By way of introduction, in §2 we present a brief overview of the distribution of gender and numeral classifiers in South Asia, focusing on the languages of Nepal. §3 includes a description of semantic and morphosyntactic properties of the nominal classification systems in Nepali as well as the sources of data used in this study. Then in §4 we examine the lexical and discourse functions of gender and numeral classifiers in Nepali, and in §5 we summarize the functional contribution of both types of systems. Conclusions are given in §6.

## 2. Nominal classification systems in South Asia

Grammatical gender and numeral classifiers constitute the most common types of nominal classification. Gender systems are mainly attested in Europe, Africa and South Asia, and also without a continuous distribution in Australia, Oceania and the Americas (Corbett 2013). On the other hand, numeral classifiers are concentrated in a single zone in East and South Asia, reaching out both westward and eastward through the Indonesian archipelago and then into the Pacific, with more isolated cases attested in the Americas (Nichols 1992: 132–133; Gil 2013). The two types of systems tend not to co-occur, as illustrated by the data in the *World atlas of language structures* (Corbett 2013; Gil 2013). Only four points in the two datasets represent languages with both gender and classifiers, i.e., Khmu' (Austro-Asiatic), Maybrat (West Papuan), Tidore (West Papuan) and Nicobarese (Car) (Austro-Asiatic).<sup>3</sup>

This largely complementary distribution of gender and numeral classifiers was analysed statistically in Sinnemäki (2019), where a weighted survey

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<sup>3</sup> Khmu' combines a pronominal gender system with obligatory classifiers, while Maybrat, Tidore and Nicobarese (Car) possess pronominal gender systems and optional classifiers.

of 360 languages showed that only a minority of the languages (22, i.e., 6%) have both types of systems. The survey demonstrated an inverse relationship between the two systems that is independent of areal and genetic factors. Sinnemäki further interpreted the relationship in terms of a complexity trade-off and a probabilistic universal. Further developing this observation, we attribute this distribution to the complementary nature of the functions of the two systems, as illustrated in more detail below based on data from Nepali.

As regards the language situation in Nepal, Indo-Aryan (Indo-European) languages are mainly spoken in the south-western part of Nepal and along the southern border with India, while Tibeto-Burman (Sino-Tibetan) languages are spoken in the north-east of Nepal and along the northern border with China. The main languages spoken in Nepal and their classification are given in Table 1, based on data from UNESCO, the Central Bureau of Statistics of Nepal (Toba et al. 2005) and our own database.<sup>4</sup>

Table 1. The languages of Nepal.

Language	Language group	Population	Gender	Numeral classifiers
Nepali	Indo-Aryan	11000000	yes	restricted
Maithili	Indo-Aryan	2798000	restricted	restricted
Bhojpuri	Indo-Aryan	1713000	yes	restricted
Tamang	Tibeto-Burman	1179000	no	restricted
Newari	Tibeto-Burman	825000	no	yes
Magar	Tibeto-Burman	770000	no	lost
Tharu	Tibeto-Burman	728000	yes	no
Awadhi	Indo-Aryan	561000	restricted	yes
Gurung	Tibeto-Burman	339000	no	restricted
Limbu	Tibeto-Burman	334000	restricted	lost

<sup>4</sup> The database is based on collected works on the languages spoken in Nepal, including the following languages: Awadhi (Barz & Diller 1985: 161; Pitale & Sarma 2013: 100), Bhojpuri (Verma 2007), Gurung (Nakkeerar 2009), Limbu (Van Driem 1987), Magar (Noonan 2003: 77), Maithili (Yadav 1996), Newari (Kiryu 2009), Tamang (Lee 2011) and Tharu (Chaudhary 2013), as well as works on Nepali cited elsewhere in this paper.

Another aspect of the complex linguistic situation in Nepal involves the variation found in the use of Nepali. As pointed out by Riccardi (2003: 539–543), as the official language, Nepali is not only the most frequently spoken language in Nepal but is also present in the surrounding areas of Bengal, Sikkim and Bhutan. This results in a superficial knowledge of the language among second language speakers due to the use of Nepali as a lingua franca. For example, even in the capital Kathmandu, where Nepali is used in government matters, commerce and communication, the Tibeto-Burman language Newari has also had a long literary tradition, thus resulting in influence on Nepali. Similarly, in the Darjeeling area, Nepali is spoken alongside Bengali and Tibetan. Although both areas are acknowledged as literary centres of Nepali, even there Nepali has been subject to influence from other languages. Such influence is also considerable in other regions of Nepal where different Nepali dialects are predominant, e.g. Baitadi, Doti, Gorkha in western Nepal and Darjeeling-Kalimpong to the east.<sup>5</sup>

The variation in the use of the languages of Nepal is reflected in the status of gender and numeral classifiers. Generally speaking, gender is present in most Indo-European languages of Nepal. However, due to intense contact with Tibeto-Burman languages lacking this category, in some languages gender agreement is realized less consistently (Weidert 1984: 205; Barz & Diller 1985). For example, gender agreement in modern Maithili only appears in certain tenses, e.g., the past tense and in formal registers (Yadav 1996: 63–64). As regards numeral classifiers, only Newari is attested to possess a rich numeral classifier system (Kiryu 2009), while the inventories of classifiers in most other languages are restricted. For example, Awadhi distinguishes five classifiers (Barz & Diller 1985: 162) and Bhojpuri has two (Verma 2007). Other languages such as Maithili (Yadav 1996: 76) and Tamangic languages are reported to have a classifier-like construction with numerals, but usually with only one classifier, as in Eastern Tamang *gor som jha* (CL three son) ‘three sons’ (Lee 2011: 32) and Manange <sup>4</sup>*ŋi-ŋtha kòla* (two-CL child) ‘two children’ (Hildebrandt 2004: 82).<sup>6</sup> These are generally considered to be imitations of classifiers of Nepali resulting from language contact. In general, numeral classifiers are not a typical Tibeto-Burman feature, except in

<sup>5</sup> It goes without saying that this brief overview does not account for more subtle differentiation found in the remaining languages. For example, further varieties of Tamang are distinguished both by the Glottolog (Hammarström et al. 2018) and the Ethnologue (Simons & Fennig 2018).

<sup>6</sup> The number ‘4’ in the example refers to tone 4. According to Hildebrandt (2004: 26), “... tone /4/ is mid-low in pitch with a falling contour, and includes all sonorant types and aspirated obstruents.”

branches in contact with Austro-Asiatic substrates such as Lolo-Burmese and Bodo-Garo (Scott DeLancey, p.c.). Numeral classifiers are also attested in the Qiang, Burmish and Jingpo branches of Tibeto-Burman (Fu 2015: 45–46).

As a summary, the languages of Nepal represent extremely interesting candidates for studies on nominal classification: due to their location at the junction of Indo-European and Sino-Tibetan families, gender and classifiers tend to be influenced by other structurally different languages, resulting in the loss or emergence of new systems.

### 3. Nominal classification systems in Nepali

While several descriptions are available of gender and numeral classifiers in Nepali, there is a striking lack of agreement as to the actual properties of the two types of systems. This concerns in particular the number of genders and numeral classifiers. For example, the number of genders stated in the literature varies between two (Clark 1977: 194; Acharya 1991: 99; Matthews 1998: 23–28; Poudel 2010), four (Manders 2007: 52) and eleven (Pokharel 2010: 40). In fact, some authors go as far as to claim that Nepali does not have grammatical gender; this is the state of affairs described in two standard works on nominal classification, i.e., Corbett's book on gender (Corbett 1991: 318) and Aikhenvald's book on nominal classification (Aikhenvald 2000a: 379) as well as, e.g., Priestly (1983: 345) and Riccardi (2003: 554). As regards numeral classifiers, the commonly attested inventory only includes two classifiers (human vs. non-human) (Clark 1977: 82; Acharya 1991: 100; Matthews 1998: 54; Riccardi 2003: 559–560). However, more recent descriptions suggest that the number of classifiers is actually much higher. For example, Pokharel (2010: 53) claims that Nepali has developed more than 200 numeral classifiers due to language contact with Sino-Tibetan and Austro-Asiatic languages. The discrepancy found in the literature on Nepali can be attributed to the areal variation mentioned above, i.e., different scholars may have described different local varieties of Nepali. As in the other languages of Nepal, there is considerable variation in the complexity and expression of both gender and numeral classifiers. In addition, as we show below, the discrepancy may be a consequence of different definitional criteria adopted in descriptions of both systems. In view of these issues, while there is a long tradition of research on the effects of language contact in South Asia on gender and numeral classifiers (see, e.g., Emeneau 1956; Priestly 1983;

Barz & Diller 1985), the status of both types of systems in Nepali is controversial and calls for further research.

In the following discussion we first present an overview of gender and numeral classifiers in Nepali, and then we compare the semantic and morphosyntactic properties of the two types of systems in Nepali with those in other languages with co-occurring gender and classifiers. Finally, we describe the sources of data in our study.

### 3.1. Genders

In this paper, we describe Nepali as a language that has grammatical gender. Saying that a language has, e.g., two gender values implies that there are two classes of nouns which can be distinguished morphosyntactically by the agreements that they take. As stated by Hockett (1958: 231), the defining characteristic of gender is agreement: a language has a gender system only if we find different agreements dependent on nouns of different genders (cf. also Corbett 1991: 146). In other words, there must be evidence for gender outside the nouns themselves and so the presence of lexical contrasts such as ‘brother’ vs. ‘sister’ does not by itself constitute a gender system. For instance, the two sentences in French in example (1) below have the same syntactic structure but the different genders of the nouns *livre* ‘book’ and *table* ‘table’ are reflected in the different forms of the demonstrative and the adjective. In contrast, Mandarin Chinese, which has lexical contrasts such as *nan2sheng1* ‘boy’ vs. *nü3sheng1* ‘girl’, does not have a gender system. As demonstrated in (2), neither the demonstrative nor the adjective show agreement with the subject. Instead, the nouns *shu1* ‘book’ and *zhuo1zi0* ‘table’ occur with different numeral classifiers, which are used between numerals/demonstratives and nouns.

(1) Use of gender in French

- (a) ce livre est très grand  
 this.M book(M) be.PRS.3SG very big.M  
 ‘This book is very big.’
- (b) cette table est très grande  
 this.F table(F) be.PRS.3SG very big.F  
 ‘This table is very big.’

## (2) Use of numeral classifiers in Mandarin Chinese

(a) zhe4 ben3 shu1 fei1chang2 da4  
 this CLF.VOLUME book very big  
 ‘This book is very big.’

(b) zhe4 zhang1 zhuo1zi0 fei1chang2 da4  
 this CLF.2D table very big  
 ‘This table is very big.’

According to the criteria discussed above, Nepali can thus be described as a language with grammatical gender. In the following we will first discuss gender assignment criteria, and then the expression of gender agreement in Nepali.

