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Library of Congress Cataloging-in-Publication-Data

Approaches to the typology of word classes / edited by Petra M. Vogel, Bernard Comrie. p. cm. - (Empirical approaches to language typology ; 23) Includes bibliographical references and index. ISBN 3-11-016102-8 (hardcover: alk. paper). - ISBN 3-11-016783-2 (pbk.: alk. paper) 1. Parts of speech. 2. Grammar, Comparative and general - Grammatical categories. 3. Universals (Linguistics) I. Vogel, Petra Maria. II. Comrie, Bernard, 1947. III. Series. P270 A76 2000 415-dc21 99-055227

Die Deutsche Bibliothek - Cataloging-in-Publication-Data

Approaches to the typology of word classes / ed. by Petra M. Vogel ; Bernard Comrie. - Berlin ; New York : Mouton de Gruyter, 2000 (Empirical approaches to language typology ; 23) ISBN 3-11-016783-2 brosch. ISBN 3-11-016102-8 Gb.

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Printing: Werner Hildebrand, Berlin Binding: Lüdertiz & Bauer-GmbH, Berlin Printed in Germany.

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Empirical Approaches
to Language Typology

23

Editors

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Approaches to the Typology
of Word Classes

edited by

Petra M. Vogel
Bernard Comrie

Mouton de Gruyter
Berlin · New York

Mouton de Gruyter
Berlin · New York 2000

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When can a language have adjectives? An implicational universal

Jan Rijkhoff

1. Introduction*

Data from a representative sample of the world's languages indicate that adjectives only occur in languages in which the numeral is in a direct construction with a noun (that is, the numeral does not occur with a sortal classifier), but not vice versa. In my sample Hmong Njua is the only counterexample, but I will show that Hmong Njua classifiers have assumed other functions and that the language has developed some kind of regular number marking (which is unusual for a classifier language). This suggests that Hmong Njua does not use the kind of noun that is commonly employed in a classifier language. Ultimately I will argue that the occurrence of adjectives as a major word class is not so much related to the absence of classifiers, but rather depends on a semantic property of the nouns in that language. A language can only have adjectives if the nouns in that language are lexically specified for the feature [+Shape], which means that the properties that are designated by these nouns are characterised as having a spatial boundary.

2. Parts-of-speech systems

It is generally acknowledged that not every language has a distinct class of adjectives (cf. Dixon 1982; Pustet 1989; Bhat 1994; Wetzer 1996; Stassen 1997). This can be due to two reasons: either the language does not clearly distinguish between adjectives and members of other major word classes (verbs, nouns) or the language simply lacks a distinct class of adjectives, in which case other means are used to express adjectival notions (like a relative clause headed by a stative verb or an adnominal NP headed by an abstract noun). This is clearly shown in the typology of parts-of-speech systems proposed by Hengeveld (1992).

Flexible	1	V/N/A	
	2	V	N/A
Specialised	3	V	N
	4	V	N
	5	V	-

Figure 1. Parts-of-speech systems (based on Hengeveld 1992: 69)

Hengeveld's classification actually has seven types, because it also includes (mainer) adverbs. Since adverbs are irrelevant in the present context I have collapsed three of Hengeveld's types (V-N-A/ADV, V-N-A-ADV, V-N-A) into one (Type 3: V-N-A) in Figure 1. In defining the word classes Hengeveld took as the starting point the function of a content word ("predicate") in a linguistic expression (Hengeveld 1992: 58):

A *verbal* predicate is a predicate which, without further measures being taken, has a predicative use *only*.

A *nominal* predicate is a predicate which, without further measures being taken, can be used as the head of a term.

An *adjectival* predicate is a predicate which, without further measures being taken, can be used as a modifier of a nominal head.

An *adverbial* predicate is a predicate which, without further measures being taken, can be used as a modifier of a non-nominal head.

In certain languages some or all of the functions mentioned above are clearly distributed over distinct, non-overlapping groups of predicates (specialised languages; Types 3, 4, and 5); in other languages some or all of these functions can be performed by the same group of predicates (flexible languages; Types 1 and 2).

Samoan is an example of a language with extremely flexible predicates, since "[a]lmost any part of speech can be used as any other part of speech" (Churchward 1951: 126). Consider also the following citation from Mosel—Hovdhaugen (1992: 77, 73, 74):

Many, perhaps the majority of, roots can be found in the function of verb phrase and noun phrase nuclei and are, accordingly, classified as nouns and as verbs. ... This does not mean that a noun can be used as a verb or a verb as a noun or that we have two homophonous words, one being a noun and the other being a verb. Rather, it means that in Samoan the categorization of full words is not given a priori in the lexicon. It is only their actual occurrence in a particular environment which gives them the status of a verb or a noun. ... What is given in

the lexicon, is not a particular word class assignment, but the potential to be used in certain syntactic environments as a noun or a verb.¹

Although certain full words seem to be used more as verb or more as a NP nucleus for semantic reasons, there are no lexical or grammatical constraints on why a particular word cannot be used in the one or the other function.

Most Samoan equivalents of English adjectives, particularly the typical ones, are full words which function not only as attributes, but also as a noun or verb phrase nucleus, for example, *lelei* "(be) good", *leaga* "(be) bad"; and conversely, all full words which function as noun and verb phrase nucleus can also be used as attributive modifiers.²

Thus, it is basically the presence of non-lexical elements that indicates what particular function such predicates fulfil. If a flexible predicate serves as the head of the clause, it will typically combine with tense/aspect/mood (TAM) particles; if it serves as the head of the term it will appear with an article, a preposition, etc.

Whereas Samoan has a single class of lexemes whose members combine the prototypical functions of verb, noun and adjective (V/N/A), the Australian language Ngiyambaa is said to have two major word classes: verbs and so-called "nominals" (i.e. V-N/A; Donaldson 1980: 68). The class of nominals includes nouns as well as lexemes that would be translated as adjectives in English. Although there is a morphological difference in that only a subclass of lexemes of the N/A type permits reduplication, this is attributed to ontological rather than linguistic factors (Donaldson 1980: 70-71):

Semantically, nominals are divided into two groups; those which are not subject to productive reduplication and those which are. When rejecting a reduplicated version of a nominal which cannot be reduplicated, Eliza Kennedy [a native speaker informant—JR] would explain: "Either it is that, or it isn't." It was therefore nonsensical to reduplicate, which is equivalent to prefacing the form with 'more-or-less' or 'somewhat'. Thus **miri-miri* was rejected, because one cannot have a 'more-or-less dog', while *gi:dja-gi:djan* 'more-or-less green, greenish' is an acceptable form.

Nominals which do not reduplicate are normally translated by English nouns, and those which do undergo reduplication are normally translated by adjectives. The possibility of productive reduplication could be advanced as a formal criterion for similarly dividing Ngiyambaa nominals into two sub-classes, noun and adjective. But in Ngiyambaa there are no known further differences, morphological or syntactic, as between non-reduplicating and reduplicating nominals.

Syntactically, for instance, any nominal which can be a constituent of part of a NP can also be the sole representative of a NP ... *gi:djan* may translate as either 'green' or '(a/the) green one'. To introduce the term 'noun' and 'adjective' as synonyms for 'non-reduplicating' and 'reduplicating' would serve no descriptive purpose elsewhere in the grammar.

Dutch, on the other hand, does have a distinct class of adjectives according to Hengeveld's definition. Consider the following examples:³

- (1) *een grootA huisN* house
a big house
'a big house'

Members of other word classes like nouns or verbs require special treatment ("further measures") before they can modify the head noun (in (2a) the noun takes the adjectivalising suffix *-achtig* '-like'; in (2b) the verb appears in a participial form):

- (2) a. *een jongen[s]r-achtig gezicht* face
a boy[s]-like face
'a boyish face'
b. *een hollend-e man* man
a run-PRES.PARTIC man
'a running man'

The Australian language Kayardild also belongs to the third type (V-N-A) according to the definition above: it has verbs, nouns, and a major class of about one hundred adjectives, that is, words that "can normally only appear when qualifying an overt [NP] head. Thus in normal contexts *jungarra daitija* [big came] is unacceptable, as is *dathina jungarra daitija* [that big came]; an entity nominal like *dangkaa* 'person' is necessary, as in (*dathina*) *jungarra dangkaa daitija* '(that) big man came'" (Evans 1995: 234; cf. also Evans 1995: 238).

