

Noun classes and classifiers, semantics of

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Abstract

Almost all languages have some grammatical means for the linguistic categorization of noun referents. Noun categorization devices range from the lexical numeral classifiers of South-East Asia to the highly grammaticalized noun classes and genders in African and Indo-European languages. Further noun categorization devices include noun classifiers, classifiers in possessive constructions, verbal classifiers, and two rare types: locative and deictic classifiers. Classifiers and noun classes provide a unique insight into how the world is categorized through language in terms of universal semantic parameters involving humanness, animacy, sex, shape, form, consistency, orientation in space, and the functional properties of referents.

ABBREVIATIONS: ABS - absolutive; CL - classifier; ERG - ergative; FEM - feminine; LOC – locative; MASC - masculine; SG – singular

KEY WORDS:

noun classes, genders, classifiers, possessive constructions, shape, form, function, social status,
metaphorical extension

Almost all languages have some grammatical means for the linguistic categorization of nouns and nominals. The continuum of noun categorization devices covers a range of devices from the lexical numeral classifiers of South-East Asia to the highly grammaticalized gender agreement classes of Indo-European languages. They have a similar semantic basis, and one can develop from the other. They provide a unique insight into how people categorize the world through their language in terms of universal semantic parameters involving humanness, animacy, sex, shape, form, consistency, and functional properties.

Noun categorization devices are morphemes which occur in surface structures under specifiable conditions, and denote some salient perceived or imputed characteristics of the entity to which an associated noun refers (Allan 1977: 285). They are restricted to classifier constructions, morpho-syntactic units (e.g., noun phrases of different kinds, verb phrases, or clauses) which require the presence of a particular kind of morpheme, the choice of which is dictated by the semantic characteristics of the referent of the nominal head of a noun phrase.

Noun categorization devices come in various guises. We distinguish (i) noun classes, (ii) noun classifiers, (iii) numeral classifiers, (iv) classifiers in possessive constructions, and (v) verbal classifiers. Two relatively rare types are (vi) locative and (vii) deictic classifiers. They share a common semantic core and differ in the morphosyntactic contexts of their use and in their preferred semantic features.

(i) NOUN CLASSES. Some languages have grammatical agreement classes, based on such core semantic properties as animacy, sex and humanness, and sometimes also shape. The number of noun classes (also known as genders, or gender classes) varies — from two, as in Portuguese or French, to ten or so, as in Bantu, or even to several dozen, as in some languages of South

America. Noun classes can to a greater or lesser extent be semantically transparent, and their assignment can be based on semantic, morphological and/or phonological criteria. They are realized through agreement with a modifier or the predicate outside the noun itself. Examples (1) and (2), from Portuguese, illustrate masculine and feminine genders which are marked on the noun itself and on the accompanying article and adjective.

(1) o menin-o bonit-o
 ARTICLE:MASC.SG child-MASC.SG beautiful-MASC.SG
 'the beautiful boy'

(2) a menin-a bonit-a
 ARTICLE:FEM.SG child-FEM.SG beautiful-FEM.SG
 'the beautiful girl'

The cross-linguistic properties of noun classes are:

1. There is a limited, countable number of classes.
2. Each noun in the language belongs to one (or sometimes more than one) class.
3. There is always some semantic basis to the grouping of nouns into gender classes, but languages vary in how much semantic basis there is. This usually includes animacy, humanness and sex, and sometimes also shape and size.
4. Some constituent outside the noun itself must agree in gender with a noun. Agreement can be with other words in the noun phrase (adjectives, numbers, demonstratives, articles, etc.) and/or with the predicate of the clause, or an adverb.

In some languages there is a marker of noun class on every noun; in some languages nouns bear no marker. Noun class systems are typically found in languages with a fusional or agglutinating (not an isolating) profile. Languages often have portmanteau morphemes combining information about noun class with number, person, case, etc.