In terms of gender assignment, Nepali has semantic assignment involving two oppositions, i.e., masculine/feminine and human/non-human.<sup>7</sup> With regard to the masculine/feminine opposition, female humans and female animals are feminine, with the residue, i.e., male humans, male animates as well as inanimates assigned to the masculine gender. Accordingly, the contrast is that of feminine vs. the residue; however, we apply the terms “masculine” and “feminine” in line with traditional usage. The assignment of nouns denoting non-human animates depends on whether their natural gender is in focus, similarly to other gender languages such as French. Such nouns are treated as masculine when the speaker does not refer to the referent’s biological sex, while a feminine agreement form can be used to specify it, as in *thul-o parevaa* (big-M pigeon(M)) ‘big male pigeon’ or ‘big pigeon (of unknown or unspecified sex)’ vs. *thul-i poth-i parevaa* (big-F female-F pigeon(F)) ‘big female pigeon’.<sup>8</sup> The sex of an animal can also be expressed lexically, as in *mer-o ranga* (my-M male.buffalo(M)) ‘my male buffalo’ vs. *mer-i bhainsi* (my-F female.buffalo(F)) ‘my female buffalo’. In this case, different agreement forms are still distinguished, as seen in the possessives *mer-o* ‘my-M’ and *mer-i* ‘my-F’.

<sup>7</sup> We would like to thank Ellen Contini-Morava and the anonymous reviewers for their suggestions concerning the formulation of gender assignment rules in Nepali.

<sup>8</sup> While the female sex of the referent is indicated by the feminine form of the adjective *thul-i* (big-F) ‘big’, the speakers we have consulted stated that the adjective *pothi* ‘female’ would normally be used in this context.

Gender agreement based on the masculine/feminine opposition is found on adjectives, verbs, possessive adjectives and ordinal numbers (Acharya 1991: 99). In addition, as we show below, masculine/feminine gender agreement is also found on the general classifier. NP-internal agreement is illustrated in (3), where the adjective distinguishes between masculine and feminine forms.

- (3) Masculine and feminine genders in Nepali (Acharya 1991: 79, glosses modified)
- (a) ramr-o keto  
 beautiful-M boy(M)  
 ‘handsome boy’
- (b) ramr-i keti  
 beautiful-F girl(F)  
 ‘beautiful girl’

As also shown in these examples, the masculine/feminine gender of nouns in Nepali may occasionally be identified by suffixes, as in *keto* ‘boy’ vs. *keti* ‘girl’. However, this type of marking is described by Hardie et al. (2009: 178) as infrequent and not fully predictable; for example, several feminine nouns with a feminine suffix do not have masculine equivalents, as in *aaimaai* ‘woman’.

Some adjectives are unmarked for masculine/feminine, with an invariable form used regardless of the gender of the associated noun (Hardie et al. 2009: 177–178). This is illustrated in (4), where the adjective *calakh* ‘clever’ modifies a masculine and feminine noun. Other invariable adjectives include *vibhina* ‘different, various’ and *sampuurNa* ‘all, complete’.

- (4) Invariable adjectives in Nepali
- (a) mer-o calakh keto  
 my-M clever boy(M)  
 ‘my clever boyfriend’
- (b) mer-i calakh keti  
 my-F clever girl(F)  
 ‘my clever girlfriend’

As regards agreement patterns on verbs, these are analogous to adjectives and possessive adjectives, as shown in (5). Thus, verbs distinguish between masculine and feminine forms in agreement with humans (5a–b) and animals (5c–d), with a masculine form of a verb used by default with inanimates (5e).

(5) Gender agreement on verbs

- (a) mer-o keto nepali bolcha  
my-M boy(M) Nepali speak.PRS.3SG.M  
'My boyfriend speaks Nepali.'
- (b) mer-i keti nepali bolche  
my-F girl(F) Nepali speak.PRS.3SG.F  
'My girlfriend speaks Nepali.'
- (c) mer-o ranga khancha  
my-M male.buffalo(M) eat.PRS.3SG.M  
'My (male) buffalo eats.'
- (d) mer-i bhainsi kanche  
my-F female.buffalo(F) eat.PRS.3SG.F  
'My (female) buffalo eats.'
- (e) mer-o kitaab yahan cha  
my-M book(M) here be.PRS.3SG.M  
'My book is here.'

Masculine/feminine agreement with the possessed item is found in possessive forms, including possessive adjectives, as illustrated by the contrast between *mer-o* (my-M) and *mer-i* (my-F) 'my' in examples (4) and (5) above, as well as nouns marked with a genitive case marker, as in *Ram-k-o kaka* (Ram-GEN-M uncle(M)) 'Ram's uncle' vs. *Ram-k-i kaki* (Ram-GEN-F aunt(F)) 'Ram's aunt'.

While the agreement patterns discussed above involve the distinction masculine vs. feminine, 3rd person personal pronouns distinguish between human vs. non-human forms, i.e., *u* 'he/she' vs. *tyo* 'it'. Since Nepali is a pro-drop language, a pronominal subject can be omitted when it is deictic or anaphoric. The use of personal pronouns is illustrated in (6), where the hu-

man pronoun *u* is used anaphorically with both a female (6a) and a male (6b) referent. In contrast, the non-human pronoun *tyo* is used in (6c) with an inanimate referent. Note also that the verbs are still consistently marked with the masculine/feminine gender.

(6) Personal pronouns with human and non-human nouns

(a) Sarita Paris-ma bosche ra u ramr-i che  
 Sarita Paris-at live.PRS.3SG.F and he/she beautiful-F be.PRS.3SG.F  
 ‘Sarita lives in Paris and she is beautiful.’

(b) Ram Paris-ma boscha ra u ramr-o cha  
 Ram Paris-at live.PRS.3SG.M and he/she beautiful-M be.PRS.3SG.M  
 ‘Ram lives in Paris and he is handsome.’

(c) mer-o ghar Paris-ma cha  
 my-M house(M) Paris-at be.PRS.3SG.M  
 ra tyo ramr-o cha  
 and it beautiful-M be.PRS.3SG.M  
 ‘My house is in Paris and it is beautiful.’

In addition to the interpretations discussed above, Nepali gender has been described in terms of natural gender (Riccardi 2003: 554) as well as a four-gender system that also includes neuter and common genders (Manders 2007: 52).<sup>9</sup> Another interpretation has been proposed by Pokharel (2010), who goes even further and suggests the presence of eleven genders, with distinctions made with respect to animacy, humanness, sex, countability as well as four speech style levels (royal, high grade honorific, middle grade honorific, low grade honorific). However, in this paper such distinctions are not viewed as constituting different genders. As has been previously shown, languages with gender vary in the degree to which nouns can be recategorized, with a noun canonically assigned a specific gender without variability (cf. Corbett & Fedden 2016). Another form of recategorization is found in Nepali as a human noun can occur with different honorific patterns depending on the

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<sup>9</sup> Manders (2007: 52–55) distinguishes a separate “common” gender including nouns for humans, animals and deities, which can take both masculine and feminine agreements, as in *caraa* ‘bird’ (cf. *parevaa* ‘pigeon’), as well as a “neuter” gender, which includes inanimate nouns.

relationship between the speaker and the referent. As shown in (7), the masculine noun *kaka* ‘uncle’ occurs in three honorific levels depending on the degree of respect the speaker wants to show to his/her uncle.<sup>10</sup>

- (7) Honorific levels with masculine human nouns
- (a) mer-o kaka nepali bhasa bolcha  
my-M uncle(M) Nepali language speak.PRS.3SG.M.LOW.HON  
‘My uncle speaks Nepali.’
- (b) mer-o kaka nepali bhasa bolchan  
my-M uncle(M) Nepali language speak.PRS.3SG.M.MID.HON  
‘My uncle speaks Nepali.’
- (c) mer-o kaka nepali bhasa bolnuhuncha  
my-M uncle(M) Nepali language speak.PRS.3SG.HIGH.HON  
‘My uncle speaks Nepali.’

Even though there is a difference in the form of the verb, we do not view it as an indication of the presence of different genders, since allowing every human noun to occur in different honorific patterns implies that no such nouns actually take a fixed agreement pattern, and therefore they cannot form an agreement class (cf. Corbett 1991: 148–149).

In conclusion, gender in Nepali presents a difficult case due to the interaction of different semantics and different agreement patterns involving the masculine/feminine and human/non-human oppositions. We return to the interpretations of this interaction in §3.3.

### 3.2. Numeral classifiers

Like most of the languages in the region, Nepali is attested to have a restricted inventory of numeral classifiers. As mentioned in §2, languages with a large inventory of classifiers occur in only a few languages of Nepal such as

<sup>10</sup> The respective pronouns for the three honorific levels are *u* (he/she.LOW.HON), *uni* (he/she.MID.HON) and *wahan* (he/she.HIGH.HON). An analogous contrast is made in human nouns of feminine gender, except for the high grade honorific which does not mark the gender of the subject. The feminine forms for the examples in (7) are *bolche* (speak.3SG.F.LOW.HON) and *bolchin* (speak.3SG.F.MID.HON).

Newari (Kiryu 2009) as well as Bantawa (Doornenbal 2009: 112) and the Bodo-Garo group (Fu 2015: 45–46). Most available descriptions of Nepali mention two numeral classifiers: *jana*, which occurs with human countable nouns, and *wota*, which occurs with non-human countable nouns (Acharya 1991: 100). The classifiers occur in the context of quantification, i.e., with numerals and quantifiers. As illustrated in (8) for human nouns (in a) and for non-human nouns (in b), the noun phrase ordering is Numeral-Classifier-Noun:

(8) Human and non-human numeral classifiers in Nepali

(a)   pac   jana                mali  
       five CLF.HUMAN   gardener  
       ‘five gardeners’

(b)   tin   wota                kalam  
       three CLF.GENERAL   pen  
       ‘three pens’

According to the recent studies by Pokharel (1997, 2010), Nepali has over 200 numeral classifiers, including classifiers for round fruits, long objects, two-dimensional objects, trees, grains and capsules. However, it is questionable whether these are in fact all numeral classifiers, i.e., sortal and not mensural classifiers. The two types of classifiers have been distinguished in the literature in an often loose way based on a number of criteria (cf. Aikhenvald 2000a: 286–293, 355–357). A more structured approach was proposed by Her (2012), who distinguished between the two types based on the criteria of obligatoriness and quantification. Thus, numeral classifiers (sortal classifiers) are obligatory in the context of enumeration and classify nouns according to one of their inherent features while necessarily having the mathematical value of ‘one’. On the other hand, measure words (mensural classifiers) provide new information concerning the quantity of the associated noun, which is not necessarily ‘one’ (cf. Her 2012: 1679). This contrast is illustrated in (9) with examples from Mandarin Chinese.