The Papuan language Galela (spoken on the island of Halmahera) is a clear example of language without a distinct class of adjectives (V-N). If we take the Galela equivalent of the English adjective 'big' *lamo* and let it function as a modifier of the noun, we must also add a third person pronoun. This is because in Galela this property is expressed through a verbal predicate ('be.big') whose sole argument must be explicitly expressed in the form of a pronominal element. Thus the whole phrase is rather like a subordinate clause. Furthermore, if used attributively, the first syllable of the verbal predicate in question is reduplicated, yielding the participial form (Van Baarda 1908: 35-36).

- (3) *awi dõhu i lalamo*
his foot it be.big:PARTIC
'his big foot'

Some languages without adjectives use abstract nouns in possessive constructions to express adjectival notions such as colour, shape, size, weight, age, value, human propensity (cf. Dixon 1982). Consider, for instance, this example from Hausa (Schachter 1985: 15):

- (4) *mutum mai alheri/arzaki/hankali*
person having kindness/prosperity/intelligence
'a kind/prosperous/intelligent person'

I am not aware of an uncontroversial example of a language with only a major class of verbs, but the Iroquoian language Cayuga comes close to a Type 5 language (V). According to Sasse (1988, 1993) all predicates are basically verbal (although some are more restricted than others regarding the verbal morphology), but Mithun (this volume) contends that many forms that Sasse analyses as predications (with a verbal nucleus) are in fact nouns—at least functionally.

The fifty languages in Figure 2, which constitute a representative sample of the world's languages (cf. Rijkhoff et al. 1993), are all classified according to

Type 1	V/N/A	Samoaan
Type 2	V-N/A	Hurrian, Imbabura Quechua
Type 3	V-N-A	Abkhaz, Alambiak, Basque, Berbice, Bukiyip (Mountain Arapesh), Burushaski, Dutch, Guarani, Hittite, Hmong Njua, Hungarian, Ika, Kayardild, Ket, Nama Hottentot, Nasioi, Ngalkan, Ngiti, Oromo, Sumerian, Wambon
Type 4	V-N	Babungo, Bambara, Burmese, Chukchi, Galela, Gilyak, Gude, Hixkaryana, Kisi, Koasati, Korean, Krongo, Lango, Mandarin Chinese, Nung, Nunggubuyu, Pipil, Sarcee, Tamil, Tsou, Vietnamese, West Greenlandic
Type 4/5 unknown	V(-N) —	Cayuga Etruscan, Meroitic, Nahali

Figure 2. Parts-of-speech systems in sample languages

Hengeveld's typology of parts-of-speech systems outlined above (languages in bold print employ sortal classifiers; more on this below).⁵ Three languages could not be classified due to a general lack of information about their parts-of-speech systems:

the language isolates Nahali, Etruscan and Meroitic (the latter two are extinct). Since languages are always in a state of flux, there are probably no absolutely "pure" types.⁶ This is perhaps best illustrated with languages of Type 4 (Cayuga is also a case in point, of course). Several languages in this group resist straightforward classification, because besides verbs and nouns, they also have a small number of adjectives. Consider, for example, the following remarks on Tamil adjectives (Asher 1982: 186–187):⁷

The question of whether it is appropriate to recognise a separate morphological category of adjective in Tamil has long been debated, on the grounds that all but a very small handful of adjectival modifiers of nouns are derived forms. The set of those that cannot be derived from noun or verb roots comprises such high-frequency items as *nalla* 'good', *periya* 'big', *cinna* 'small', *putu* 'new', *pazaya* 'old', and a few basic colour terms ...

Most other adjectives are either derived from verb roots (for instance, *kette* 'bad', which in morphological terms is the past relative participle of *ketu* 'get spoiled') or formed by the addition of one of two adjectivalizing suffixes.

In the current sample Bambara appears to have the most sizeable minor word class "adjective" (that is, two dozen or so). To the extent that the number of adjectives could be established, languages of type 3 (V–N–A) all seem to have a distinct class of at least one hundred basic (underived) adjectives.

3. Sortal classifiers and adjectives

Languages can be divided into two types with respect to numeral-noun constructions: languages in which the numeral is in a direct construction with the noun it modifies and languages in which the numeral requires the occurrence of a so-called sortal classifier (more on classifiers in section 4.1 below). Compare, for instance, this example from Burmese (Okell 1969: 209) and its English translation:

- (5) *hkwēi hnā kwiñ*
dog two CL
'two dogs'

Whereas in English the numeral modifies the noun directly, in Burmese it requires the appearance of an extra constituent: a sortal classifier. The sample contains seven languages that employ sortal classifiers: Burmese (see above), Gilyak, Korean,

Mandarin Chinese, Hmong Njua, Nung, and Vietnamese (all in bold print in Figure 2 above).

- (6) a. Mandarin Chinese (Ilic 1994: 100)
wǔ bēn shū
five CL book
'five books'
- b. Gilyak (Comrie 1981: 269)
qan mor
dog two:CL [animal]
'two dogs'
- c. Korean (Lee 1989: 55)
mal du mali
horse two CL
'two horses'
- d. Hmong Njua (Harriehausen 1990: 100)
ob tug naab
two CL snake
'two snakes'
- e. Nung (Saul—Freiberger Wilson 1980: 23)
slóng tú luhc
two CL child
'two children'
- f. Vietnamese (Nguyễn Đình-Hoà 1987: 785)
ba quyển sách
three CL book
'three books'

When we consider the distribution of classifier languages and non-classifier languages over the various parts-of-speech types introduced in section 2, it appears that, apart from Hmong Njua, all classifier languages belong to Type 4 (V–N) and that in almost every language with a distinct class of adjectives (Type 3) the numeral is in a direct construction with the noun (again, Hmong Njua is the only exception). I will argue below that this is no coincidence and that adjectives only occur in languages in which nouns have a certain lexical feature that is typically absent in nouns of a classifier language. I will then demonstrate that Hmong Njua does not constitute a true counterexample because its nouns also have this particular feature, despite the fact that it also employs classifiers. Due to insufficient information, I will ignore

Gilyak (or: Nivkh), which, incidentally, is a rather special case since it only uses classifiers with the first five numerals (Comrie 1981: 269).

3.1. The expression of adjectival notions in languages with sortal classifiers

In section 2 I claimed that—apart from Hmong Njua—no classifier language in the sample has a major class of adjectives. Here we will consider evidence to support this claim.

In Mandarin Chinese, as in many other Asian languages, adjectival notions are expressed by a verb; this also explains the absence of a copula in the Mandarin counterpart of sentences such as English 'X is (very) pretty'. In Mandarin the modifying verb is followed by the 'relativiser' (Gao 1994: 494) or 'nominaliser' *de* (Li—Thompson [1989]: 118; compare Gao 1994: 494).⁸

- (7) a. *Mǎli hěn piàoliàng*
 Mary very pretty
 'Mary is very pretty'
- b. *yī-wèi hěn piàoliàng de gūniang*
 one-CL very pretty DE girl
 'a very pretty girl'

Consider also the following remarks by Li—Thompson ([1989]: 826–827), but recall that in terms of the definitions provided in section 2 above only the third criterion is most relevant:

Strictly speaking, there is no class of words in Chinese that we can call 'adjective'. That is, while there are certainly words which denote qualities or properties of entities, from a grammatical point of view it is difficult to distinguish 'adjectives' from 'verbs'. First, in Chinese, words denoting qualities and properties do not occur with a copula as they do in Indo-European languages. ... Second, quality and property words in Chinese are negated by the same particle *bù* as are verbs: ... Thirdly, when an 'adjective' modifies a noun, it occurs with the same nominalizing particle *de* as verb phrases do ... For these reasons, it is sensible to consider quality and property words in Chinese simply as a subclass of verbs, one which we might call 'adjectival verbs'.

There is also a construction without *de*, but this seems to form a more or less lexicalised compound (Li—Thompson [1989]: 119) (cf. also, for example, Huang 1989; Chappell—Thompson 1992; Sackmann 1996):

In general, adjectives that modify the noun without the particle *de* tend to be more closely knit with the noun. The consequence is that the adjective-plus-noun phrase tends to acquire the feature of being a *name* for a category of entities. The relative clause usage of adjectives, on the other hand, always has the function of further clarifying or delineating the reference of the head noun.

Compare:

- (8) a. *hōng de huā* b. *hōng huā*
 red DE flower red flower
 'a flower that is red' 'a red flower'

Perhaps the difference is best captured by comparing English 'black bird', i.e. 'a bird that is black' and 'blackbird', that is, the kind of bird that belongs to the species 'blackbird'. Similar differences in meaning between the free modifier-noun construction and the compound form are attested in other classifier languages in the sample. In Vietnamese, for instance, the difference is mainly indicated by different stress patterns (Löbel 1995: 9, 15, 34–37). Thus, depending on the pronunciation, *dào dài* [dress be.long] is translated as 'long dress' ('dress which is long') or as 'long-dress' ('kind of dress that is typical of Asian women').