The semantics of noun classes in the languages of the world involves the following parameters:

- sex: feminine vs masculine, as in many Afroasiatic languages, in East-Nilotic and in Central Khoisan;
- human vs non-human, as in some Dravidian languages of India;
- rational (humans, gods, demons) vs non-rational as in Tamil and other Dravidian languages;
- animate vs inanimate, as in Siouan, from North America.

The term neuter is often used to refer to irrational, inanimate gender, or a residue gender with no clear semantic basis.

Languages can combine these parameters. Zande and Ma (Ubangi, Niger-Congo) distinguish masculine, feminine, non-human animate and inanimate. Godoberi (North-East-Caucasian) has feminine, masculine and non-rational genders.

Primarily sex-based genders can have additional shape- and size-related meanings. In languages of the Sepik region of New Guinea, feminine is associated with short, wide and round, and masculine with long, tall and narrow objects (e.g., Ndu family; Alamblak). Feminine is associated with small size and diminutives in Afroasiatic and East-Nilotic languages; masculine includes long, thick, solid objects. Hollow, round, deep, flat and thin objects are feminine in Kordofanian and Central Khoisan languages (Heine 1982: 190-1). Unusually large objects are

feminine in Dumo, a Sko language from New Guinea. See the summary in Aikhenvald (2000: 277).

In some languages most nouns are assigned to just one noun class; in other languages different noun classes can be chosen to highlight a particular property of a referent. Manambu, a Ndu language from the Sepik area, has two genders. The masculine gender includes male referents, and feminine gender includes females. But the gender choice depends on other factors, and can vary: if the referent is exceptionally long, or large, it is assigned masculine gender; if it is small and round, it is feminine.

Rules for the semantic assignment of noun classes can be more complex. The Australian language Dyirbal (Dixon 1972: 308-12) has four noun classes. Three are associated with one or more basic concepts: Class I — male humans, non-human animates; Class II — female humans, water, fire, fighting; Class III — non-flesh food. Class IV is a residue class, covering everything else. There are also two rules for transferring gender membership. By the first, an object can be assigned to a gender by its mythological association rather than by its actual semantics. Birds are classed as feminine by mythological association since women's souls are believed to enter birds after death. The second transfer rule is that if a subset of a certain group of objects has a particular important property, e.g., being dangerous, it can be assigned to a different class from the other nouns in that group. Most trees without edible parts belong to Class IV, but stinging trees are placed in Class II.

A typical gender system in Australian languages contains four terms which can be broadly labelled as masculine, feminine, vegetable and residual (Dixon 2002: 449-514). Andian (Northeast Caucasian) languages have a special noun class for insects, and Bantu languages for places (also see Corbett 1991).

The degree of semantic motivation for noun classes varies from language to language. Noun classes in Bantu languages constitute an example of a semantically opaque system. Table 1 summarizes a basic semantic grid common to Bantu noun class systems (Spitulnik 1989: 207) based on the interaction of shape, size and humanness. However, these parameters provide only a partial semantic motivation for the noun classes in individual Bantu languages. (In the Bantuist tradition, every countable noun is assigned to two classes: one singular and one plural.)

< Table 1 about here >

In modern Bantu languages, however, noun class assignment is often much less semantically motivated, though the semantic nucleus is still discernible. Thus, in Babungo, Class 1/2 is basically human; however, it is a much bigger class than it was in Proto-Bantu, and also contains many animals, some birds and insects, body parts, plants, and household and other objects, e.g., necklace, pot, book, rainbow (Schaub 1985: 175). Shape and size also appear as semantic parameters: in ChiBemba, class 7/8 is associated with large size and carries pejorative overtones, while class 12/13 includes small objects and has overtones of endearment (also see Denny 1976; Aikhenvald 2000: 281-3).

In a seminal study, Zubin and Köpcke (1986) provided a semantic rationale for the gender assignment of nouns of different semantic groups in German. Masculine and feminine genders mark the terms for male and female adults of each species of domestic and game animals (following the natural sex principle), and neuter is assigned to non-sex-specific generic and juvenile terms. Masculine gender is used for types of cloth, of precipitation and wind, and of minerals. Disciplines and types of knowledge have feminine gender, and games and types of metal — with the exception of alloys — have neuter gender. This is contrary to a common

assumption that there is no real semantic basis for gender assignment in the well-known Indo-European languages.