(9) Numeral classifiers and measure words in Mandarin Chinese

(a)   san1   ben3                shu1  
       three CLF.VOLUME   book  
       ‘three books’

- (b)    *san1 da3*                      *shu1*  
       three MENS.DOZEN book  
       ‘three dozen of books’

The numeral classifier *ben3* in (9a) highlights the volume feature of the noun ‘book’ while bearing the mathematical value of times 1, i.e., three CLF.VOLUME book =  $3 \times 1$  book = 3 books. On the other hand, the measure word *da3* in (b) conveys information concerning quantity, in this case the quantity of a dozen, i.e., three MENS.DOZEN book =  $3 \times 12$  book = 36 books. The most intuitive test to differentiate between numeral classifiers and measure words is thus to remove them and assess if the meaning of the phrase is changed. For instance, in (9a), the phrase *san1 shu1* (three book) would still be interpreted by native speakers as meaning ‘three books’. However, in (9b), *san1 shu1* (three book) ‘three books’ has a different meaning than ‘three dozen of books’ since the information concerning quantity is no longer conveyed by the measure word.

The same distinction is found in Nepali, as shown in (10), where the numeral classifier *dana* highlights the feature of ‘round fruit’, while the meaning of the measure word *ghar* involves quantity. If we apply the same test as above, in (a) *tin syaauu* would still be interpreted as meaning ‘three apples’. Nevertheless, *tin mauri* (three bee) ‘three bees’ in (b) is not equivalent to *tin ghar mauri* ‘three hives of bees’ and *ghar* is thus interpreted as a measure word.

(10) Numeral classifiers and measure words in Nepali

- (a)    *tin dana*                      *syaauu*  
       three CLF.ROUND.FRUIT apple  
       ‘three apples’
- (b)    *tin ghar*                      *mauri*  
       three MENS.HOUSE bee  
       ‘three hives of bees’

The criteria outlined above have been applied to the classifiers given by Pokharel (1997) in order to determine whether they constitute examples of numeral classifiers or measure words. The classifiers were first evaluated by the native speakers we have consulted (further details are provided in §3.4). Those classifiers with which all the speakers were unfamiliar, both in terms

of passive and active knowledge, were not investigated further. The remaining classifiers were then categorised in terms of the semantic and mathematical methodology proposed by Her (2012), resulting in a set of ten numeral classifiers. The classifiers include a general and a human classifier, together with a number of classifiers for inanimates which involve contrasts based on shape, dimensionality and material. The ten classifiers are illustrated in Table 2 along with their respective semantic domains and examples. As can be seen, most of the classifiers occur with nouns for natural objects such as plants, fruits and food products.

Table 2. Numeral classifiers in Nepali.

Classifier	Meaning	Example
<i>jana</i>	human	man, woman, uncle, aunt
<i>wota</i>	general	buffalo, book, car, telephone
<i>dana</i>	round fruits	apple, grape, orange
<i>sinka</i>	long object	noodle, bamboo
<i>ghoga</i>	long plant	maize
<i>geda</i>	grain	mustard, maize, rice
<i>pana</i>	two-dimensional	paper
<i>than</i>	two-dimensional and large	old hand-made paper
<i>koso</i>	natural capsule	banana, bean, pea
<i>khili</i>	artificial capsule	cigarette, betel nut <sup>11</sup>

The use of the general and specific classifiers is illustrated in (11), with nouns for humans in (a), animals in (b), and inanimate nouns in (c–e).

(11) General and specific numeral classifiers in Nepali

- (a)    *tin jana manche*  
       three CLF.HUMAN man  
       ‘three men’

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<sup>11</sup> According to the native speakers, the use of the classifier for “artificial capsules” with betel nuts and cigarettes can be attributed to the fact that the former are usually wrapped into leaves for consumption, while in the case of cigarettes the tobacco is wrapped into cigarette paper.

- (b) tin wota ranga  
 three CLF.GENERAL male.buffalo  
 ‘three (male) buffaloes’
- (c) tin wota kitaab  
 three CLF.GENERAL book  
 ‘three books’
- (d) tin dana syaauu  
 three CLF.ROUND.FRUIT apple  
 ‘three apples’
- (e) tin khili cuurot  
 three CLF.ARTIFICIAL.CAPSULE cigarette  
 ‘three cigarettes’

The transparent meanings of the classifiers in Table 2 suggest their nominal origin. For example, *pana* is used as a classifier for two-dimensional objects as in *tin pana kagaj* (three CLF.2D paper) ‘three sheets of paper’; it is also used as a noun meaning ‘leaf’. In contrast, nouns for modern objects such as computers and telephones can only take the general classifier, as in *tin wota kamyutara* (three CLF.GENERAL computer) ‘three computers’, *tin wota delifon* (three CLF.GENERAL telephone) ‘three telephones’. The difference in the complexity of semantic categorization of traditional and modern objects suggests that the semantics of classifiers in Nepali – and thus the inventory – is subject to change and variation. We return to this issue below.

As regards the classifier *wota*, while it has been described in the literature as a non-human classifier (cf. Acharya 1991: 100), here we treat it as a general classifier (for an overview see Kilarski & Tang 2018). A general classifier in the broad definition is a classifier that may apply to most nouns of the lexicon without referring to a specific feature. For example, in Mandarin Chinese instead of using a specific classifier in *san1 wei4 lao3shi1* (three CLF.HUMAN teacher), a general classifier can be used, as in *san3 ge0 lao3shi1* (three CLF.GENERAL teacher) ‘three teachers’. Similarly, as shown in (12), the general classifier *wota* may be used instead of the specific classifiers for human and inanimate nouns. (There is no specific classifier for animals, which only appear with the general classifier in Nepali.)

(12) Use of the general classifier *wota* in Nepali

- (a) ek wota kaka  
 one CLF.GENERAL uncle  
 'one uncle'
- (b) ek jana kaka  
 one CLF.HUMAN uncle  
 'one uncle'
- (c) tin wota cuurot  
 three CLF.GENERAL cigarette  
 'three cigarettes'
- (d) tin khili cuurot  
 three CLF.ARTIFICIAL.CAPSULE cigarette  
 'three cigarettes'

While the other classifiers can only occur in an independent form, the general classifier occurs with numerals either independently or as fused with a numeral. This is illustrated in (13), where independent and fused forms of the classifier are used with the numeral *ek* 'one'.

(13) Independent and fused forms of the general classifier in Nepali

- (a) ek wota chora  
 one CLF.GENERAL son  
 'one son'
- (b) eu-ta chora  
 one-CLF.GENERAL son  
 'one son'

There is a tendency to use fused forms with lower numerals, as in *dui-ta ghadi* (two-CLF.GENERAL watch) 'two watches' (cf. *dui wota ghadi*), *tin-ta ghadi* (three-CLF.GENERAL watch) 'three watches' (cf. *tin wota ghadi*). In contrast, independent forms tend to be used with higher numerals, as in *saya wota ghadi* (hundred CLF.GENERAL watch) 'one hundred watches' (cf. *saya-ta ghadi*), *hajar wota ghadi* (thousand CLF.GENERAL watch) 'one thousand watches' (cf. *hajar-ta ghadi*).

While the occurrence of numeral classifiers fused with numerals is not typologically uncommon (cf. Aikhenvald 2000a: 108), what is more unusual about the general classifier is that it exhibits masculine/feminine agreement, both in its independent and fused forms (cf. Pokharel 2010: 42–43).<sup>12</sup> In other words, the general classifier shows the masculine/feminine distinction with animate nouns, while inanimates occur with the masculine forms of the classifier. This agreement pattern is identical to the one illustrated above with, e.g., adjectives and verbs, which distinguish between female humans and female animates as opposed to the residue. Example (14) illustrates the use of masculine and feminine forms of both the independent and fused forms of the general classifier with human nouns.

(14) Gender agreement on the general classifier in Nepali

- (a) tin wot-a keto  
 three CLF.GENERAL-M boy(M)  
 ‘three boys’
- (b) tin-t-a keto  
 three-CLF.GENERAL-M boy(M)  
 ‘three boys’
- (c) tin wot-i keti  
 three CLF.GENERAL-F girl(F)  
 ‘three girls’
- (d) tin-t-i keti  
 three-CLF.GENERAL-F girl(F)  
 ‘three girls’

As a summary, the classifier system of Nepali includes a general and a human classifier, along with other classifiers for inanimates, which involve distinctions based on shape, dimensionality and material. The general classifier may be fused with lower numerals and exhibits masculine/feminine agree-

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<sup>12</sup> Another example of a classifier which exhibits gender agreement is discussed by Fedden & Corbett (2017: 26–27), based on data from Bertinetto & Ciucci (2014): Ayoreo (Zamucoan; Bolivia and Paraguay) distinguishes possessive classifiers which show agreement in gender and number (for further discussion see Ciucci & Bertinetto 2019).

ment. In the next section, we examine the relation between gender and numeral classifiers in Nepali in the context of other complex nominal classification systems.

### 3.3. Co-existing systems of gender and numeral classifiers

In view of the complex expression and semantics of gender as well as the presence of numeral classifiers in Nepali, we dedicate this section to a discussion of possible interpretations of these nominal classification systems in terms of Fedden & Corbett's (2017) typology. To summarize our description in §3.1 and §3.2, gender agreement contrasting between feminine (female humans and female animals) and the residue (male humans, male animates, and inanimates) is found on adjectives, possessive adjectives, verbs, ordinal numbers, and the general classifier. In contrast, third person pronouns distinguish between human and non-human referents. Finally, classifiers mostly apply to inanimates, with the exception of the human classifier and general classifier. The former can only be used with human nouns, whereas the latter can be used with animates (including humans) and inanimates. Most of the existing literature only considers one masculine/feminine gender system marked on, e.g., verbs and adjectives. However, a second potential gender system is a pronominal gender system that marks humanness on third person personal pronouns. Following Fedden & Corbett (2017), we thus argue that Nepali has actually two gender systems as well as a numeral classifier system.

Within Fedden & Corbett's (2017) typology, concurrent nominal classification systems are evaluated according to a continuum of nine types ranging between A1 and C3 (see Table 3). Types A1 and C3 present the most clear-cut situations of having one and two systems, respectively. As an example of how this framework is implemented, let us consider gender in French. The form of feminine gender markers in adjectives in French may be phonologically different (e.g., *-t*, *-g* word-finally), but the markers have the same value, i.e., feminine, as in *petit* [pəti] 'small.M' vs. *petite* [pətit] 'small.F' and *long* [lɔ̃] 'long.M' vs. *longue* [lɔ̃g] 'long.F'. Thus, nominal classification in French is described as Type A3 with only one gender system that has different forms of feminine gender markers which have the same semantic value.

If different semantic oppositions are expressed by a classification system, then the interaction between them may be further analysed according to their orthogonality score. Fedden & Corbett (2017: 31) show an example of this

Table 3. Typology of single and concurrent systems (adapted from Fedden & Corbett 2017).