Apparently "adjectival" attributes in Burmese and Korean are all derived verbal forms. In the following example from Burmese *ǎ-pya* is the derived form of the verb *pya* 'be blue' (Okell 1969: 47, 50, 79).

- (9) *eingj ǎ-pya* (or with the order reversed: *ǎ-pya eingj*)
 shirt ǎ-be.blue
 'blue shirt'

In Korean, according to Martin—Lee (1969: 110, 202–203), adjectival notions are expressed by verbs in their "modifier form", which means that they appear with the suffix $-(u)n$. Compare:

- (10) a. *khun [= khe + un] cip*
 be.large [= be.large + UN] house
 'large house, house which is large'

- b. *mək-un sālām*
eat-UN person
'person who ate, person who has eaten'

In Vietnamese, too, verbal elements are used to express adjectival notions in that modifiers expressing these notions behave the same as descriptive or stative verbs (cf. Emeneau 1951: 85; Thompson 1965: 217; Nguyễn Đình-Hoà 1987: 785, 790; Nguyễn Đình-Hoà 1997: 119; Löbel 1995: 9); sometimes the modifying phrase is introduced by the conjunction *mà*).¹⁰

- (11) a. *con chó nhỏ này*
CL dog be.small this
'this small dog' (Thompson 1965: 124)
- b. *con dao (mà) anh cho tôi mượn*
CL knife (MA) you give me borrow
'the knife you lent me' (Nguyễn Đình-Hoà 1997: 174)

Nung adjectives do not seem to behave differently from attributive or predicative verbs either; hence Saul—Freiberger Wilson (1980: 32) treat them as "simple, reduplicated or complex descriptive verbs":

- (12) a. *vahng lōng*
boy be.big
'the big boy' (Saul—Freiberger Wilson 1980: 33)
- b. *sōng óhng déhc kihn hó tê*
two CL child eat beg those
'those two begging children' (Saul—Freiberger Wilson 1980: 69)
- c. *vahng khi tú bê*
boy ride CL goat that
'that boy (who was) riding the goat' (Saul—Freiberger Wilson 1980: 16)
- d. *ahn ho'n câu lẹn khâu pay tê*
CL house I run into go that
'the house I was running into' (Saul—Freiberger Wilson 1980: 79)

Sometimes the relative marker *ị* or *ị-vạ* 'who/which' is used (Saul—Freiberger Wilson 1980: 78–82):

- (13) *kê (ị-vạ) tóhc cộn*
man (who) lost CL
'the man who had lost the stone' FOC

Hmong Njua is the only classifier language in the sample with a distinct, major class of adjectives. For example, there is a clear difference between modifying verbs and adjectives in that the former need to be part of a relative clause introduced by the relative pronoun *kws* whereas adjectives do not appear with such a conjunction; compare (Harriehausen 1990: 144; more will be said about the use of Hmong Njua classifiers below):

- (14) a. *ab̄ phau ntawn loj nua*
two CL book big DEM
'these two big books'
- b. *tug miv tub kws ua si miv*
CL boy REL play small
'the playing boy (or: the boy who is playing) is small'
- c. *lub ruuj kws kuv yuav kim*
CL table REL 1SG buy expensive
'the table that I bought was expensive' (Harriehausen 1990: 141)

In sum, Hmong Njua is the only classifier language in the sample that has a distinct class of adjectives.

4. Nouns: Seinsart and nominal aspect

In the previous sections we saw that a distinct, major class of adjectives only tends to occur in languages in which the numeral modifies the noun directly. The only counterexample in the sample was Hmong Njua, which has both adjectives and sortal classifiers. In other words, so far we have only found evidence for a statistical implication:

- A If a language has adjectives, then the numeral tends to modify the noun directly (that is, in most languages that have adjectives the numeral does not require the occurrence of a sortal classifier), but not vice versa.

Below I will argue that it is also possible to formulate an absolute implication and that it is not so much the presence of absence of numeral classifiers that determines whether a language can have adjectives, but rather a lexical feature of the noun. First, however, we need to discuss some cross-linguistic aspects of noun semantics

(I will mainly restrict myself to nouns that are used for discrete spatial entities in the physical world).

4.1. Nouns, numerals, and number marking

This section provides an outline of major noun types (or: nominal subcategories) from a cross-linguistic perspective. I will argue that across languages nouns that are used in connection with discrete and non-discrete spatial entities in the real world (i.e. individual objects and masses) can be defined in terms of two lexical features, viz. Shape and Homogeneity, and that each of these noun types basically defines a different "Seinsart" ("mode of being"; the nominal counterpart of the verbal category "Aktionsart", "mode of action"; Rijkhoff 1995 Note 20). Before we continue, however, it may be useful to emphasise that referents of NPs are not objects in the external world, but rather mental constructs that are created, stored and retrieved in the minds of the speech participants. Since discourse referents are to a considerable extent construed on the basis of linguistic material, there may be certain discrepancies between linguistic properties of discourse referents and ontological properties of their real-world counterparts (if they exist—since we can also talk about things that do not exist in the physical world). We will see below that this holds especially true with respect to the features Shape and Homogeneity.

It appears to be very useful to regard nouns from different languages with respect to number marking and the way they combine with attributive cardinal numerals. Compare the following examples from Dutch and Thai:¹¹

- (15) Dutch
- | | | | | | | |
|----|-------------|----|----------------|----|-------------|----------------|
| a. | <i>boek</i> | b. | <i>boek-en</i> | c. | <i>drie</i> | <i>boek-en</i> |
| | book | | book-PL | | three | book-PL |
| | 'book' | | 'books' | | | 'three books' |
- (16) Thai
- | | | | | | |
|----|---------------|----|-------------------|------------|---------------------------|
| a. | <i>rôm</i> | b. | <i>rôm</i> | <i>sām</i> | <i>khan</i> |
| | umbrella | | umbrella | three | CL [long, handled object] |
| | 'umbrella(s)' | | 'three umbrellas' | | |

Whereas in Dutch an unmarked noun (such as *boek* 'book') defines a singular, discrete object, the Thai noun can be used to refer to one or more objects. Furthermore, the meaning definition of a Thai noun does not seem to include the notion of spa-

tial boundedness or discreteness.¹² Since only discrete entities can be counted, it is generally assumed that this is the reason why in languages such as Thai the numeral must combine with a sort classifier (here: *khan*), which functions as a kind of individualiser (Lyons 1977: 462). Consider these remarks by Hundius—Kölver (1983: 166, 181–182):¹³

[Thai nouns] purely denote concepts and, for this reason, are incompatible with direct quantification. ...

As is the typical case in isolating languages, Thai nouns do not in themselves contain any numerical or referential indications. ... they are purely *conceptual labels* which, in order to be appropriately related to objects of the non-linguistic world, always and in principle stand in need of interpretation which has to be inferred from both linguistic and non-linguistic context.

- (17) *plaa wâaj jiu naj mée nám*
 fish swim remain in river
 'fish swim in rivers' [generic], 'the fish/fishes swims/swim in a river/rivers', 'a fish/fishes swim(s)/swam in the river/a river etc.'

Similar statements about the *indeterminateness* of nouns (and verbs) can be found in many grammars of languages that are spoken in Southeast Asia, suggesting this is an areal phenomenon (cf. Bisang 1999: 114):

In East and Southeast Asian languages, a noun expresses only a mere concept of an object which can be further specified—if necessary—by various operations. Thus, an expression like e.g. Chinese *xìn* can mean 'letter, letters, a letter, the letter, etc.' according to a given context. This high degree of indeterminateness of nouns is a very important characteristic of East and Southeast Asian languages (Bisang 1993, 1996) which is crucial to the existence of classifiers.

I will call nouns that occur with sortal (or: numeral) classifiers *sort nouns*.¹⁴ Furthermore, since sort nouns do not seem to include in their meaning the notion of spatial discreteness I will assume that they are all characterised by the lexical feature [-Shape]. Sortal classifiers must be distinguished from mensural classifiers, which specify size, volume or weight and which typically occur with another nominal subcategory that is characterised by the feature [-Shape], viz. mass nouns (see, for example, Greenberg 1972 and Hundius—Kölver 1983 on the differences between sortal and mensural classifiers):

1. sort nouns, which require a sortal or numeral classifier when modified by a numeral;
2. mass nouns, which require a mensural classifier when modified by a numeral;
3. general nouns, which require a general classifier when modified by a numeral.