Noun class assignment is typically more opaque for inanimates and for non-human animates than for humans and high animates. In the Australian language Bininj Gun-Wok (Evans 2003: 185-99) masculine class includes male humans, the names of certain malevolent beings mostly associated with the sky, items associated with painting (a male activity), and also some mammals, some snakes and some birds and fish. Feminine class includes female humans, and also some reptiles, fish and birds. Vegetable class includes all terms for non-flesh foods, but also a few bird names. Finally, the neuter, or residue class is the most semantically heterogenous — it includes items which do not fit into other classes, e.g., most body parts, generic terms for plants, and terms for various inanimate objects.

In Jingulu (Pensalfini 2003: 159-68) nouns divide into four classes, only some of which are more or less semantically transparent. The vegetable class mostly includes objects which are long, thin or pointed; this class happens to include most vegetables, as well as body parts such as the colon, penis and neck, instruments such as spears, fire-drills and barbed wire, natural phenomena such as lightning and rainbows, and also roads and trenches. The feminine class includes female humans and higher animates, and also words for axes, the sun, and most smaller songbirds. The semantic content of the remaining two classes, masculine and neuter, is much harder to define: masculine is mostly used for the rest of animates and neuter for the rest of inanimates, except that flat and/or rounded inanimates — such as most trees and eggs, and body parts such as the liver and brow — are masculine.

(ii) **NOUN CLASSIFIERS** categorize the noun with which they cooccur and are independent of any other element in a noun phrase or in a clause. They are often independent words with generic semantics. Thus, in Yidiny, an Australian language, one would not generally say: 'the girl dug up the yam'; it is more felicitous to include generics and say 'the person girl dug up the vegetable yam' (Dixon 1982: 185) — see (3). Classifier constructions are in square brackets.

(3) [mayi jimirr] [bama-al yaburu-ŋgu] julaal
 vegetable+ABS yam+ABS CL:PERSON-ERG girl-ERG dig-PAST
 'The person girl dug up the vegetable yam'

Every noun in a language does not necessarily take a noun classifier. And a noun may occur with more than one classifier. In Minangkabau, a Western Austronesian language from Sumatra, different noun classifiers may be used with the same noun, to express different meanings, e.g., *batang limau* (CL:TREE lemon) 'lemon-tree', *buah limau* (CL:FRUIT lemon) 'lemon-fruit'. They are similar to derivational-like devices. The choice of a noun classifier is predominantly semantic, based on social status, function and nature, and also on physical properties, e.g., shape. But in some cases the semantic link between a noun classifier and a noun is not obvious. In most languages of the Daly area in Australia honey takes the noun classifier for flesh food. The choice of noun classifier in Jacaltec, a Mayan language from Guatemala, is often obscured by extension through perceptual analogy; for instance, ice is assigned to the rock class (see Craig 1986: 275-6).

Noun classifiers are found in numerous Australian languages, in Western Austronesian, in Tai languages, and in Mayan languages (Aikhenvald 2000). In Yidiny (Australian: Dixon 1977: 480ff.; 1982: 192ff.), a language with twenty noun classifiers, these are of two kinds:

- INHERENT NATURE classifiers divide into humans (*waguja* 'man', *bunya* 'woman', and a superordinate *bama* 'person', as in (3)); fauna (*jarruy* 'bird', *maṅgum* 'frog', *munyimunyi* 'ant'); flora (*jugi* 'tree', *narra* 'vine'), natural objects (*huri* 'fire', *walba* 'stone', *jabu* 'earth'); and artefacts (*gala* 'spear', *bundu* 'bag', *baji* 'canoe').
- FUNCTION classifiers are *minya* 'edible flesh food', *mayi* 'edible non-flesh food', *bulmba* 'habitable', *bana* 'drinkable', *wirra* 'movable', *gugu* 'purposeful noise'.