		Semantics		
		Same	Partial overlap	Different
Form	Same	A1: 1 system Kilivila (Austronesian)	B1: 1 system Bagvalal (Nakh-Dagestanian)	C1: 2 systems Russian (Indo-European)
	Partial overlap	A2: 1 system Latin (Indo-European)	B2: ? systems Burmese (East Bird’s Head-Sentani)	C2: 2 systems [not yet found]
	Different	A3: 1 system French (Indo-European)	B3: 2 systems Mian (Trans New Guinea)	C3: 2 systems Paumari (Arawan)

kind by analysing the language Nanti (Arawakan; Peru) as having two gender systems: one based on a masculine/feminine opposition, the other on an animate/inanimate distinction. In Nanti, all inanimates are feminine, while animate nouns are affiliated to the masculine or feminine gender based on biological gender. The orthogonality of the semantics is determined by calculating how many actual combinations are fulfilled by the nominal classification systems of a language compared to the minimum combinations required depending on the parameters of the language. An orthogonality score of 0 indicates a single system whereas 1 refers to two fully orthogonal systems. A score between 0 and 1 shows that the language belongs to Type B. The closer the obtained score is to 0.5, the greater the overlap between the two systems. For instance in Nanti (see Table 4), the orthogonality score is derived as follows: (cells filled – minimum cells filled)/(possible cells – minimum cells filled) = (3–2)/(4–2) = 0.5. Nanti thus has an overlap of semantics between the two gender systems. With regard to forms, two sets of agreement markers are found: *i-* ‘masculine’ vs. *o-* ‘feminine’ and *-n* ‘animate’ vs. *-t* ‘inanimate’. Nanti has an overlap of semantics but different agreement forms for the two systems. It is therefore affiliated to Type B3.

Table 4. Nanti system matrix (Fedden & Corbett 2017: 31).

Nanti	Animate	Inanimate
Masculine	+	–
Feminine	+	+

With regard to the masculine/feminine and human/non-human oppositions in Nepali, the system matrix is shown in Table 5.

Table 5. Nepali system matrix for the masculine/feminine gender and the humanness-based gender.

Nepali	Human	Non-human
Masculine	+	+
Feminine	+	+

Human nouns are affiliated to the feminine and masculine depending on biological gender. Non-human nouns may include non-human animates such as animals and inanimate objects. Non-human animates are affiliated to the feminine and masculine depending on biological gender, whereas all inanimates belong to the masculine gender. The orthogonality score is:  $(4-2)/(4-2) = 1$ . This score shows that we should consider the two systems as canonically different in terms of semantics. Moreover, predictability should also be considered.<sup>13</sup> On the one hand, both feminine and masculine can correspond to both human and non-human. For instance, both a female human and a female animal (which counts as non-human) can be affiliated to the feminine grammatical gender. On the other hand, human and non-human can correspond to both masculine and feminine. The masculine/feminine and the human/non-human oppositions are not predictable from each other, which supports the existence of two systems.

We then need to assess the interaction of the forms of the agreement exponents on targets (see Table 6). There is no overlap between the exponents of human/non-human (*u/tyo*) and those of masculine/feminine since humanness is solely marked on pronouns, which do not mark masculine/feminine. Nepali should therefore be classified as Type C3 with two gender systems.

While the model is designed for the analysis of two concurrent nominal classification systems, we can also apply it to analogous cases of interaction within a language having three nominal classification systems. The ten clas-

<sup>13</sup> “In addition to examples where the distinctions drawn are identical, we also include instances where two candidate systems are not identical, but where one subsumes the other. In other words, there is a many-to-one mapping between the two candidate systems: given one set of distinctions in grammatical meaning, the other is fully predictable” (Fedden & Corbett 2017: 13).

Table 6. Forms of gender in Nepali.

		Human	Non-human
Masculine	verb	<i>-cha</i>	<i>-cha</i>
	adjective	<i>-o</i>	<i>-o</i>
	3rd person pronoun	<i>-u</i>	<i>-tyo</i>
	general classifier	<i>-a</i>	<i>-a</i>
Feminine	verb	<i>-che</i>	<i>-che</i>
	adjective	<i>-i</i>	<i>-i</i>
	3rd person pronoun	<i>-u</i>	<i>-tyo</i>
	general classifier	<i>-i</i>	<i>-i</i>

sifiers included in our study are listed in the rows of Table 7, whereas the masculine/feminine distinctions are listed in the columns. The human classifier and the general classifier are used with both masculine and feminine (animate) nouns. The other eight classifiers can only be used with inanimates, which are exclusively masculine. The orthogonality score is  $(12-10/20-10) = 0.2$ , which can be interpreted in terms of a type B situation with semantic overlap. In terms of form, the two systems have entirely different forms (masculine/feminine markers vs. classifier forms).

Table 7. Nepali system matrix for the classifiers and the masculine/feminine gender.

Classifier	Meaning	Masculine	Feminine
<i>jana</i>	human	+	+
<i>wota</i>	general	+	+
<i>dana</i>	round fruits	+	-
<i>sinka</i>	long object	+	-
<i>ghoga</i>	long plant	+	-
<i>geda</i>	grain	+	-
<i>pana</i>	two-dimensional	+	-
<i>than</i>	two-dimensional and large	+	-
<i>koso</i>	natural capsule	+	-
<i>khili</i>	artificial capsule	+	-

In terms of predictability, feminine can correspond to both *jana* and *wota*, while masculine can correspond to all the classifiers. In the other direction, *jana* can correspond to both masculine and feminine, *wota* can correspond to both masculine and feminine (when applied to humans or animates). All the other classifiers map to masculine. This shows that given one set of distinction, the other is not fully predictable. There is only partial predictability, thus partial semantic overlap, from the classifiers to the masculine/feminine opposition. We thus consider the masculine/feminine opposition and classifiers as two systems of Type B3.

The same analysis for comparing classifiers with the humanness-based system is shown in Table 8. The orthogonality score is  $(11-10)/(20-10) = 1/10 = 0.1$ . We also find a semantic overlap. In terms of predictability, humanness corresponds to *jana*, but since *wota* can be used with humans, there is no full predictability from human to classifiers. The non-human category can correspond to all the classifiers except *jana*, whereas *jana* only corresponds to human. The general classifier *wota* corresponds to both human and non-human. All the other classifiers correspond only to non-human. There is partial predictability between the two systems, therefore partial overlap, and since the forms are different, we conclude that this is a situation of Type B3 with two separate systems.<sup>14</sup>

Table 8. Nepali system matrix for the classifiers and the humanness-based gender.

Classifier	Meaning	Human	Non-human
<i>jana</i>	human	+	-
<i>wota</i>	general	+	+
<i>dana</i>	round fruits	-	+
<i>sinka</i>	long object	-	+
<i>ghoga</i>	long plant	-	+
<i>geda</i>	grain	-	+
<i>pana</i>	two-dimensional	-	+
<i>than</i>	two-dimensional and large	-	+
<i>koso</i>	natural capsule	-	+
<i>khili</i>	artificial capsule	-	+

<sup>14</sup> While the pairs classifiers vs. human/non-human and classifiers vs. masculine/feminine both result in an interpretation of B3-systems, the low orthogonality scores (0.2 and 0.1) indicate that we are dealing with almost a single system, which is a different situation from a B3-system as in Nanti with an orthogonality score of 0.5.

As a summary, we interpret Nepali in terms of three nominal classification systems: two gender systems based on the masculine/feminine and human/non-human oppositions plus a classifier system. This interpretation will be applied in §4, where we will examine the functions of the two gender systems as well as classifiers.

### 3.4. Methodology

In view of the lack of agreement in the available descriptions of gender and numeral classifiers in Nepali, the present study is primarily based on examples elicited from native speakers. Their judgements concerning the use of the two classification systems were additionally cross-checked with earlier descriptions. The subjects were five native speakers of Nepali: two females aged between 35 and 40 and one male aged 70, both from the valley of Kathmandu, as well as two other males aged between 30 and 40 born in the eastern mountains of Nepal, which they left only to attend college. The speakers can all be described as highly mobile since they have held various working positions abroad. At the same time, they have frequently travelled to Nepal and have maintained regular contact with other native speakers. As regards the knowledge of other languages, apart from a proficient level of French, they also have a basic knowledge of Newari, which, as shown in Table 1 above, lacks gender but has a rich system of numeral classifiers. The number of speakers consulted is admittedly small and the data may not represent a coherent system as there is variation in Nepali in terms of urban vs. rural varieties, eastern vs. western varieties as well as age and gender. Nevertheless, we believe that it is sufficient for the purposes of this study, which focuses on typical instances of the functions of gender and classifiers rather than, e.g., the degree of variation exhibited by the three systems.

## 4. Functions of gender and numeral classifiers in Nepali

In this section we examine the nominal classification systems in Nepali in terms of their functions, based on the functional typology proposed by Contini-Morava & Kilarski (2013). Two types of functions can be distinguished: lexical/semantic, where classification markers are used to, e.g., create new lexical items and convey affective meanings, and discourse/pragmatic, where gender marking or the presence or choice of a classifier are used to identify

and track referents, and to indicate their discourse status. In §4.1 we start with examples of lexical functions, and in §4.2 we discuss discourse functions.

#### 4.1. Lexical functions

Lexical functions include uses of classification markers to create new lexical items and provide finer differentiation of existing lexical items. Such uses are divided by Contini-Morava & Kilarski (2013: 268–279) into four types: expansion of the lexicon, differentiating referents, individuation and ascribing properties to referents. Depending on the degree of grammaticalization of a classification system, lexical functions can be expressed by the change of overt gender marking on a noun or an agreement target and the presence or choice of a classifier. Contini-Morava & Kilarski (2013: 269) acknowledge that the boundaries between these functions are in some cases fuzzy, where related uses of classification markers in the same language may be classified into different types. In the present case this will be illustrated by the meanings expressed by overt marking on nouns, which can be analysed in terms of the expansion of the lexicon or differentiating referents. In terms of gender systems, we only discuss the masculine/feminine opposition in this section, since the humanness-based gender system is only marked on pronouns and does not contribute to lexical functions.

##### 4.1.1. Expansion of the lexicon

This function involves a number of related uses of gender and classifiers to increase the inventory of the lexicon (Contini-Morava & Kilarski 2013: 269–272). These include the following cases: derivational use, signalling cross-class relationships involving such oppositions as size, shape, countability and animacy as well as the use of gender differentiation to structure related concepts in the lexicon. Such uses are more typical of the more grammaticalized gender systems where a gender marker forms a lexical unit with a noun. However, related cases are also found in classification systems that share properties of gender and classifiers, and where semantically transparent markers are attached to noun stems, as in Marrithiyel (Daly, Australian) (Green 1997).

As illustrated in Table 9, the masculine/feminine gender markers on inanimate nouns can be used to express size differences, with the masculine being associated with larger size and the feminine with smaller size. For instance, the feminine marker *-i* may be used on masculine nouns to infer a small size, as in *dalo* ‘basket’ and *dali* ‘small basket’.