The feature that makes it possible to distinguish between these three nominal subcategories is *Homogeneity*. Before we continue it may be useful to emphasise once again that a referent is a mental construct, whose properties need not coincide with those of its ontological correlate in the external, extra-linguistic world, and that I am proposing a linguistic classification of nouns and not an ontological classification of spatial entities. Although Shape and Homogeneity are basically ontological features, I am here only interested to establish if (and how) these features are also part of the lexical semantics of nouns in a representative selection of the world's languages.

Mass nouns such as English 'water' and 'gold' define [+Homogeneous] entities because they are cumulative (or: agglomerative) and—up to a point—dissective (Goodman 1966). If we add some water to a liter of water we still have: water (cumulative/agglomerative); after we have drunk some of the water that is contained in a glass, the glass will still contain: water (dissective). Sort nouns like Thai *rôm* 'umbrella, umbrellas', on the other hand, define non-homogeneous entities: we cannot refer to an something as 'an umbrella' if it is something more or less than an (one) umbrella (as when, for example, essential parts are missing). We could say that a referent defined by a mass noun consists of portions, whereas an entity defined by a sort noun consists of parts or components. Adding portions gives you more of the same *mass entity*, but adding parts does not give you more *sort entities*.

Since the kind of classifier used in Yucatec Maya suggests that this language does not distinguish between sort nouns and mass nouns (see (3.4) above), I presume that general nouns are neutral with respect to the feature Homogeneity.

SPACE	-HOMOGENEITY		+HOMOGENEITY
-SHAPE	general noun		mass noun
	sort noun		

Figure 3. Nominal subcategories that require numerals to occur with a classifier

There are also three nominal subcategories which do not require the attributive numeral to first combine with some kind of classifier (hence they all carry the feature [+Shape]): (a) singular object nouns, (b) collective nouns, and (c) set nouns. It appears that they, too, can be further differentiated on the basis of the feature Homogeneity.

(18) Dutch

- | | |
|-------------------------|-------------------------|
| a. <i>een fles wijn</i> | b. <i>een pond kaas</i> |
| a bottle wine | a pound cheese |
| 'a bottle of wine' | 'a pound of cheese' |

(19) Thai (Hundius—Köivler 1983: 168, 170)

- | | |
|-----------------------------|--------------------------------|
| a. <i>dinnīaw sāam kōon</i> | b. <i>nāamītaan sāam thūāj</i> |
| clay three lump | sugar three cup |
| 'three lumps of clay' | 'three cups of sugar' |

Besides sortal and mensural classifiers there is another kind of classifier type, which is attested in, for instance, Yucatec Maya. Classifiers in this language seem to combine the functions of sortal and mensural classifiers (Lucy 1992: 74):¹⁵

Outside of the restriction on compatibility with other classifiers, little in the grammar of Yucatec appears to hinge on, or correlate with, this "sortal" ... versus "mensural" distinction, and it is difficult to know what status it should be given.

(20) a/one-CL banana

- | | | |
|---------------------|--------------|---|
| a. <i>'un-φ'it</i> | banana | 'one/a 1-dimensional banana (i.e. the fruit)' |
| b. <i>'un-wáal</i> | <i>há'as</i> | 'one/a 2-dimensional banana (i.e. the leaf)' |
| c. <i>'un-p'éel</i> | <i>há'as</i> | 'one/a 3-dimensional banana (e.g. the fruit)' |
| d. <i>'un-kínul</i> | <i>há'as</i> | 'one/a planted banana (i.e. the tree)' |
| e. <i>'un-kínch</i> | <i>há'as</i> | 'one/a load banana (i.e. the bunch)' |
| f. <i>'un-p'it</i> | <i>há'as</i> | 'a little-bit/some banana' |

Lucy's remarks also suggest that in Yucatec Maya there is no clear distinction between sort nouns and mass nouns. I will call such nouns *general nouns* and the classifiers that are used with these nouns *general classifiers*. As could be expected, nouns in Yucatec Maya also carry the lexical feature [-Shape] since semantically the properties that are designated by these nouns are characterised as being not spatially bounded (Lucy 1992: 83, 43).

In sum, even though nouns such as Thai *rôm* and Yucatec *há'as* are used to refer to discrete spatial objects in the external world (such as an umbrella or a banana), the notion of spatial discreteness does not seem to be part of the meaning. So far we have identified three types of noun (nominal subcategories) that are characterised by the feature [-Shape]:

Singular object nouns are nouns that in their unmarked form denote a single object (for instance, Dutch *fiets* 'bike'), whereas a collective noun designates a property of a group of individuals (for example, Dutch *gezin* 'family'). Plural marking is obligatory for singular object and collective nouns, both with and without a modifying numeral:

- (21) Dutch: N_{singular:object}
- a. *fiets* bike 'bike'
fiets-en bike-PL 'bikes'
- b. *twee fiets-en* two bike-PL 'two bikes'
- (22) Dutch: N_{collective}
- a. *gezin* family 'family'
gezin-en [spelled: *gezinnen*] family-PL 'families'
- b. *twee gezin-en* [two *gezinnen*] two family-PL 'two families'

Singular object nouns, like sort nouns, designate non-homogeneous (non-cumulative, non-dissective) properties. The referent of the noun phrase 'a bike' N_{singular:object} is a complete whole: adding parts to or taking away parts from the referent of 'a bike' does not give you more or less/fewer 'bike' or 'bike entities'.

A collective noun like *gezin* 'family', on the other hand, does define an agglomerative/dissective entity. When a family is expanded (as when, for instance, children are born into the family) you still have a (one) family, that is, adding members to a family gives you a bigger family but not more families (cf. the example with portions of water above). Similarly, when a family member dies, the others are still family. Thus, both mass nouns and collective nouns define homogeneous entities.

Now compare the Dutch noun *huis* 'house' and the Oromo noun *mina* 'house(s)' (see below on the so-called plural in Oromo; see also Note 10).

- (23) Dutch: N_{singular:object}
- a. *huis* house 'house'
huis-en [spelled: *huizen*] huis-PL 'houses'

- b. *twee huizen* two house:PL 'two houses'
**twee huis* two house
- (24) Oromo: N_{set}
- a. *mina* house 'house, houses'
mina-eeni [= *minneeni*] house-PL 'houses'
- b. **minneeni lamaani* house two 'two houses'
mina lamaani house two 'two houses'

There is an important difference in that the unmarked Dutch noun in (23) denotes a single object, whereas the unmarked noun in Oromo (24) can be used to refer to one or more singular objects (Andrzejewski 1960: 71). Furthermore, in Oromo the unmarked form must be used with a numeral ($n \geq 2$), whereas in Dutch the plural form is obligatory in such cases. In both languages, however, the numeral is in a direct construction with the noun. It also appears that the so-called plural marker in Oromo (which is optional without a numeral and obligatorily absent with a numeral) is better characterised as a collective marker.¹⁶ "In general, nouns with plural suffixes refer to a counted or countable group of items, whereas the possible plural meaning of nouns unspecified for plural is more general and vague. If a noun is counted by means of a numeral, then there is no plural suffix" (Stroomer 1987: 76).

Elsewhere (Rijkhoff 1991, 1992, 1995) I have labelled nouns such as Oromo *mina* as *set nouns* (a set may contain any number of objects, including '1') that is, transnumeral nouns which are used to refer to a set of discrete spatial objects and which can be in a direct construction with a numeral. Some Oromo nouns (notably ethnonyms) may also occur with a *singularive suffix*, so there are actually two ways to disambiguate the transnumeral character of set nouns in Oromo (Stroomer 1987: 83, 87; BOW = the three Oromo dialects Boraana, Orma and Waata):

BOW nouns denoting animate beings, in particular ethnonyms, can take the singularive suffixes *-aa* (masculine), and *-tiij* (feminine); these suffixes are preceded by the epiphetic vowel *i*; *t* is sometimes inserted between the noun root and the singularive suffix. In BOW ethnonyms these suffixes are productive.

In BOW these [singularive—JR] suffixes basically have the meaning of indicating an individual out of a group ...¹⁷

- (25) a. *nama* 'man/men' a'. *namica* 'a/the man'
 b. *nad'eeni* 'woman/women' b'. *nad'ittii* 'a/the woman'

Now, if both in Dutch and in Oromo we are dealing with a number marker, why do these markers behave so differently? The answer I have proposed is that the Oromo affixes are not number markers at all but grammatical elements to indicate that the noun designates a property of a set which consists of one object (singleton set) or to signal that the set consists of multiple objects which together form a collective (collective set). This hypothesis is supported by the fact that in the grammars of languages with set nouns it is often explicitly stated that the so-called plural marker basically has a collective meaning.¹⁸

Since properly speaking the elements in question specify what kind of set we are dealing with (that is, they relate to inherent or qualitative properties of the referent), I have called them *singularitative* and *collective aspect markers*, or, more generally, *nominal aspect markers* (see Rijkhoff 1995 on nominal and verbal aspect marking, *Seinsart* and *Aktionsart*, and other parallels between NPs and sentences).