A distinction between flesh and non-flesh food is typical for Australian languages with noun classifiers (Dixon 2002: 454-9).

Noun classifiers for humans often involve social functions. In Mayan languages of the Kanjobalan branch, as in Jacaltec, humans are classified according to their social status, kinship relation or age. Mam has classifiers for men and women; for young and old men and women; for old men and women to whom respect is due, and for someone of the same status as the speaker. There is also a classifier for babies, and just one non-human classifier. In Australian languages, noun classifiers which refer to social status include such distinctions as initiated man. Murrinhpatha (Australian: Walsh 1997: 256) has a classifier for Aboriginal people (which also covers human spirits) and another for non-Aboriginal people, which includes all other animates.

Nouns with non-human, or inanimate, referents are classified in terms of inherent nature-based properties from the natural domains of human interaction: animals, birds, fish, plants, water, fire, minerals, and artefacts. Individual systems may vary. There is often a general term for birds and fish, as in Minangkabau (Western Austronesian); while Ngan'gityemerri (Australian)

and Akatek (Mayan) have a generic noun classifier for animals. Classifiers in Murrinhpatha, from Australia, cover fresh water and associated concepts; flowers and fruits of plants; spears; offensive weapons, fire and things associated with fire, time and space, speech and language, and there is a residue classifier.

There is usually a noun classifier for culturally important concepts. Mayan languages have a noun classifier for corn, a traditionally important crop, and for domesticated dogs, while Daly languages, in northern Australia, have classifiers for spears, diggings sticks and spear throwers.

Noun classifiers often have to be distinguished from generic nouns. In Yidiny, a test for what can be used as a classifier is provided by the way interrogative-indefinite pronouns are used: there is one which means 'what generic?' and another meaning 'generic being known, what specific?' Another decisive criterion is how obligatory the classifiers are, and whether it is possible to formulate explicit rules for their omission. Incipient structures superficially similar to noun classifiers can be found in Indo-European languages. In English it is possible to use a proper name together with a descriptive noun phrase, such as *that evil man Adolf Hitler*, but this type of apposition is rather marked and used to achieve rhetorical effect. Lexico-syntactic mechanisms of this kind may well be an historical source of noun categorization devices. Noun classifiers should be distinguished from derivational components in class nouns, such as *berry* in English *strawberry*, *blackberry*, etc. with their limited productivity, high degree of lexicalization and the fact that they are restricted to a closed subclass of noun roots.

(iii) NUMERAL CLASSIFIERS are morphemes which only appear next to a numeral, or a quantifier; they may categorize the referent of a noun in terms of its animacy, shape and other inherent

properties. Uzbek, a Turkic language, has fourteen numeral classifiers. A classifier for humans is shown in (4). Inanimate objects are classified by their form, as shown in (5) (Beckwith 1998):

(4) bir nafar âdam
 one CL:HUMAN person
 'one person'

(5) bir bâs karâm
 one CL:HEAD.SHAPED cabbage
 'one (head of) cabbage'

Numeral classifiers are relatively frequent in isolating languages of Southeast Asia; in the agglutinating North Amazonian languages of South America, Japanese, Korean and Turkic; and in the fusional Dravidian and Indic languages.

In a language with a large set of numeral classifiers, the way they are used often varies from speaker to speaker, depending on their social status and competence (Adams 1989). In this (and in the ways they are acquired by children) they are much more similar to the use of lexical items than to a limited set of noun classes. Each noun in the language does not have to be associated with a numeral classifier. Some nouns take no classifier at all; and some nouns take more than one classifier, depending on which property of the non's referent is in focus.

Numeral classifiers are always determined by the semantics of the noun referent. Typical semantic parameters are animacy, physical properties — such as dimensionality, shape, consistency, nature —, functional properties (e.g., object with a handle) and arrangement (e.g.,

bunch). There can also be specific classifiers for culturally important items, e.g., canoe, house. A few languages (e.g., Kana, a Cross-River language from Nigeria, and a number of New Guinea languages: Aikhenvald 2000: 287-8) have no classifier for animates, or humans: when counted, these are classified by shape or by function. For instance, a human is assigned to a class of vertically positioned or elongated objects.