Table 9. Gender and size in Nepali.

Masculine	Feminine
<i>dalo</i> ‘basket (used for wood)’	<i>dali</i> ‘small basket (used for grains)’
<i>jhoola</i> ‘bag’	<i>jhooli</i> ‘small bag (used by monks)’
<i>bihaan</i> ‘morning’	<i>bihaani</i> ‘the little morning (dawn)’
<i>khola</i> ‘river’	<i>kholi</i> ‘small river’

It is important to note, however, that different choices of agreement are found when inanimate nouns are associated with the feminine marker to convey a small size. Since inanimate nouns are by default masculine (cf. §3.1 above), both members of the pairs in Table 9 are expected to take masculine agreements. However, we have observed variation in the expression of agreement depending on formality: in formal speech, where gender agreement is realized more consistently than in colloquial speech, agreement may be deployed together with the feminine marker to indicate the metaphor of size, as in *eu-t-i dali* (one-CLF.GENERAL-F basket(F)) ‘one small basket (used for grains)’. Further research is necessary to determine whether this pattern is consistent among speakers and found in different varieties of Nepali.

As pointed out by Contini-Morava & Kilarski (2013), it is an open question whether such pairs involve the same nominal stem or different homonymous stems.<sup>15</sup> The same applies to related examples in Hindi-Urdu, as in *qabbaa* ‘box’ masc. vs. *qabbii* ‘little box’ fem. (Contini-Morava & Kilarski 2013: 272). However, regardless of what analysis is adopted in the case of the closely related patterns in Nepali and Hindi-Urdu, it is clear that in both cases it is the use of gender suffixes that contributes to the expansion of the lexicon.

<sup>15</sup> As mentioned by an anonymous reviewer, the answer to this question may only be found based on language-specific data and criteria.

In contrast, since classifiers do not appear on nouns in Nepali, they are not used to create new lexical items. However, they are used to provide further semantic differentiation among existing nouns, as we illustrate in the following section.

#### 4.1.2. Differentiating referents

In addition to the creation of new lexical items, classification markers can be used to provide a subtler differentiation of existing lexical items with respect to such meanings as sex and physical properties. This use is found in both gender and classifier systems, being expressed by the choice of overt marking on a noun or by different agreement forms in gender systems and by the choice of different classifiers. Since nouns in gender languages are typically assigned to one gender, variable classification has traditionally been viewed as a characteristic property of the less grammaticalized classifiers (cf. Dixon 1982). However, such strict distinctions between the two types of systems have recently been called in question in view of the growing body of evidence of the creative semantic potential of gender systems (cf. Singer 2016), resulting in predictable differentiation with regard to sex among humans and less predictable differentiation among inanimates with regard to physical properties. Such “variable classification” is viewed by Contini-Morava & Kilarski (2013: 272–276) as another common means of enriching the lexicon, this time by way of a more productive and predictable grammatical modification of nominal stems. The issue mentioned above with regard to the analysis of modified nominal stems also applies in this case, and so examples reported in the literature on both gender and classifiers have been interpreted in terms of either single polysemous or underdifferentiated stems or separate homonymous stems.<sup>16</sup> Here we illustrate the use of gender and classifiers in Nepali without resolving this question: as in the previous function, both types of classification markers can be shown to provide a means to enrich the lexicon.

The use of the masculine/feminine gender in Nepali to provide a finer semantic differentiation of nominal stems is illustrated by animate nouns, where different gender suffixes specify the sex of an animate referent (see Table 10).<sup>17</sup>

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<sup>16</sup> For a more detailed discussion see Contini-Morava & Kilarski (2013: 272–274) and Kilarski (2013: 240–241, 284–291, 297–304).

<sup>17</sup> For further examples of such differentiation see Poudel (2010: 7–9).

Table 10. Use of gender in Nepali for differentiation of referents.

Masculine	Feminine
<i>keto</i> ‘boy’	<i>keti</i> ‘girl’
<i>cora</i> ‘son’	<i>cori</i> ‘daughter’
<i>kaka</i> ‘uncle’	<i>kaki</i> ‘aunt’
<i>baagh</i> ‘tiger’	<i>baaghini</i> ‘tigress’
<i>kukhuro</i> ‘cock’	<i>kukhuri</i> ‘hen’

While both functions discussed above are expressed in Nepali by the choice of masculine/feminine suffixes, the examples illustrated in Table 9 and Table 10 are treated separately due to a different degree of productivity, with the differentiation found among animates being more productive. In addition, in this case overt differentiation on nouns is accompanied by regular masculine and feminine agreement regardless of stylistic differences.

A similar use of different classification markers with the same noun stem is found in the case of numeral classifiers, where different classifiers can be used to highlight a particular meaning such as shape and size, as illustrated in (15) below.

(15) Use of numeral classifiers in Nepali for differentiation of referents

- (a) tin    pana    kagaj  
 three CLF.2D paper  
 ‘three sheets of paper’
- (b) tin    than            kagaj  
 three CLF.2D.LARGE paper  
 ‘three sheets of old paper’
- (c) tin    ghoga    makai  
 three CLF.PLANT maize  
 ‘three plants of maize’
- (d) tin    geda            makai  
 three CLF.GRAIN maize  
 ‘three grains of maize’

In (a–b) the classifier *than* (for large two-dimensional objects) is used with the noun *kagaj* ‘paper’ instead of the usual classifier *pana* (for two-dimensional objects) to highlight the fact that the reference is made to sheets of old paper, since sheets of traditional hand-made paper were much larger than those of modern paper. In turn, in (c–d) the choice between the classifiers for plants and grains can be used to point to related meanings of the noun *makai* ‘maize’, i.e., either the entire plant or only the grains.

We can thus see that while both the masculine/feminine gender and numeral classifiers are used in Nepali to provide a subtler differentiation of nouns or noun stems, the contexts in which the two types of classification occur are complementary, with the former found among animate nouns and the latter among inanimates. This functional distribution can also be observed in other functions discussed below.

#### 4.1.3. Individuation

Another basic function of nominal classification systems is a consequence of the close relationship between classification and individuation. This relationship is reflected in such phenomena as the portmanteau expression of gender and number in fusional languages, the complementary distribution of obligatory numeral classifiers and obligatory pluralization as well as various hierarchies that have been proposed with respect to the categorization of nouns, e.g., the animacy hierarchy (Smith-Stark 1974; Silverstein 1976) and the individuation hierarchy (Sasse 1993). The degree of individuation can be expressed in gender systems by overt marking on the noun (either inflectional or derivational), oppositions between semantically related nouns as well as pronominalization. For example, as shown by Audring (2013), in Dutch (Germanic) masculine/common gender pronouns are used with reference to discrete referents, while a neuter pronoun is used for unbounded referents. The marking of the individuation status is regarded as a key function of numeral classifiers, which individuate the referent within a pseudopartitive construction (cf. Selkirk 1977) for the purpose of quantification. Thus, in Mandarin Chinese only countable nouns may occur with a numeral classifier (as well as a measure word), as in *san1 ben3 shu1* (three CLF.VOLUME book) ‘three books’, while mass nouns occur only with measure words, as in *san1 ping2 shui3* (three MENS.BOTTLE water) ‘three bottles of water’ but not *\*san1 ge0 shui3* (three CLF.GENERAL water) (cf. Her 2012).

Some of the relationships between classification and individuation mentioned above are also found in Nepali. As regards gender, its use differs from that found in other Indo-European languages due to different expression and semantic categorization, in particular the absence of masculine/feminine gender opposition among inanimate nouns and third person personal pronouns as well as the absence of obligatory pluralization, with the suffix *-haru* used for optional pluralization of nouns of both genders (cf. Acharya 1991: 99–104; Riccardi 2003: 554). In addition, we do not have attested examples where different gender markers on the noun or different agreement forms are used to distinguish between individuated and non-individuated senses of a noun. In contrast, the patterns attested in other numeral classifier languages are also found in Nepali: a numeral classifier is obligatory when a countable noun is enumerated, while mass nouns occur in this context obligatorily with measure words. Thus, the absence of a classifier or a measure word for both types of nouns is ungrammatical, as in *\*tin cuurot* (three cigarette) ‘three cigarettes’ and *\*tin panii* (three water) ‘three units of water’. For example, in (16) the countable noun *cuurot* ‘cigarette’ can take both a numeral classifier (in a) and a measure word (in b), while the mass noun *panii* ‘water’ can only combine with a measure word (in c), with the use of a classifier in (d) being ungrammatical.

(16) Numeral classifiers and individuation in Nepali

- (a) *tin khili cuurot*  
 three CLF.ARTIFICIAL.CAPSULE cigarette  
 ‘three cigarettes’
- (b) *tin baksa cuurot*  
 three MENS.BOX cigarette  
 ‘three boxes of cigarettes’
- (c) *tin bootala panii*  
 three MENS.BOTTLE water  
 ‘three bottles of water’
- (d) *\*tin wota panii*  
 three CLF.GENERAL water  
 ‘three units of water’

In addition, numeral classifiers in Nepali conform to the universal proposed by Greenberg (1972) and Sanches & Slobin (1973) regarding the complementary distribution of obligatory presence of numeral classifiers and obligatory pluralization. Thus, while nouns in Nepali can be pluralized, the plural marker *-haru* is optional and has been analysed as an associative marker rather than a typical marker of plurality. For example, Riccardi (2003: 554) translates it as ‘and other things’. Further, while a numeral classifier and the plural marker can occur independently, as in *tin wota kitaab* (three CLF.GENERAL book) ‘three books’ and *kitaab-haru* (book-PL) ‘books’, the two cannot co-occur, with the following phrase being ungrammatical: *\*tin wota kitaab-haru* (three CLF.GENERAL book-PL) ‘three books’ (cf. Bal 2004–2007: 336).

As a summary, individuation in Nepali is only conveyed by numeral classifiers. Since all inanimate nouns are masculine, the masculine/feminine gender is not used to differentiate between countable nouns and mass nouns; in contrast, this distinction is expressed by numeral classifiers and measure words.

#### 4.1.4. Ascribing properties to referents

Finally, the choice of a gender or a classifier can be used to express the speaker’s attitude toward the referent, e.g., affection and contempt. In gender languages attitudes toward the referent can be conveyed by the choice of an animate noun of a different gender than the one normally used, e.g., by using a masculine noun with reference to a woman, or by gender shift, i.e., the converse use of agreement forms. For example, in Afro-Asiatic languages gender shift is found with reference to both animates and inanimates. Thus, in Modern Hebrew (Semitic) masculine pronouns and verbal morphology are used to refer to females by both male and female friends and relatives to convey not only affection and intimacy but also insult and mockery (Tobin 2001). As regards numeral classifier languages, using different classifiers with the same noun may also express different perspectives toward the referent. Such uses are common in South Asian languages, including not only those with large inventories of human classifiers, e.g., Thai (Tai) (Burusphat 2007) but also those with smaller systems, e.g., Bengali (Barz & Diller 1985). According to Barz & Diller (1985: 167), numeral classifiers in South and South-East Asia constitute “a communicative resource available to speakers to convey certain stylistic nuances”. Such uses are also found in

other numeral classifier languages of East Asia. For instance, the use of different classifiers for animate referents in Mandarin Chinese has different connotations, as in *san1 wei4 xue2sheng1* (three CLF.HUMAN student) ‘three students’ (respectful) vs. *san1 ge0 xue2sheng1* (three CLF.GENERAL student) ‘three students’. While the use of the human classifier in the first phrase shows respect, the general classifier in the second phrase implies that the speaker views the referents as equal or persons deserving less respect.