If we accept that the so-called number marker on a set noun is actually a nominal aspect marker, we can explain certain differences between the (real) number marker on singular object nouns and collective nouns and the so-called number marker on set nouns:

- (i) that the collective aspect marker on a non-numerated set noun is in many languages optional (if used at all) is due to the fact that the property designated by a set noun may also apply to multiple objects without this marker,
- (ii) that the collective aspect marker is normally absent when the set noun is modified by a numeral can be explained if we accept that the numeral does not specify the number of sets (as it specifies the number of singular objects or collectives in the case of a singular object noun or a collective noun), but the number of members contained in the (single) set. In other words, when a set noun is modified by a numeral we do not get more sets; instead the numeral indicates the size or cardinality of the (single) set.

Furthermore, we can now explain why languages with set nouns often display number discord, as in this Oromo sentence (Stroemer 1987: 107):

- (26) *gaala lamaa sookoo d'ak'-e*
 camel two market go-3SG:MASC:PAST
 'two camels went to the market'

In spite of the fact that we clearly have a non-singular subject ('two camels'), the verb is inflected for the singular. In such cases agreement is not with the number of objects in the set, but with the set entity as such, which is always singular (Rijkhoff 1993). The same phenomenon is attested in many other languages with set nouns; the following example is from Lango (Noonan 1992: 168):

- (27) *gúlu ádék ócò*
 pot three 3SG:die:PERF
 'three pots broke'

Thus, set nouns are like general nouns in that they share one feature with two other nominal subcategories and are neutral with respect to the other feature. Recall that general nouns, which occur with general classifiers, are characterised by the feature [-Shape], just like sort nouns [-Shape/-Homogeneity] and mass nouns [-Shape/+Homogeneity], but they are neutral with respect to the feature Homogeneity. Set nouns, which are modified directly by a numeral, are characterised by the feature [+Shape], just like singular object nouns [+Shape/-Homogeneity] and collective nouns [+Shape/+Homogeneity], but since they can be used to refer to a singleton and a collective set they are also neutral with respect to the feature Homogeneity.¹⁹

4.2. A new classification of nominal subcategories

Six nominal subcategories can now be defined on the basis of the features Shape and Homogeneity:

	-HOMOGENEITY	+HOMOGENEITY
SPACE		
-SHAPE	sort noun	general noun
		mass noun
+SHAPE	singular object noun	set noun
		collective noun

Figure 4. Cross-linguistic typology of major nominal subcategories

If the property designated by a noun is coded as having shape (+Shape), this means that the property (and by extension: the referent of the NP, a mental construct) is characterised as having a definite outline in the spatial dimension; consequently set nouns, singular object nouns and collective nouns can all be in a direct construction with a cardinal numeral. If the property designated by a noun is coded as being homogeneous (+Homogeneity), this means that the space for which this property holds (and by extension: the referent of the NP) is characterised as being agglomerative (or disjunctive).²⁰ In other words, the referent of a NP headed by a noun that is coded as being homogeneous consists of *portions* (of a mass) or *members* (of a collective). *General nouns* and *set nouns* are neutral with respect to the feature Homogeneity.

It is not clear why the feature Shape is relevant for all noun types, whereas the feature Homogeneity is part of the meaning definition of only four nominal subcategories. Nevertheless, this classification confirms Friedrich's (1970: 380) observation that 'the category of shape appears to be a typological universal in grammar ... and of not inconsiderable significance for a theory of semantics in grammar'.

Recall that this is a linguistic rather than an ontological classification in that it is only based on morphosyntactic and semantic properties of nouns.²¹ As for the terminology, I could also have used labels such as Type A and Type B etc., but for mnemonic reasons I have tried to use names which say something about the lexical semantics of each nominal subcategory. Furthermore, since this is a linguistic and not an ontological classification, there is in principle no direct relationship between noun type and (real world) entity type. This is, of course, precisely the reason why it is possible that different noun types (singular object noun, set noun, sort noun, general noun) can be used across the world's languages to refer to an entity whose ontological correlate in the external world is a single and discrete spatial object.

I have discussed this classification of nominal subcategories, since I want to argue now that Hmong Njua, the only classifier language in the sample that has a distinct class of adjectives, employs set nouns (with the lexical feature [+Shape]) rather than sort nouns (with the lexical feature [-Shape]).

5. The case of Hmong Njua

This section takes a closer look at expressions of singularity, plurality and collectivity in classifier languages. In the preceding sections I have argued that the employment of any kind of classifier (mensural, sortal, general) in a numeral-noun construction indicates that the noun does not include in its meaning the notion of spatial discreteness; hence all nominal subcategories that require the modifying numeral to combine first with a classifier were characterised by the feature [-Shape] in the noun classification presented above. In Hmong Njua, however, it appears that classifiers have expanded their function and are now (also) used as markers of singularity and collectivity, that is, the two distinctions which are typically coded on set nouns [+Shape]. Ultimately, I will argue that Hmong Njua has set nouns rather than sort nouns and that it is the [+Shape] feature of set nouns that makes it possible for this language to have a distinct class of adjectives.

5.1. Classifiers

Classifiers can be the source for various grammatical categories but it seems that in all languages they can also be used as anaphoric constituents (for some references see Rijkhoff 1992: 48, Note 13).²²

(28) Mandarin Chinese (Bisang 1999: 147–148)

zhèi shì shū. Zhāngsān mǎi-le yì běn, ...
DEM COP book. Zhangsan buy-PERF one CL, ...
'These are books. Zhangsan bought one (of them), ...'

Cross-linguistically it is also not uncommon for classifiers to occur with a demonstrative modifier (cf. Greenberg 1975; Bisang 1999), as in:

(29) *zhè běn shū*
this CL book
'this book'

However, in the current sample Hmong Njua is the only classifier language which requires the classifier to appear not only with numerals and demonstratives but also with possessive modifiers (Harriehausen 1990: 117):

(30) Hmong Njua

a. *ob tug muam*
two CL sister
'two sisters' (Harriehausen 1990: 100)

b. *phau nitawv muav*
CL book DEM
'this book'

c. *kaiv phau nitawv*
1SG CL book
'my book' (Harriehausen 1990: 129)

Furthermore, only in Hmong Njua are classifiers also used to express definiteness or specificity (Harriehausen 1990: 117; cf. also Bisang 1993, 1996, 1999):

Im Vergleich mit dem Artikelsystem Indo-Europäischer Sprachen kann Hmong Njua definite vs. indefinite NPn durch das Hinzufügen/Weglassen der Kategoriewörter ausdrücken. Dies ist allerdings nur in einfachen NPn möglich, d.h. in

denen das Nomen nicht weiter durch Zahlwörter, Demonstrativ- oder Possessivpronomen modifiziert wird. [In comparison to the system of articles in the Indo-European languages, Hmong Njua can express definite vs. indefinite NPs by adding/omitting classifiers. This is, however, only possible in simple NPs, that is, NPs in which the noun is not further modified by numerals, demonstratives or possessive pronouns.]

Compare (Harriehausen 1990: 117):

- (31) a. *kav* *ɣuav* *tsev*
 1SG buy house
 'I buy a house/(some) houses'
- b. *kav* *ɣuav* *lub* *tsev*
 1SG buy CL house
 'I buy the house'

As could be inferred from the translations of some of the examples provided here, Hmong Njua classifiers can also serve to mark grammatical number (or rather: nominal aspect); this is discussed in the next two sections.

5.2. Nominal singularity in classifier languages

As pointed out above sort nouns are transnumeral in that the same (unmarked) form can be used to refer to one or more objects. Thus Mandarin *shū* means 'a/the book' or '(the) books'. Presumably singular number can always be expressed by using the attributive numeral 'one' (plus classifier), as in *yi bēn shū* 'one CL book', but in some classifier languages the numeral 'one' can be omitted, so that the CL+N construction implies indefinite, singular reference. In the sample this is attested in at least the following languages: Mandarin Chinese, Hmong Njua, Nung, and Vietnamese. In Standard Mandarin Chinese, however, the numeral 'one' can only remain unexpressed "in the postverbal object position, not in the subject position" (Bisang 1999: 178, Note 16).