A typical problem with numeral classifiers concerns differentiating between sortal classifiers — which just characterize a referent — and mensural classifiers — which contain information about how the referent is measured. As Ahrens (1994: 204) put it, classifiers can only classify a limited and specific group of nouns, while measure words can be used as a measure for a wide variety of nouns. Almost every language, whether it has numeral classifiers or not, has quantifiers, the choice of which may depend on the semantics of the noun. This often depends on whether the noun referent is countable or not. For instance, in English *much* is used with non-countable nouns and *many* with countable nouns; other languages have just one word covering 'much' and 'many'. The choice of quantifying expressions may also depend on the properties of the referent noun; for instance, in English we include *head* in *five head of cattle*, *stack* in *three stacks of books*, *flock* in *two flocks of birds* and so on. These quantifying expressions are not numeral classifiers, because they do not fill an obligatory slot in the numeral-noun construction, but are instead used in a type of construction which is also employed for other purposes. For instance, quantifier constructions in English *three head of cattle* are in fact a subtype of genitive constructions. This is the main reason why English is not a numeral classifier language. The quantifiers also have a lexical meaning of their own.

(iv) **CLASSIFIERS IN POSSESSIVE CONSTRUCTIONS** are of three kinds. **RELATIONAL CLASSIFIERS** categorize the ways in which noun referents relate to, or can be manipulated by, the possessor — whether they are to be eaten, drunk, worn, etc. They tend to occur in languages which distinguish alienable and inalienable possession. In Fijian (Lichtenberk 1983: 157-8), different classifiers are used to categorize kava as something one is going to drink, as in (6), or as something one has grown, or is going to sell, as in (7).

(6) na me-qu yaqona
 ARTICLE CL:DRINKABLE-my kava
 'my kava (which I intend to drink)'

(7) na no-qu yaqona
 ARTICLE CL:GENERAL-my kava
 'my kava (that I grew, or that I will sell)'

Oceanic languages typically have from two to five relational classifiers, while Kipeá-Karirí, an extinct Macro-Jê language from Brazil, had twelve. Categorization of the possessive relationship via a relational classifier is based on functional interaction between possessor and possessed. The primary semantic division of referents is into consumable and non-consumable, as in Fijian, or general and alimentary, as in Manam (Lichtenberk 1983; Dixon 1988: 136). Consumable objects can be further classified according to the way in which they are consumed (eaten, drunk, chewed), or prepared (e.g., cooked or roasted). Non-consumable objects are classified according to how they have been acquired (e.g., found, or received as a gift, as in

(v) **VERBAL CLASSIFIERS** (also called **VERB-INCORPORATED CLASSIFIERS**) appear on the verb, categorizing a noun, which is typically in S (intransitive subject) or O (direct object) function, in terms of its animacy, shape, size, structure and position. Example (10), from Waris, a Papuan language of the Border family (Brown 1981: 96), shows how the classifier *-put-* 'round object' is used with the verb 'get' to characterize its O argument, coconut, as a round object.

- (10) sa ka-m put-ra-ho-o
 coconut 1sg-to VERBAL.CL:ROUND-get-BENEFACTIVE-IMPERATIVE
 'Give me a coconut (lit. coconut to-me round.one-give)'

SUPPLETIVE (OR PARTLY ANALYZABLE) CLASSIFICATORY VERBS are a subtype of verbal classifiers. Classificatory verbs can categorize the S/O argument in terms of its inherent properties (e.g., animacy, shape, form, and consistency), as in Athapascan languages of North America, such as Mescalero Apache in Table 2. Different arrangements of tobacco are reflected in the form of a classificatory verb whose basic meaning is 'give' (in bold) (Rushforth 1991):

<Table 2 about here>

Alternatively, classificatory existential verbs can categorize the S/O argument in terms of its orientation or stance in space, and also to its inherent properties, as in Dakota and Nevome, from North America, and in Papuan languages of the Engan family in the Highlands of New Guinea. In Enga, a verb meaning 'stand' is used with referents judged to be tall, large, strong,

powerful, standing or supporting, e.g., men, houses, trees; and 'sit' is used with referents judged to be small, squat, horizontal and weak, e.g., women, possums and ponds.