Similar uses are found in both gender and classifiers in Nepali. For example, gender switch can be used to convey affection. According to Pokharel (2010: 52), such converse use of gender agreement occurs in the speech of parents addressing their children. As shown in (17), masculine nouns with masculine agreements can be used with reference to a daughter (in a), while feminine nouns and feminine agreements can be used with reference to a son (in b). In both cases the agreement forms include both possessive and verbal forms as well as the inflected general classifiers.

(17) Use of gender shift in Nepali for affection (adapted from Pokharel 2010: 46)

(a) mer-o eu-t-a                      keto    basyo  
my-M one-CLF.GENERAL-M boy(M) sit.PAST.3SG.M  
‘My boy sat down (with reference to a girl).’

(b) mer-i eu-t-i                      keti    basi  
my-F one-CLF.GENERAL-F girl(F) sit.PAST.3SG.F  
‘My girl sat down (with reference to a boy).’

As in other numeral classifier systems in East Asia, classifiers in Nepali can also be used to convey affective messages. For example, the use of the specific human classifier *jana* instead of the general classifier *wota* shows more respect towards the referent, as shown in (18).

(18) Use of numeral classifiers in Nepali to convey respect

(a) tin    jana                      bidhyarti  
three CLF.HUMAN    student  
‘three students (respectful)’

(b) tin    wota                      bidhyarti  
three CLF.GENERAL    student  
‘three students’

While numeral classifiers in Nepali can be used to convey a speaker's attitude towards humans, no such uses have been observed with inanimate nouns. By way of illustration, there is no difference in connotations in the use of general and specific classifiers with inanimates, as in *tin khili cuurot* (three CLF.ARTIFICIAL.CAPSULE cigarette) and *tin wota cuurot* (three CLF.GENERAL cigarette) 'three cigarettes'.

To conclude, the examples of lexical functions provided above show a complex pattern in the functionality of gender and numeral classifiers in Nepali. On the one hand, we can see a complementary distribution in their use in expansion of the lexicon and individuation, with the former function only conveyed by gender, where masculine/feminine gender markers are used to convey size differences, with no analogous use of classifiers due to their independent expression, and the latter function only expressed by classifiers, with no correlation with gender due to its specific semantics and morphological expression. On the other hand, both the masculine/feminine gender and classifiers are used for differentiating referents and attributing properties. We analyse these apparent functional overlaps in detail in §5. Such a complex pattern in the functions of gender and numeral classifiers is also found in the other main type of functions, i.e., discourse functions.

#### 4.2. Discourse functions

Both gender and numeral classifiers in Nepali contribute to the organization of discourse. Three types of discourse functions are distinguished by Contini-Morava & Kilarski (2013: 279–291): reference identification, i.e., the use of nominal classification markers to identify a referent and disambiguate among potential referents; reference management, i.e., the correlation between the presence of gender marking or the presence/choice of a classifier and such properties as definiteness and prominence of the referent; and finally representation of referents, i.e., the change of classification marking to introduce a new perspective on the referent. In general, the extent to which a nominal classification system is exploited for one of the above functions depends on the degree of its obligatoriness. For example, since the presence of a classifier is typically less obligatory than that of a gender marker, classifiers are more likely to be used to indicate definiteness and thematic salience.

## 4.2.1. Reference identification

Reference identification involves related uses of nominal classification markers to introduce a referent and then refer to it anaphorically (reference tracking), identify a referent in a speech situation (deixis) and disambiguate among the referents of two or more antecedent noun phrases (disambiguation) (Contini-Morava & Kilarski 2013: 279–282). Such uses are found in all types of nominal classification systems. For instance, indexing discourse participants is viewed as the primary function of gender within the UNITYP project (Seiler 1986). In turn, classifiers may constitute the primary means of anaphoric reference, as in Jakaltek (Mayan), where noun classifiers are “the only anaphoric pronouns of the language” (Craig 1994: 569).

Both gender systems as well as numeral classifiers in Nepali are used anaphorically. Anaphoric use of gender markers is illustrated in (19), where in (a) the referent is introduced in the first clause and is referred to again by the human third person pronoun and the feminine agreement on the verb in the second clause, with an analogous use of masculine agreement in (b). The non-human form of the third person pronoun and the masculine form of the verb are also used anaphorically in (c) to refer to the referent of the phrase ‘my house’ since all inanimates are masculine in Nepali.

## (19) Anaphoric use of gender in Nepali

- (a) Sarita Paris-ma bosche ra u  
 Sarita Paris-at live.PRS.3SG.F and he/she

faransisi bhaasa bolche  
 French language speak.PRS.3SG.F

‘Sarita lives in Paris and she speaks French.’

- (b) Ram Paris-ma boscha ra u  
 Ram Paris-at live.PRS.3SG.M and he/she

faransisi bhaasa bolcha  
 French language speak.PRS.3SG.M

‘Ram lives in Paris and he speaks French.’

(c) mero ghar Paris-ma cha  
 my-M house(M) Paris-at be.PRS.3SG.M

ra tyo san-o cha  
 and it small-M be.PRS.3SG.M

‘My house is in Paris and it is small.’

While masculine/feminine gender marking is used anaphorically on adjectives and verbs, with personal pronouns providing information about humanness, numeral classifiers in Nepali are mostly used anaphorically with inanimate referents, where they typically identify nominal referents based on their physical properties and material. An example is given in (20), where the classifier *khili* ‘artificial capsule’ is used in (b) with reference to the object previously mentioned in (a).

(20) Anaphoric use of numeral classifiers in Nepali

(a) tapai kati khili  
 you.HIGH.HON INTER.QUANT CLF.ARTIFICIAL.CAPSULE

cuurot Ram-lai dinuhuncha?  
 cigarette Ram-to give.PRS.2SG.HIGH.HON

‘How many cigarettes are you giving to Ram?’

(b) Ram-lai dui khili dinchu  
 Ram-to two CLF.ARTIFICIAL.CAPSULE give.PRS.1SG

‘I am giving Ram two.’

Second, classification markers can also be used deictically to indicate a referent that is obvious from the context, without mentioning the noun overtly. Such use of masculine/feminine gender markers and third person pronouns is illustrated in (21), where two people are talking about a girl and a boy sitting next to them in a coffee shop. The personal pronoun indicates that the referent is human but does not provide detailed information about its biological gender, which in turn is indicated by the masculine/feminine agreement on

the adjective and the verb, as demonstrated by masculine agreement in (a) and feminine agreement in (b).

(21) Deictic use of gender in Nepali

(a) u ramr-o cha  
 he/she beautiful-M be.PRS.3SG.M  
 'He is handsome.'

(b) u ramri che  
 he/she beautiful-F be.PRS.3SG.F  
 'She is beautiful.'

While neither the masculine/feminine gender nor the human/non-human pronoun can be used to indicate a specific referent within a group of inanimates (since all inanimates are non-human and masculine), this task can be fulfilled by numeral classifiers, as shown in (22). In a situation where sheets of paper and cigarettes are lying on a table, the speaker may refer to the former with the respective classifier *pana* (in (a)) and to the latter with the classifier for artificial capsules *khili* (in (b)). In both cases, the speaker does not need to use the nouns *kagaaj* 'paper' and *cuurot* 'cigarette' since the classifiers clarify the reference.

(22) Deictic use of numeral classifiers in Nepali

(a) ma das pana caanchu  
 I ten CLF.2D want.PRS.1SG  
 'I want ten (with reference to the sheets of paper on the table).'

(b) ma das khili caanchu  
 I ten CLF.ARTIFICIAL.CAPSULE want.PRS.1SG  
 'I want ten (with reference to the cigarettes on the table).'

Finally, classification markers can help disambiguate between antecedents. As in anaphora and deixis, both the masculine/feminine and the human/non-human gender systems can be used to identify a specific referent within a group of potential referents. The masculine/feminine gender can disambiguate between animate referents while the human/non-human gender can disambiguate between male humans and inanimates. An example of disambigu-

ation with the masculine/feminine gender is illustrated in (23), where the masculine/feminine gender marking on the general classifier and the verb in (b) helps to identify one of the two referents that have been introduced in (a), without the need to repeat the nouns.

(23) Use of gender markers for disambiguation in Nepali

(a) Sarita ra Ram mer-aa saathi-haru hun  
 Sarita and Ram my-PL friend-PL be.PRS.3PL  
 ‘Sarita and Ram are my friends.’

(b) eu-t-i London-ma bosche ra  
 one-CLF.GENERAL-F London-at live.PRS.3SG.F and  
 eu-t-a Paris-ma boscha  
 one-CLF.GENERAL-M Paris-at live.PRS.3SG.M  
 ‘One lives in London and one lives in Paris.’

Other numeral classifiers are predominantly used to disambiguate among inanimate antecedents. As shown in (24) and (25), classifiers in Nepali are used analogously to those in Mandarin Chinese. Thus in (24) it is clear that the reference is made in (b) to a cigarette rather than an apple due to the use of the classifier *gen1* for long-shaped objects rather than the classifier *ke1* for round-shaped objects.

(24) Use of numeral classifiers to disambiguate between antecedents in Mandarin Chinese

(a) wo3 mai3 le0 yi4 gen1 yan1  
 I buy PRF one CLF.LONG.HARD cigarette  
 han4 yi4 ke1 ping2guo3  
 and one CLF.ROUND apple  
 ‘I bought a cigarette and an apple.’

(b) na4 yi4 gen1 wo3 gei3 John le0  
 that one CLF.LONG.HARD I give John PRF  
 ‘I gave that one (cigarette) to John.’



84). Further examples are provided by emergent gender systems: for example, in Miraña (Bora-Witotoan; Colombia) the choice between general and specific class markers allows different degrees of specification of the referent (Seifart 2005: 258–262).