In the case of Nung it is simply stated that "when a classifier occurs with a noun without a numeral, the numeral 'one' is automatically understood" (Saul—Freiberger Wilson 1980: 15, 27):

- (32) *mu'hn* *nəhng* *tiŋh* *cōn* *thiŋh*
 he sit upon CL stone
 'he sat on a stone'

The CL+N construction is also attested in Vietnamese (Kölver 1982: 169–173), but in a recent study on Vietnamese classifiers Löbel (1995) shows that semantically and morphosyntactically we are not always dealing with the kind of construction discussed above. In some cases the construction is a definite nominal compound used for anaphoric reference (as in 33a) and in other instances it is indeed a numeral-classifier construction which (optionally) involves the numeral 'one' (as in 33b) and which is typically used to introduce a new referent. Compare the following examples (Löbel 1995: 37):

- (33) a. *con* *quạ*
 CL raven
 'the raven' (aforementioned)
- b. *(môt)* *con* *quạ*
 (one) CL raven
 'a raven' (not aforementioned)

The difference between (33a) and (33b) (without *môt* 'a, one') is not visible in writing, but they have clearly different stress patterns. In (33a) the classifier bears the main stress, whereas in (33b) the classifier has only weak stress. If the anaphoric compound is used to refer to a plural entity in the preceding discourse, the so-called plural marker is obligatory (more on *nhũ'ng* below).

- (34) *nhũ'ng* *con* *quạ*
 PL CL raven
 'the ravens' (aforementioned)

Löbel (1995: 37) writes that the nominal compound is used "when it is not possible to refer to a referent which or who has already been introduced by means of a pronoun; this might be due, for instance, to a change of frame", but adds that "[t]he conditions under which it is necessary to use a pronoun or the corresponding anaphoric compound are not quite clear ..."

We already saw in section 5.1 that in Hmong Njua the classifier is also used to express definiteness (rather than indefiniteness).

- (35) *kav* *ɣuav* *lub* *tsev*
 1SG buy CL house
 'I buy the house'

Thus, whereas in other languages the CL+N construction is generally analysed as an indefinite NP involving the numeral 'one' (which remains unexpressed), this is apparently not the case in Hmong Njua, where the NP has definite reference.²³ Harriehausen 1990 does not explicitly state that the CL+N construction also has sin-

gular reference (as is suggested by the translation), but according to the Miao Language Team (1972: 16) this is indeed the case (cf. also Bisang 1993: 26; Wang 1972: 125): "With the exception of the Hsiang hsi dialect, classifiers may occur as single modifiers of the noun to indicate definite singularity".

5.3. Nominal plurality in classifier languages

Let us now take a closer look at plural marking in the classifier languages in the sample. It has been known for at least some decades that as a rule, nominal 'plural' marking is at most optional in a classifier language and (if used at all) often restricted to human or animate nouns: "Numerical classifier languages generally do not have compulsory expression of nominal plurality, but at most facultative expression" (Sanches—Slobin 1973, as cited in Greenberg 1974: 25).

It seems, however, that these so-called plural markers in these languages have little in common with the obligatory markers of nominal plurality as they are found in, for instance, Dutch and English. I will argue that in most cases they are better regarded as quantifiers (equivalent to English quantifiers such as 'several', 'some' and 'many') and that in Hmong Njua (and probably Mandarin Chinese) we are dealing with a collective (aspect) marker rather than a plural marker.

The element that comes closest to a nominal plural marker in Mandarin Chinese is the suffix *-men*, which also implies definiteness (see Note 27). However, it is used only occasionally and its occurrence is restricted to human nouns (cf. Norman 1988: 159; see also Iljic 1994; Li—Thompson [1989]: 40, 83; Chao 1961: 40):

Number is obligatorily expressed only for the pronouns. The same plural suffix found in the pronouns, *-men*, can also be employed with nouns referring to human beings; however, the resulting forms differ from English plural nouns in several ways. They are not used with numerals; they are not obligatory in any context; and they tend to refer to groups of people taken collectively. Examples: *húzizimen* '(a certain) group of children', *lǎoshīmen* 'the teachers'.

Several studies have been devoted to the rare and "versatile" Korean plural marker *tul*, but many of its syntactic and semantic properties remain unclear (see, for example, Seok Choong Song 1975; Kuh 1986; Lee 1991; Kim 1993; Kang 1994; Sohn 1994: 268–269). For instance, it can occur in many different places in the sentence and although it is clear that *tul* cannot be characterised as a plural marker (Song 1997), there seems to be no consensus as to its proper meaning(s). Some state that it means 'all, several, together' (Ramstedt 1939, as quoted in Seok Choong Song 1975: 538) or 'group' (Martin—Lee 1969: 32), whereas others have argued it has a distributive meaning and even serves as a focal element (Song 1997).

The exact status of the so-called plural marker in Burmese, Nung, and Vietnamese is not quite clear either. In these languages they are all treated as members of a closed class of quantifiers (like English 'some, few', etc.) and do not seem to convey the notion of 'group' or 'collective'.

- (36) a. Burmese (Okell 1969: 96)
eifñ *hka'cigi* *lei*
 house fairly.big PL
 'fairly big houses'
- b. Nung (Saul—Freiberger Wilson 1980: 29)
mahn má hau lái
 PL dog bark much
 'the dogs are barking much'
- c. Vietnamese (Emeneau 1951: 87)
nhi'ng con trâu
 PL CL buffalo
 'the buffaloes'

In Burmese, where they are called "auxiliary nouns" (Okell 1969: 82), the three so-called plural markers (*toi*, *tei/twei* and *myá*; the differences however are not made explicit) are discussed alongside such apparently varied items as *taiñ* 'every', *ci* 'great', *hkálei/lei* 'little', *hsóhñ* 'extreme', *lau* 'approximately' and *hitè* 'only, no more'.²⁴

In Nung *mahn* 'plural' is one of the "non-specific numerators" (Saul—Freiberger Wilson 1980: 22); some other members of this class are *i* 'small amount/little', *kí* 'several', *lái* 'much/many', *táhc* 'any' and *thém* 'more'.

The Vietnamese marker for plurality *nhi'ng* is called "general quantifier" ("ein allgemeiner Quantifikator"; Köppler 1982: 170) and "pluralizer article" (Nguyễn Đăng Liém 1969: 113; cf. also Thompson 1965: 179; Emeneau 1951: 87–88) and falls in the same category as, for instance, *các* 'plural generality', *mọi* 'every' and *máy* 'restrictive plurality, some'.²⁵

Finally, in Hmong Njua the collective classifier *cov* replaces all other classifiers to express plurality or rather: collectivity. Harriehausen (1990: 115, 117) writes:

Cov ist eine "neutrale" Mengenbezeichnung, die alle Kategoriewörter ersetzen kann (daher die Bezeichnung "neutral"), wenn die Nominalphrase eine Plural-Bedeutung implizieren soll. Somit hat *cov* die Bedeutung "viele, mehrere, mehr als ein" ... [*Cov* is a neutral quantifier, which can replace all classifiers (hence the label "neutral") if the noun phrase is to imply plurality. Thus *cov* means "many, several, more than one" ...]

Ohne weitere Modifikation kann die Pluralbedeutung eines Nomens nur durch cov ausgedrückt werden. [Without further modification nominal plurality can only be expressed by cov.]

- (37) *kav* *yuav* *cov* *tsev* *hoob*
 1SG buy PL house²⁶
 'I buy (the) houses'

Compare also:

- (38) a. *kav* *lob* *hoob* *kav* *cov* *hoob*
 1SG CL room 1SG COV room
 'my room' b. *kav* *cov* *hoob*
 1SG COV room
 'my rooms'

According to Ratliff (1991) *cov* has a collective meaning and most probably derives from *cov*⁵¹ 'bunches or clusters of fruit' (superscript 51 refers to tone marks).²⁷ Although without *cov* the NP would certainly be interpreted as having indefinite reference, example (37) shows that *cov* may appear in definite and indefinite NPs.