Cross-linguistically, classificatory verbs tend to belong to the semantic groups of handling, motion and existence/location. That classificatory verbs should combine reference to inherent properties of referents, and to their orientation, is not surprising. Shape, form and other inherent properties of objects correlate with their stance in space. Certain positions and states are only applicable for objects of particular kinds; for instance, a tree usually stands, and only liquids can flow. However, classificatory verbs differ from the lexical selection of a verb in terms of physical properties or the position of an object. Most languages have lexical items similar to English *drink* (which implies a liquid O), or *chew* (which implies an O of chewable consistency). Unlike these verbs, classificatory verbs make consistent paradigmatic distinctions in the choice of semantic features for their S/O argument throughout the verbal lexicon. In other words, while English distinguishes liquid and non-liquid objects only for verbs of drinking, classificatory verbs provide a set of paradigmatic oppositions for the choice of verb sets depending on the physical properties of all kinds of S/O. Similarly, posture verbs in many languages tend to occur with objects of a certain shape. For instance, in Russian, long vertical objects usually stand, and long horizontal ones lie. However, the correlations between the choice of the verb and the physical properties of the object are not paradigmatic; these verbs cannot be considered classificatory.

(vi) **LOCATIVE CLASSIFIERS** occur with locative prepositions and postpositions, and categorize the head noun in terms of its animacy or physical properties, including form and shape. These are found in South American Indian languages of the Carib family, and in Palikur, an Arawak

language from Brazil: e.g., *pi-wan min* (2sg-arm LOC.CL+VERTICAL) 'on your (vertical) arm'; *ah peu* (tree LOC.CL+BRANCH LIKE) 'on (branchlike) tree'.

(vii) **DEICTIC CLASSIFIERS** occur on deictics within a noun phrase and categorize the noun referent in terms of its inherent properties and position in space, such as horizontal or vertical. They are found in Siouan languages from North America, e.g., Mandan *dε-māk* 'this one (lying)'; *dε-nak* 'this one (sitting)'. Nouns are typically classified by their canonical position which correlates with their shape and extendedness, for instance, in Pilaga (a Guaicuruan language, from Argentina) fire and stones are classified as horizontal, and buildings and animals as sitting.

All noun categorization devices use the same set of core parameters, which include:

- animacy;
- physical properties covering shape and dimensionality (one-, two- or three-dimensional objects, including long, flat and round referents) and direction; size; consistency (flexible, hard or rigid, liquid); material (what the object is made of, e.g., cloth-like);
- functional properties (to do with specific uses of objects or kinds of action typically performed on them), including social status which can be considered a subtype of functional categorization;
- arrangement (that is, configuration of objects, e.g., a coil of rope or a bunch).

Various kinds of noun categorization devices opt for different preferred semantic parameters: animacy and humanness are predominant in noun classes, while noun classifiers often categorize referents in terms of their function and social status. Numeral classifiers typically categorize referents by shape — e.g., round or vertical — while verbal classifiers may also involve orientation — vertical or horizontal. Semantic parameters employed in noun

categorization systems follow some tendencies. If a language has classifiers for three-dimensional objects, it is likely to also have classifiers for two-dimensional ones. A summary of preferred semantic parameters depending on a type of noun categorization device is in Table 3 (also see Bisang 2002 for their cognitive correlates). These preferences represent only tendencies.

< Table 3 about here >

Generic-specific relations are characteristic of noun classifiers, verbal classifiers and sometimes possessed classifiers, but not of other types (they are rare in numeral classifiers).