A related example of the relationship between the type of marking and the prominence of the referent in discourse is provided by animate nouns in Nepali. As shown in §3.1, nouns denoting animals are always masculine when used generically, while overt gender suffixes or feminine agreement marking on adjectives are used when the female referent is more specific. For example, when referring to a female pigeon, if the pigeon is not prominent in discourse then masculine agreements are used, as in *eu-t-a parevaa* (one-CLF.GENERAL-M pigeon(M)) ‘one pigeon’. In contrast, if the pigeon is prominent in discourse then its biological gender is more likely to be specified, as in *eu-t-i (pothi) parevaa* (one-CLF.GENERAL-F (female) pigeon(F)) ‘one (female) pigeon’. Admittedly, such differentiation is restricted to feminine animates, since masculine animates are by default masculine and their grammatical gender does not alter depending on the discourse context. This restriction points to the limited extent to which gender in Nepali can be used for reference management.

As regards classifier languages, the discourse status of the referent can be signalled by the presence or choice of a classifier. This is illustrated in example (26) from Mandarin Chinese, where the degree of salience correlates with the presence of a classifier and the degree of modification within the NP. Thus, the salience of the tree in (a) is reflected in the presence of a complex NP including the specific classifier *ke1* for trees, together with the modifiers *xian1hua1 sheng4hai1 de0* ‘with blooming flowers’ and the adjective *da4* ‘big’. In contrast, the mountain in (b) is not prominent in the context and so the noun *shan1* does not appear with a classifier or modifiers.

(26) Use of numeral classifiers in Mandarin Chinese to foreground NPs  
(Li 2000: 1119, glosses modified)

- (a) Kuafu si le. tade guanzhang dunshi bian cheng  
 Kuafu die PRT his walking.stick immediately change into  
 le yi ge xianhua shengkai de da taoshu.  
 PRF one CLF.GENERAL flowers blooming MOD big peach.tree.  
 ‘Kuafu died. His walking stick immediately changed into a large  
 peach tree with blooming flowers.’

- (b) Pangu si hou, tade zhiti bian cheng le shan.  
 Pangu die after his body change into PRT mountain.  
 ‘After Pangu died, his body changed into a mountain.’

A correlation between the presence of a classifier and the salience of the referent is also found in Nepali. For example, in (27) the mouse as the main character of the story is mentioned several times, with the noun *musa* being introduced with the general classifier along with a modifying adjective *thul-o* ‘big-M’, while the house only provides a background setting and so the noun *ghar* ‘house’ does not appear in a classifier construction. Alternatively, *ghar* ‘house’ could appear with a classifier if its referent were considered to be more salient.<sup>19</sup>

- (27) Use of numeral classifiers in Nepali to foreground NPs

eu-t-a                      thul-o musa              ghar-ma boscha  
 one-CLF.GENERAL-M big-M mouse(M) house-at live.PRS.3SG.M  
 ‘A big mouse lives in a house.’

musa alchi chaina  
 mouse lazy be.PRS.3SG.M.NEG  
 ‘This mouse is not lazy.’

musa              dinabhari ghar-bhitra ghumcha  
 mouse(M) day.whole house-inside move.PRS.3SG.M  
 ‘This mouse runs inside the house all day.’

Discourse status can also be signalled by the choice of a classifier. For example, in Mandarin Chinese a specific classifier is used for the first mention of a referent, being substituted in the following discourse with a general classifier or a construction which does not require a classifier. This is illustrated in example (28), where the specific classifier for vehicles *liang4* is used in (b) to introduce the new referent *jiao3ta4che1* ‘bicycle’ and is then replaced in (c) by the general classifier *ge0*.

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<sup>19</sup> The absence of a classifier in the following occurrences of *musa* ‘mouse’ can be attributed to the absence of a numeral construction.

- (28) Use of specific and general classifiers in Mandarin Chinese (adapted from Erbaugh 1986: 408)
- (a) cong2 nei4bian1 guo4lai2 yi2 ge0                      xiao3 hai2zi0 uh  
 from there over come one CLF.GENERAL small child uh  
 ‘From over there comes a child, uh,’
- (b) ... qi2 qi2 qi2zhe0 yi2 liang4                      jiao3ta4che1 uh  
 ride ride ride.PROG one CLF.VEHICLE bicycle uh  
 ‘ride ..., ride, riding a bicycle, uh’
- (c) shi4 yi2 ge0                      hen3 ke3ai4 de0 xiao3 de0 jiao3ta4che1  
 be one CLF.GENERAL very cute MOD little MOD bicycle  
 ‘(it) is a very cute little bicycle.’

A similar effect of the use of specific and general classifiers is found in Nepali. As shown in (29), *pana*, a specific classifier, is first used in (a) to introduce a new referent, i.e., sheets of paper, which are referred to again on two occasions in (b) by the general classifier. In the first instance, the general classifier *duita* is fused with the numeral, while in the second one it occurs as an independent form in *wota*.

- (29) Use of specific and general classifiers in Nepali
- (a) tebul-ma ti pac pana kagaj chan  
 table-at on five CLF.2D paper be.PRS.3PL  
 ‘There are five sheets of paper on the table.’
- (b) dui-t-a                      laam-aa chan  
 two-CLF.GENERAL-M long-PL be.PRS.3PL  
 ra tin wot-a                      chot-aa chan  
 and three CLF.GENERAL-M short-PL be.PRS.3PL  
 ‘Two are long and three are short.’

As a summary, while the use of gender for reference management is restricted, the saliency of the referent in discourse can be indicated either by the presence of a classifier or the choice of a general or specific classifier.



- (b) Paris-ma kam garcha  
Paris-at work do.PRS.3SG.M
- (c) *u angreji bolche ra u ramr-i che*  
he/she English speak.PRS.3SG.F and he/she beautiful-F be.PRS.3SG.F  
'I have a friend. (He) works in Paris. She speaks English and she is beautiful.'

A change in the speaker's perspective can also be indicated by the choice of a different classifier. Example (31) from Mandarin Chinese illustrates how the choice of a different numeral classifier can indicate a change of the physical properties of the referent. The speaker initially refers to a sheet of paper with the conventional numeral classifier *zhang1* for two-dimensional objects with a fixed form; however, once the sheet has been rolled, the speaker uses the numeral classifier *juan3* for rolled-shape objects.

- (31) Re-presentation of the referent by numeral classifiers in Mandarin Chinese

wo3 na2 le0 yi4 zhang1 zhi3 ran2hou4 yong4 cheng2 le0  
I take PRF one CLF.2D paper then make into PRF  
yi4 juan3 gei3 ni3  
one CLF.ROLLED give you

'I took a sheet of paper and made a tube for you.'

Numeral classifiers in Nepali can also be used to indicate a change in the speaker's perspective towards the referent. Such changes can involve either the degree of respect towards an animate referent or the inherent properties of an inanimate referent. The latter use is illustrated in example (32). The speaker first refers to betel nuts as fruits using the classifier for round fruits *dana*. However, he switches to a general classifier and then the specific classifier for artificial capsules when the betel nuts have been prepared for consumption.

- (32) Re-presentation of the referent by numeral classifiers in Nepali

- (a) *mai-le rukh-bata das dana supari tipe*  
I-ERG tree-from ten CLF.ROUND.FRUIT betel nut take.PAST.1SG  
'I took ten betel nuts from the tree.'

- (b) tyaspachi mai-le ghar-ma  
 then I-ERG house-at  
 das wot-a supari tayar pare  
 ten CLF.GENERAL-M betel nut ready make.PAST.1SG  
 ‘Then, I prepared the ten betel nuts at home.’
- (c) Ram-le supari khana manparaucha  
 Ram-ERG betel nut eat like.PRS.3SG.M  
 ‘Ram likes to eat betel nut.’
- (d) tyasaile mai-le tin khili  
 so I-ERG three CLF.ARTIFICIAL.CAPSULE  
 Ram-lai diye  
 Ram-to give.PAST.1SG  
 ‘So I gave three to Ram.’

In conclusion, the degree to which gender and numeral classifiers in Nepali are exploited for discourse functions depends on their semantic and morpho-syntactic properties. Thus, the use of masculine/feminine gender marking is restricted due to its obligatory nature and absence of differentiation among inanimates. In contrast, numeral classifiers can be employed for the same discourse functions but predominantly with reference to inanimates. This applies to the majority of specific classifiers which are used with inanimate nouns, with the general classifier used with both animates and inanimates.

## 5. Discussion

While in §4 we have examined individual lexical and discourse functions of the nominal classification systems in Nepali, we will now focus on the degree to which these systems interact in terms of functionality. In addition, we will discuss the implications of the concurrent nominal classification systems in Nepali for our understanding of the types and functions of nominal classification systems in general as well as the role of language contact in their history. Finally, we will offer a number of suggestions for future research on Nepali and other languages with concurrent systems.

We first turn to a comparison of the functions expressed by gender and numeral classifiers. The respective functions are summarized in Table 11.

Table 11. Functions of nominal classification systems in Nepali.

Type of function	Gender	Numeral classifiers
Lexical functions		
Expansion of the lexicon	Yes (expression of size among inanimates with masculine/feminine gender markers)	No (classifiers are not affixed to nouns)
Differentiating referents	Yes (indication of masculine/feminine among animates)	Yes (expression of size and shape among inanimates)
Individuation	No (lack of uses of gender marking to distinguish between individuated and non-individuated senses of a noun)	Yes (classifiers individuate all nouns for the purpose of quantification)
Attributing properties	Yes (expression of the speaker's attitude towards animate referents by gender shift between masculine and feminine)	Yes (expression of degrees of respect towards animate referents by classifier choice)
Discourse functions		
Reference identification	Yes (use of the two gender systems to introduce, identify and disambiguate among referents).	Yes (use of classifiers to introduce, identify and disambiguate among inanimate referents, and of the general classifier among animate and inanimate referents)
Reference management	Restricted (borderline examples among non-human animates)	Yes (use of the presence of a classifier or choice between a general and specific classifier to signal the discourse status of the referent)
Re-presentation of the referent	Yes (use of the masculine/feminine gender to indicate a change in the speaker's perspective towards an animate referent)	Yes (use of a different classifier to indicate a change in the speaker's perspective towards an animate or inanimate referent)

With regard to the gender systems, the masculine/feminine and human/non-human systems are represented in the same column since the latter is only

used for reference identification. Even though both gender systems are used for this function, we argue, however, that there is no functional overlap. Specifically, there is no overlap in terms of forms, since the two systems are expressed by different forms (pronouns vs. agreement markers), and in terms of semantics, since the two systems are unpredictable with respect to each other as both human and non-human nouns can be masculine or feminine and vice-versa.

We thus focus on the interaction between the masculine/feminine gender system and the classifier system. In the majority of cases, both systems are exploited for the same functions. Shared functions include differentiating referents, ascribing properties, reference identification and re-presentation of the referent. In contrast, the remaining functions are restricted due to the expression of the two systems, i.e., expansion of the lexicon (only in the masculine/feminine gender), individuation (only in numeral classifiers) and reference management (predominantly in numeral classifiers). The overlap in the functions conveyed by the two systems and the role of the formal means of expression conform to the predictions made by Contini-Morava & Kilarski (2013) with regard to the functions of nominal classification systems in general.<sup>20</sup> However, the fact that two gender systems and one classifier system co-occur in Nepali further allows us to observe the uses of co-existing nominal classification systems, a situation that was not taken into account by Contini-Morava & Kilarski (2013). Thus, the functions summarized in Table 11 above point to a complementary distribution of workload between these systems, which can be attributed to differences in not only their formal expression but also the type of classified nouns and the expressed meanings. We will now consider clear cases of complementary distribution in terms of functionality and then we will move on to less straightforward ones.