5.4. Hmong Njua: set nouns [N_{+Shape}.]

On the basis of the data presented above we may conclude that Hmong Njua is like other classifier languages in that its nouns are transnumeral, but the fact that in this language classifiers are also used to mark both singularity and collectivity is a strong indication that Hmong Njua employs set nouns [+Shape] rather than sort nouns [-Shape], the kind of noun that is normally attested in classifier languages. Singularity is expressed by adding one of the sortal classifiers, collectivity by using the group or collective classifier *cov* (see Note 13):

- (39) a. N_{set} *tsev* N_{set} *tsev* N_{set} *tsev*
 'house(s)' b. CL:SG *lob* CL:COLL *cov* N_{set} *tsev*
 'the house' (the) houses'

As a matter of fact, Hmong Njua is the only classifier language in the sample which uses grammatical markers to indicate (definite) singularity and collectivity in both animate and inanimate nouns. Furthermore, unlike the other classifier languages that have collective marking (such as Mandarin Chinese), these markers are not rare and (as in Oromo) the collective aspect marker is mutually exclusive with a numeral (Harrichhausen 1990: 106, 117):

- (40) *kav* *pum* *peb* *tug/*cov* *tlev* *lvw*
 1SG see four CL/*COV dog big
 'I see four big dogs'

In sum, the data presented in sections 5.1–5.3 clearly set Hmong Njua apart from the other classifier languages. First, classifiers in Hmong Njua seem to have widened their functional range more than in any other language in the sample. Second, whereas number is rarely marked (if at all) in a classifier language, number (or rather: singular object and collective aspect) marking is not rare in Hmong Njua.²⁸ Thus, if it is true that Hmong Njua uses set nouns [+Shape] rather than sort nouns [-Shape], we have an exceptionless implication:

B If language L has a distinct class of adjectives, then nouns in language L are generally characterised by the feature [+Shape].

This gives us three possible combinations, each of which is attested in the sample:

1. [A & B]—languages that have a major (distinct) class of adjectives and first order nouns are generally characterised by the feature [+Shape]; that is, the language uses singular object nouns and/or set nouns, neither of which require a classifier when modified by a numeral. In the sample this involves all the languages of Type 3; for example Hungarian (Moravcsik 1997: 315).

- (41) a. *ez* *a* *pirosa* *alma* *ez* *a* *ket* *alma*
 this the red apple this the two apple
 'this red apple' 'these two apples'

2. [not A & B]—languages without a major (distinct) class of adjectives but with [+Shape] nouns (such as singular object nouns and/or set nouns); these are basically the languages that do not belong to Type 3 in Figure 2 above and which do not employ (sortal or general) classifiers: Samoan, Hurrian, Imbabura Quechua, Bambara, Galela, Gude, Hixkaryana, Kisi, Koasati, Krongo, Nung-gubuyu, Pipil, Sarcee, Tamil, Tsou, West Greenlandic. The following example is from Bambara (which only has a minor class of adjectives); *timi* 'be sweet' is one of the stative verbs that must take the suffix *-man* before it can be used as a noun attribute (Kastenholz 1989: 31, 79):

- (42) Bambara
 a. *mágoro* *timi:stative-man* *sò* *fila*
 mango be.sweet-MAN horse two
 'a sweet mango' 'two horses'

3. [not A & not B]—languages without a major (distinct) class of adjectives and without nouns that are characterised by the feature [+Shape]; these are basically the classifier languages (Hmong Njua being the exceptional case, of course; recall that Gilyak is ignored here): Burmese, Korean, Mandarin Chinese, Nung, Vietnamese. These examples are from Korean (Martin—Lee 1969: 78):

- (43) a. *khun* [= *khe* + *un*] *cip*
 bc.large [= bc.large + UN] house
 'large house, house which is large'
- b. *kāy twū mali*
 dog two CL
 'two dogs'

The following type is logically excluded: *[A & not B], that is, languages with a major (distinct) class of adjectives but without nouns that are characterised by the feature [+Shape]. Hmong Njua was the only potential counterexample in the sample: it has adjectives and uses classifiers, which typically occur in languages with sort nouns [-Shape]. But as I have argued, Hmong Njua is the only classifier language in the sample that on a more or less regular basis indicates whether the referent consists of a collective or a singleton *set* entity (rather than a sort entity). Although it is probably true that Mandarin can also express the grammatical notion of collectivity with nominal NPs, the element in question (i.e. the suffix *-men*) is rarely used and seems to be restricted to non-monosyllabic human nouns (Li—Thompson [1989]: 40). Note, incidentally, that the existence of languages with set nouns and without a major class of adjectives does not violate the implication formulated above.

6. Towards an explanation

Why can a language only have a major class of adjectives if first order nouns such as 'book' and 'girl' have the lexical feature [+Shape]? I can only attempt to provide a tentative answer here.

We saw above that languages may differ with respect to the encoding of ontological properties in the lexical information of a noun (notably regarding the features Shape and Homogeneity) and that this is precisely the reason why different kinds of nouns (general noun, sort noun, set noun, singular object noun) can be used for the same object in the non-linguistic world. Nouns in classifier languages, for example,

are generally believed to designate properties that are specified as being not spatially bounded. Thus, in the case of nouns languages have a choice: either they have nouns whose lexical features "agree" with certain ontological facts (notably [+Shape]) about the ontological correlate of the referent, or they have nouns whose lexical semantics do not mirror these ontological facts.

In the case of adjectives, however, the choice between [+Shape] and [-Shape] does not seem available, simply because there is nothing in the physical world to suggest that adjectival notions such as 'poor', 'ripe', or 'green' have (by themselves) a definite spatial outline: one can draw a picture of a house and even a waterfall, but one cannot draw a picture of 'poor' or 'ripe'.²⁹ In other words, properties designated by adjectives are all necessarily characterised by the feature [-Shape].

If indeed adjectives are characterised by the feature [-Shape], then the reason why they only occur in languages with [+Shape] nouns may have to do with the fact that there is no good way to distinguish adjectives from nouns in languages using [-Shape] nouns (general nouns, sort nouns) in relation with (real-world) discrete objects. Conversely, one could hypothesise that only if a language uses [+Shape] nouns (like singular object nouns and set nouns) can it accommodate another major word class whose members are all exclusively characterised by the feature [-Shape]: adjectives.

Notes

- * I am grateful to Edith Moravcsik and Johanna Seibt for helpful discussions.
1. The text continues as follows: 'Not all roots occur with the same frequency as verbs and nouns. Some roots predominantly function as verbs, whereas others are more likely to be found in the function of nouns. Until now we have not, for instance, found *alu* 'go' in a nominal function or *mea* 'thing' in a verbal function ... But we hesitate to say that *alu* is inherently a verb and *mea* inherently a noun for two reasons. First, we cannot find any functional explanation why *alu* should not be used as a noun and *mea* as a verb, whereas, for instance, *gaoi* 'thief, to steal' and *tagaia* 'person, to be a person' are bi-functional. And, second, previous experience taught us to be careful with classifications. The more texts we analyzed, and included in our corpus, the more items were unexpectedly found in nominal or verbal function.'
 2. There are, however, a number of derived predicates carrying the causative prefix *fa'a-*, which typically occur as modifiers of the head of the term phrase (Mose—Hovdhaugen 1992: 73, 119, 175).
 3. Notice that morphosyntactic changes of the adjective that are due to agreement phenomena are irrelevant in this context. For example, Dutch attributive adjectives

- take an *-e* suffix, except in indefinite singular NPs headed by a neuter noun (*groot+e* is spelled *grote*): *het grote huis* [the:NEUT big-E house] 'the big house'.
4. The [*s*] between *jongen-* and *-achtig* is a so-called "tussenklank" (Dutch), a "concealing sound", which appears between members of a compound.
5. The fact that parts-of-speech systems are not evenly distributed among the languages in the sample probably reflects global distribution patterns. It is not difficult, however, to find other languages of types 1, 2 and 5 (or 4/5). For example, languages with one major flexible word class (Type 1: V/N/A) are not only attested in Samoan but also in other Polynesian languages such as Tongan (cf. Broschart 1991, 1997; Churchward 1953: 16), as well as in, for example, Mundari, an Austro-Asiatic language (Hoffmann 1903; Sinha 1975: 76). Many of the Turkic languages do not distinguish between nouns and adjectives (Type 2: V-N/A; see, for example, the contributions in Deny et al. 1959) and there are other Iroquoian languages, such as Mohawk (Bonvillain 1973), which resemble Cayuga (Type 4/5: V(-N)).
6. See also Hengeveld (1992: 69), who writes that "languages at best show a strong tendency towards one of the types".
7. See also Brauner (1974: 38) on Bambara, Fortescue (1984: 108) on West Greenlandic, Hoskison (1983: 53) on Gude, Childs (1995: 126) on Kisi, Lee (1989: 40) on Korean, and Campbell (1985: 120) on Pipil. The situation in Sarcee, however, is not entirely clear. Although the two most frequently used "qualifiers" (*tsit: 'á* and *tcúw*) "are obviously related to verb stems *-tsit: 'á* 'to be small' and *-tcúw* 'to be big'", Cook (1984: 67) also writes that not every qualifier is traceable to a verb stem.
8. On the verbal character of predicates expressing adjectival notions, see, for example, Chao (1961: 52) and Gao (1994: 494).
9. Cf. also Okell (1969: 49-50) and Wheatley (1987: 851) on Burmese, and Saul-Freiberger Wilson (1980: 33) on Nung.
10. The diacritic marker "°" (as in *ò*) indicates mid-low dropping pitch; the symbol "°" (as in *ò*) indicates low dropping pitch.
11. Strictly speaking all sort nouns and set nouns should be glossed with the English noun in the singular and plural (for want of a more appropriate form), but since I follow the original glosses only the bare (singular) form of the noun is given in the examples.
12. Of course, this does not mean that speakers of these languages do not know that umbrellas are discrete entities in the external world; see also Note 20.
13. See also, for example, Ilijic (1994: 99) on Chinese nouns: "In itself, out of context, the noun has a purely qualitative meaning, henceforth referred to by the term 'notation'."
14. Sortal classifiers can be further divided into classifiers that are used to count single entities (*common classifiers*) and classifiers that are used for counting discrete entities in groups (*collective* or *group classifiers*). The following examples of collective classifiers are from Burmese (Okell 1969: 211): *pyá hná si* [flower two bunch] 'two bunches of flowers'; *páñ hná owh* [bee two swarm] 'two swarms of bees'.
15. Interestingly, the classifier is not always used with Spanish numerals (Yucatec is