The semantic complexity of an individual noun class or classifier varies. Some are semantically simple, e.g., the classifier 'person' in Malay and Minangkabau used with all humans. Others undergo semantic extensions and their choice is less straightforward. Consider the semantic structure of the classifier *-hon* in Japanese (Matsumoto 1993: 676-81). In its most common use it covers saliently one-dimensional objects, e.g., long, thin, rigid objects such as sticks, canes, pencils, candles, trees, dead snakes and dried fish. It also covers martial arts contests with swords (which are long and rigid), hits in baseball, shots in basketball, Judo matches, rolls of tape, telephone calls, radio and TV programs, letters, movies, medical injections, bananas, carrots, pants, guitars and teeth. This heterogeneity results from various processes of semantic extension and metonymy. Extensions can be based on certain rules for transferring class membership, as in Dyirbal (see (i) above).

According to these principles idealized models of the world — for instance, myths and beliefs — can account for other chaining links within the structure of a class. In Dyirbal, birds belong to feminine Class II because they are believed to be the spirits of dead human females.

A further type of extension is the Domain Of Experience Principle which links together members thought to be associated with the same experience domain. Thus, fish in Dyirbal belong to Class 1 since they are animate, and so do fishing implements because they are associated with the same activity. These domains are often culture-specific, and subject to change with socio-cultural changes. The numeral classifier *tay* in Korean was originally used with reference to traditional vehicles, and then was extended to introduced European artefacts with wheels. It was further extended to any electric machinery, and to other kinds of machines or instruments, including even the piano. In Austroasiatic languages, shape parameters in inanimate categorization account for typical semantic extensions of terms for plants and their component parts when employed as classifiers, such as small and roundish (from the word for 'seed'), round (from 'fruit'), bulky (from 'tuber'), flat and sheet-like (from 'flower', 'leaf', 'fiber'), and long (from 'stalk', 'stick', 'sprout') (Conklin 1981: 341).

An instructive example of prototype-and-extension in a multiple classifier system comes from classifier *tua* in Thai (used with numerals, demonstratives and adjectives). The structure of the category is shown in Diagram 1. Arrows indicate extensions from a prototypical member to a less prototypical one (Carpenter 1987: 45-6).

<Diagram 1 about here>

The prototypical referent classified with *tua* is a four-legged animal, such as a dog or a water buffalo. The classifier extends to include trousers and shirts, due to their shape: trousers are leg-like, and shirts have arm-like sleeves. Because of shared function, and the body-like shape, this classifier also applies to jackets, skirts, and even dresses, underwear and bathing suits. The

general four-legged shape of items of furniture, such as tables and chairs, accounts for their inclusion in the category covered by the classifier *tua*. Other kinds of furniture were then added because of their shared function with tables and chairs. 'Letter (of the alphabet)' in Thai is a compound *tua nangseu* 'body book', so a combination of shape and repetition of the generic compound head caused letters to be classified with *tua*. Numbers were included either on the basis of shape or by their shared function with letters. Ghosts were included because of their similarity with the two-limbed shape of a human body. Semantic extensions of classifiers can be manipulated by language planners. Following an order of King Mongkut issued in 1854, 'noble' animals such as elephants and horses should be counted without any classifier; the classifier *tua* could only be used for animals of a 'lower' status. In Setswana, a Bantu language with a large set of noun classes, it is now considered politically incorrect to refer to ethnic minorities, such as the Chinese or the Bushmen, using noun class 5/6 (which includes substances, such as dirt or clay, and abstract nouns); all humans have to be referred to with the 'human' class 1/2 (see Table 1).

Noun categorization devices are hardly ever semantically redundant. They are often used to distinguish what can be encoded with different lexemes in some languages. For instance, in Burmese a river can be viewed as a place, as a line (on a map), as a section, as a sacred object, or as a connection. These meanings are distinguished through the use of different numeral classifiers — this is shown in Table 4 (Becker 1975: 113).