A complementary distribution of functions between the masculine/feminine gender and numeral classifiers occurs in the case of two lexical functions and one discourse function. First, in lexical expansion, gender is used to express size differences among inanimates while numeral classifiers are not applicable for this function since they can convey size but cannot be used to create new lexical items. At the same time, such uses of gender are

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<sup>20</sup> Our use of the term “overlap” differs from the one employed by Contini-Morava & Kilarski (2013). We use the term with reference to contexts in which both gender and numeral classifiers are exploited for a given function with the same set of nominal referents, i.e., either animate or inanimate. In contrast, Contini-Morava & Kilarski (2013) use it with reference to the use of both gender and classifiers for the same function, where for example both are used to avoid ambiguity in discourse.

untypical since they occur among inanimates rather than animates as in the other functions and the expression of agreement depends on style. Second, in individuation, classifiers individuate both animate and inanimate nouns for the purpose of quantification, while no examples have been attested of the use of gender to indicate degrees of individuation. And third, with regard to reference management, the presence of a classifier or the choice between a general and specific classifier can be used to signal the discourse status of the referent, while only borderline examples have been found of related uses of gender, where the grammatical gender of nouns for feminine non-human animates depends on their prominence in discourse.

In contrast, the remaining functions provide cases of apparent functional overlap. However, here we deal with two types of differences with respect to the type of classified nouns and the meanings that are expressed. First, with regard to the type of classified nouns, in differentiating referents, gender markers are used to indicate sex among animates while numeral classifiers are used to indicate size and shape distinctions among inanimates. Analogously, in reference identification, both the masculine/feminine and human/non-human gender systems can be used to introduce and identify referents, with the former further being used to disambiguate among animate referents. In contrast, numeral classifiers are used for reference identification predominantly among inanimate referents, with the masculine and feminine forms of the general classifier also used for animate referents. Second, with regard to the expressed meanings, even though both the masculine/feminine gender and classifiers are used to indicate the speaker's attitude towards an animate referent, they express different meanings, i.e., affection vs. respect. Likewise, in re-representation of referents, the choice of both a different gender, i.e., masculine vs. feminine, and a different classifier can be used to indicate a change in the speaker's perspective, with the use of gender restricted to animates and classifiers used both with animates and inanimates. However, gender and classifiers express different meanings regarding animate referents, i.e., affection vs. respect, analogously to the expression of affective meanings mentioned above. Therefore, all these cases do not qualify as functional overlap in the narrow sense, which leads us to conclude that here we also deal with cases of functional differentiation.

The complex interaction between gender and numeral classifiers in Nepali provides new evidence regarding morphosyntactic and functional properties of concurrent systems of nominal classification. The functional analysis of the three co-existing nominal classification systems allows us to evaluate more general principles of functionality with regard to grammatical cate-

gories. As mentioned above in §2, Sinnemäki (2019) interpreted the complementary distribution of gender vs. numeral classifiers in terms of a complexity trade-off. Since both types of systems have related functions – as illustrated in detail in the present paper – the fact that they are rarely combined in the same language can be explained in terms of economy and distinctiveness as avoidance of multiple patterns in the same functional domain (cf. Zipf 1949; Hawkins 2004). What we have examined in this paper is a situation where two gender systems and a classifier system combine in a single language, which is an exception to the complementary distribution observed by Sinnemäki (2019) and others. Still, even in this case the co-occurrence of the three systems can be accounted for in terms of economy and distinctiveness as they have a largely complementary functional distribution, where a) a function may be expressed by only one system; b) the gender systems and classifiers may be functionally exploited with different types of nouns, e.g., animate vs. inanimate; and c) both gender systems and classifiers may be functionally exploited for the same function in the same category of nouns in which case, however, they convey different meanings.

While the aim of this paper was not to analyse the history of gender and numeral classifiers in Nepali, the data we provide also contributes to ongoing discussions concerning the diachrony of nominal classification, in particular the role played by language contact. As an Indo-European language, Nepali possesses gender phylogenetically but it has also acquired numeral classifiers as a result of contact with neighbouring classifier languages. This is in fact the more likely scenario, where languages with gender borrow classifiers rather than vice versa, as illustrated by Emeneau (1956) in his seminal study of the South Asian language area. Classifiers spread to neighbouring languages more easily than gender since classifiers are based on a more transparent semantic categorisation of nouns, being expressed by single, often free morphemes without an agreement system. This tendency can be interpreted in terms of the continuum of matter-borrowability in nominal modifiers proposed by Matras (2009: 218), based on “the degree of transparency and consideration of the referential individuality of nouns”. The components to the left of the continuum have the highest likelihood of borrowing: derivation marker > classifier > plural marker > definiteness marker > case marker. Since gender markers behave similarly to case markers, we could speculate that they are located on the right side of this continuum. In which case, gender markers would be considered as more stable than classifiers in terms of a typological parameter (cf. Dediu & Cysouw 2013; Sinnemäki 2019).

Specific developments involving gender and numeral classifiers in Nepali are also subject to different sociolinguistic motivations, leading to conflicting outcomes in terms of morphosyntactic complexity. Since gender is more morphosyntactically entrenched, it is more complex and “mature” in Dahl’s (2004) terms. Thus, according to Dahl (2004: 2), agreement systems belong to the type of linguistic features that “... pass through a number of successive stages, during which they ‘mature’, that is, acquire properties that would not otherwise be possible.” Such features are more likely to develop in small, stable communities with close social networks, being lost or reduced in “suboptimal transmission” (Dahl 2004: 274), e.g., among less fluent younger speakers, in adult L2 acquisition and language death. Within Trudgill’s (2011) “sociolinguistic typology”, the emergence and loss of morphosyntactic complexity is also attributed to social and demographic criteria. These include the size of a community, type of social network (loose vs. dense), degree of social stability, amount of shared information, and the degree and type of contact with other communities. For example, simplification involves the loss of irregularity, increase of transparency, loss of morphological categories and loss of syntagmatic and paradigmatic redundancy, while complexification involves the opposite developments.

The history of gender and numeral classifiers in Nepali can thus be interpreted in terms of social factors as well as the type and degree of language contact. Thus, on the one hand, the lack of feminine agreement in informal speech, which constitutes gender loss, is an example of simplification that can be attributed to the use of Nepali as a second language by speakers of languages without gender.<sup>21</sup> For instance, gender loss is much more frequent among the sociolects of Nepali spoken by bilingual Tibeto-Burman speakers and their monolingual children, e.g., in the speech of the Darjeeling dialect where the majority of the speakers come from a Tibeto-Burman family background (Pokharel 2010: 56).<sup>22</sup> On the other hand, the diffusion of numeral classifiers involves complexification, a process that is more likely to occur in conditions of stable, long-term and co-territorial contact, as in the case of the contact with Tibeto-Burman languages in the east of Nepal. As an example,

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<sup>21</sup> The absence of differentiation of feminine agreement in informal speech in Nepali is discussed in, e.g., Matthews (1998: 150), Riccardi (2003: 555) and Upadhyay (2009: 575).

<sup>22</sup> In turn, the preservation of gender in certain varieties of Nepali can also be attributed to language contact, as illustrated by the influence of Hindi on written Nepali, where “... the continued marking of the feminine in verbal forms, and the persistence of feminine endings for some nouns and adjectives may be attributable at least in part to these strong features of Hindi grammar.” (Riccardi 2003: 545).

our preliminary data shows that more extensive inventories of classifiers are found in the east of Nepal in the area where Tibeto-Burman languages are spoken (cf. Noonan 2003: 75). In contrast, in the west, closer to areas where Indo-Aryan languages are spoken, as in central Nepal in Kathmandu, Nepali speakers use fewer classifiers, mainly the general classifier *wota* and the human classifier *jana*. In addition, this variation in the inventories of classifiers may also involve urban vs. rural settings (Oliver Bond, p.c.): as in most languages of the world, standard Nepali is based on the variety of the most populated capital region, and it is this variety that has predominantly been dealt with in previous studies.

Finally, our analysis of the nominal classification systems in Nepali points to a number of issues that need to be addressed in future research. Considering the degree of variation that has been reported in the expression of the three systems, data is needed from a wider range of varieties of Nepali not only in terms of the relative proximity to Sino-Tibetan vs. Indo-European languages but also with regard to the status of Nepali as the first or second language in urban vs. rural communities. In the former case, variation would be primarily attributed to language contact while in the latter case it would involve differentiation between standard and non-standard/spoken varieties. As mentioned above (cf. §3.1 and §3.2), variation in Nepali involves not only the size of inventories of both gender and classifiers but also the choice of masculine or feminine agreement forms in informal speech. A more representative account of the variation in the expression of gender and numeral classifiers would further allow us to determine the degree to which the functional relationships observed here between the two types of systems apply in varieties characterized by different agreement patterns and inventories of gender vs. classifiers.

## 6. Conclusions

In this paper we have examined Nepali, a language spoken at the meeting point of the Sino-Tibetan and Indo-European families. Nepali was chosen due to the co-existence of different types of nominal classification systems, which is typologically and statistically a rare phenomenon. By applying the typology of Fedden & Corbett (2017), we have shown that Nepali has two gender systems and one numeral classifier system. Then, by using the functional typology of nominal classification proposed by Contini-Morava & Kilarski (2013), we have demonstrated that the gender systems and numeral

classifiers in Nepali have a largely complementary distribution of workload with respect to particular lexical and discourse functions. In addition, we have pointed to the implications of these concurrent nominal classification systems for our understanding of the functionality of grammatical categories as well as the effects of language contact on nominal classification.

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## ABBREVIATIONS

2D, two-dimensional; CLF, sortal classifier; ERG, ergative; F, fem., feminine; HIGH.HON, high honorific; INTER.QUANT, interrogative quantifier; LOW.HON, low honorific; M, masc., masculine; MENS, mensural classifier; MID.HON, middle honorific; MOD, modifier particle; NEG, negative; neut., neuter; PAST, past; PL, plural; POSS, possessive; PROG, progressive; PRS, present; PRF, perfective; PROX, proximal; PRT, particle; SG, singular. Speech levels (LOW.HON, MID.HON, HIGH.HON) are only indicated in the glosses when relevant to the discussion; otherwise low honorific forms (LOW.HON) are indicated.

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**Address correspondence to:**

Marcin Kilarski  
Faculty of English  
Adam Mickiewicz University  
Collegium Heliodori Świącicki  
Grunwaldzka 6  
60-780 Poznań  
Poland  
kilarski@amu.edu.pl