- spoken in Mexico), which are often used with referents involving four or more units or individuals. However, since "the syntactic significance and interpretation of these mixed constructions is quite complicated" they are not discussed in Lucy's study (Lucy 1992: 43, 51).
16. There is some variation with respect to the occurrence of the so-called number marker on non-numerated set nouns. In some languages it is compulsory (for example, Hungarian), in others it is optional (Oromo) and there are also languages in which it is totally absent (for example, most nouns in Ngiiti).
17. "Singulative markers" are regarded as one of the features in the Ethiopian Language Area (Ferguson 1976: 74; Unseth 1988: 88). The same marker has also been called "particularizing determiner", "individualis", "suffisso d'unità", "forma individuable" (Tucker—Bryan 1966: 525). Note that singularity is also explicitly expressed in the Bantu-type noun class affix and by a numeral classifier in certain languages of Southeast Asia (see below).
18. See, for example, Holmer (1947: 61, 86-87) on Cuna; Churchward (1951: 15-16) and Dixon (1988: 175) on Fijian; Beekes (1990: 213) on Proto-Indo-European; Derbyshire (1979: 126) on Hixkaryana; Merlan (1982: 86) on Mangarayi; Du Feu (1996: 135) on Rapanui; Cook (1984: 65) on Sarcee; Thomsen (1984: 59) on Sumarian; Swanton (1911) on Tingit; Benzing (1959: 722) on Chuvash; Szakos (1994: 68) on Tsou.
19. Note the difference between "dissective" and "agglomerative": both singleton and non-singleton sets are agglomerative, but only non-singleton sets can be dissected.
20. Since this is a classification of basic (underived, uninflected) nouns, it does not apply to, for example, plural forms of singular object nouns, which also denote agglomerative entities: *apple(s) + apple(s) = apples*.
21. For the same reason *Seinsarten* are not quite the same as *modi essendi*, which were developed by the group of medieval grammarians known as *Modistae* and "which were meant to provide an ontological foundation for grammar" (Gabler 1991: 567). Although both terms can be translated as "modes of existence" or "modes or being", *modus essendi* is an *ontological* notion and concerns the thing itself. *Seinsarten* on the other hand relates to the property as denoted by the noun (especially how it is specified in terms of the features Shape and Homogeneity) and is thus a linguistic category. Different languages may use different nominal subcategories (*Seinsarten*) in connection with the same thing in the extra-linguistic world. For example, whereas the real-world entity 'table' is a discrete physical object, the referent of a NP headed by the equivalent of the noun 'table' in Language L may be (depending on the nominal subcategory employed by speakers of Language L): a general entity, a sort entity, a set entity, or a singular object entity. This does not mean, of course, that the speakers of, for example, Thai or Yucatec Maya do not know that a table in the physical world is a discrete object, but this piece of knowledge is simply not part of the lexical semantics of the noun (for a similar point see, for example, Unterbeck 1993).
22. Greenberg (1975), for example, suggested that classifiers may evolve into gender or noun class markers, and a study by Hopper (1986: 342) indicates that in Malay

- classifiers may also serve as topic markers in that they typically occur with "potential topics". For a more extensive treatment of the grammaticalisation of classifiers the reader is referred to Bisang (1993, 1996).
23. I am not aware of any evidence that would indicate that we are dealing with an anaphoric compound of the kind that is attested in Vietnamese (see above). Note, however, that according to a description provided by the Miao Language Team (1972: 14) Hmong classifiers can be used for both definite and indefinite reference: "Each regular classifier has five forms, indicating the size, appearance, and definiteness of an object. Note, for example, the changes in *lu* 55 'clf. for round or hollow objects' [numbers correspond to tone values—JR]: *lu* 55 (definite or indefinite, large attractive), *loi* 55 (definite, ordinary), *lɔ* 55 (definite, tiny), *lɔi* 35 (indefinite, ordinary), *lɔ* 35 (indefinite, tiny)". In addition, it should be noted that Hmong has a fair amount of internal diversity, so it is not the case that generalisations for one variety would necessarily hold for another.
24. See also Cornyn—Roop (1968: 78): "The syllable *-lɛj* (sometimes *-lweɪ*) in noun expressions denotes the plural. It is much less common than the English plural and is used only when plurality is stressed."
25. Cf. also Vū Duy-Tù' (1983: 52) on *các* and *nhũ'ng*, who shows among other things that *nhũ'ng* has the pragmatic function of marking (expanding) focus (cf. Dik 1997: 331–335): "Die Verwendung der Substantive im Plural erfordert keine besondere Form: *các* und *nhũ'ng* werden zur Pluralbildung von Substantiven verwendet, wenn klarer hervorgehoben werden soll, daß es sich um eine Mehrzahl von Großen (Menschen, Tieren, Dingen, Angelegenheiten) handelt. ... *các* umfaßt alle Elemente der erwähnten Größe, *nhũ'ng* erfaßt nur bestimmte Elemente davon. ... *nhũ'ng* kann vor einer Zahl verwendet werden, um diese als eine (relativ) große Menge zum Ausdruck zu bringen, z.B. *chị ấy có nhũ'ng hai con mèo* 'Sie hat sogar zwei Katzen'". [To use the noun in the plural does not require a special form: *các* and *nhũ'ng* are used to form plural nouns if one wants to bring out more clearly that a plurality of kinds of entities is involved (people, animals, things, situations). ... *các* can be employed with all of these entities, *nhũ'ng* only with some of them. ... *nhũ'ng* can be used before a numeral ... to express a (relatively) large number, for instance, *chị ấy có nhũ'ng hai con mèo* 'she [literally: "older.sister"] [DEM] have PL two CLF:animal cat—JR] has even TWO cats'.]
26. Although I regard *cov* as a marker of collectivity rather than simple plurality, the glosses are those provided by Harriehausen (1990); see also Note 10.
27. See also, for example, Bisang (1996). One could hypothesise (as Ratliff indeed does; cf. Ratliff 1991: 696, 699) that ultimately *cov* may become a real plural marker. The possible diachronic relation between collective and plural markers has also been observed in, for example, Kartvelian (Tuite 1992: 271), Ket (Werner 1994: 51), the Mesoamerican languages (Suárez 1983: 86), and the Semitic languages (Kuryłowicz 1976); cf. on the same phenomenon also Kuryłowicz (1964, 1972); Jespersen (1924: 195); Meillet (1967: 66); Comrie (1981: 167); Menges (1968: 111–112)). Since collective markers appear to be a common source for (real) plural markers (Rijkhoff 1992: 90–91), one could now propose the following chain of

grammaticalisation: collective noun/group classifier > collective marker > plural marker. Since classifiers occur with sort nouns, collective aspect is marked on set nouns and plural marking is a typical feature of singular object nouns, we may also hypothesise the following development of noun types: (general noun >) sort noun > set noun > singular object noun.

28. The language that resembles Hmong Njua closest in this respect is Mandarin Chinese. The optional suffix *-men* is a grammatical element, has a collective meaning, and is mutually exclusive with numerals. Since *-men* is currently restricted to human nouns, one could hypothesise that Mandarin has an emergent category of set nouns.
29. Notice that "bigness" or "smallness" does not come in any particular shape either. Although notions such as "big" and "small" may imply a spatially bounded region, the properties by themselves (big, small) are not characterised as being spatially bounded.
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