<Table 4 about here>

In Apache, a plug, a box, a stick, or a bag of tobacco are distinguished through the use of different classificatory verbs. In languages with overt noun class marking, variability in marking noun class on the same root is a way of creating new words. In Bantu languages, such as Swahili, most stems usually occur with a prefix of one class. Prefixes can be substituted to mark a characteristic of an object. *M-zee* means 'old person' and has the human class prefix *m-*. It can be replaced by *ki-* (inanimate class) to yield *ki-zee* 'scruffy old person'. In Dyrbal, the word 'man' can be used with the feminine class marker, instead of masculine, to point out the female characteristics of a hermaphrodite. In Manambu, 'head' is usually feminine because of its round shape, but it is treated as masculine when a person has a headache, since then the head feels heavy and unusually big.

We have seen that, semantically, noun categorization devices are heterogenous, non-hierarchically organized systems which employ both universal and culture-specific parameters. The ways these parameters work are conditioned and restricted by cognitive mechanisms and the socio-cultural environment. Among universal parameters are animacy, humanness and physical properties, e.g., shape, dimensionality, consistency. Culture-specific parameters can cover certain functional properties and social organization.

Classificatory parameters associated with function rather than physical properties are more sensitive to cultural and other non-linguistic factors. Human categorization, as a sort of 'social' function, depends entirely on social structure. Functional categorization of inanimate and non-human objects is directly related to cultural notions. Animacy and sex, when extended metaphorically, are influenced by social stereotypes and beliefs.

Correlations between the choice of physical properties encoded in classifiers and non-linguistic parameters are much less obvious. They may relate to the cultural salience of certain shapes or forms; and they may ultimately be based on typical metaphorical extensions.

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Table 1. Noun classes in Bantu

CLASS	SEMANTICS
1/2	humans, a few other animates
3/4	plants, plant parts, foods, non-paired body parts, miscellaneous
5/6	fruits, paired body parts, miscellaneous inanimates
7/8	miscellaneous inanimates
9/10	animals, miscellaneous inanimates, a few humans
11/10	long objects, abstract entities, miscellaneous inanimates
12/13	small objects, birds
6	masses
14	abstract qualities, states, masses, collectives
15	infinitives

Table 2. Examples of the use of 'give' in Mescalero Apache

1. *Nát'uhí shán'aa* 'Give me (a plug of) tobacco'
2. *Nát'uhí shánkaa* 'Give me (a can, box, pack) of tobacco'
3. *Nát'uhí shánt̩j̩* 'Give me (a bag) of tobacco'
4. *Nát'uhí shánt̩j̩* 'Give me (a stick) of tobacco'
5. *Nát'uhí shánjaash* 'Give me (loose, plural) tobacco'

Table 3. Preferred semantic parameters in classifiers

CLASSIFIER	TYPICAL SEMANTICS	GENERIC-SPECIFIC RELATION
noun classes	animacy, humanness, physical properties, rarely nature or function	no
numeral classifiers	animacy, humanness, physical properties, nature, rarely functional properties	rare
noun classifiers	social status, functional properties nature	yes
verbal classifiers	physical properties, rarely animacy, nature	yes
relational classifiers	functional properties	no
possessed classifiers	physical properties, nature, animacy, functional properties	yes
locative classifiers	physical properties, rarely animacy	no
deictic classifiers	directionality, physical properties	no

Table 4. Categorization of an inanimate noun in Burmese with a classifier

NOUN	NUMERAL	CLASSIFIER	TRANSLATION
miyi?	tə	ya?	river one place (e.g., destination for a picnic)
miyi?	tə	tan	river one line (e.g., on a map)
miyi?	tə	hmwa	river one section (e.g., a fishing area)
miyi?	tə	sin	river one distant arc (e.g., a path to the sea)
miyi?	tə	θwε	river one connection (e.g., connecting two villages)
miyi?	tə	pa	river one sacred object (e.g., in mythology)
miyi?	tə	khu	river one conceptual unit (e.g., in a discussion of rivers in general)
miyi?	tə	miyi?	river one river (the unmarked case)

Diagram 1. Structure of the *tua* category in Thai