Morphologie
Morphology

Ein internationales Handbuch zur Flexion und Wortbildung
An International Handbook on Inflection and Word-Formation

Herausgegeben von / Edited by
Geert Booij · Christian Lehmann · Joachim Mugdan · Stavros Skopeteas
in collaboration with Wolfgang Kesselheim

2. Halbband / Volume 2

Offprint

Walter de Gruyter · Berlin · New York


Lafon, René (1959), "Place de la 2e personne du singulier dans la conjugaison basque", Bulletin de la Société de Linguistique de Paris 54, 103–129


McKay, Graham (1978), "Pronominal Person and Number Categories in Rembangga and Dyohbana". Oceanic Linguistics 17, 27–57

McKay, Graham (1979), "Gender and the Category ‘Numeral Augmented’". Oceanic Linguistics 18, 203–210


Plank, Franz (1985), "Die Ordnung der Personen". Folia Linguistica 19, 111–176


Reesink, Gert (1987), Structures and their Functions in Ewa, a Papuan Language of Papua New Guinea. Amsterdam: Benjamins


Schaub, Willy (1985), Bobunyu. London: Croon Helm

Senn, Gustav (1986), Kilivila, the Language of the Trobriand Islanders. Berlin, New York: Mouton de Gruyter

Shibatani, Masayoshi (1990), The Languages of Japan. Cambridge: Univ. of Cambridge Press


Zucki, Arnold (1977), "Hierarchies of Person", Papers from the Annual Regional Meeting of the Chicago Linguistic Society 13, 714–733

Jeffrey Heath, Ann Arbor
(U. S. A.)
97. Classifiers

1. Introduction

Classifier systems are lexico-syntactic systems which provide an overt linguistic categorization of nominals. They come in different types that can be distinguished by their semantics, the size of their inventory, their morpho-syntactic status, and their pragmatic use. Classifier systems per se are part of a continuum of nominal categorization systems where they stand in an intermediate position between the two types of nominal classification systems found in European languages: the very grammaticalized gender systems (French le fil de 'the cord', la couette 'the duvet', la robe, 'the dress'; cf. Art 98) and the lexical expressions of measure terms and unit counters (a piece of paper, a cup of milk, a handful of candles, a pile of clothes). Classifier systems are found in languages of Asia, Oceania, Africa, Australia, and the Americas.

2. Semantic categorization

Classifiers offer a unique window into studying how humans beings construe representations of the world and how they encode them into the words of their languages. Beyond a morphosyntactic variation to be discussed later, systems of classifiers share specific features and categorization principles which yield remarkably similar prototypical members of categories across systems.

Classifier systems select basic universal semantic features of the major word classes from which they originate (mostly nouns and verbs) and extend them metaphorically to overtly express the various types of social, physical and functional interactions that human beings have with their world. The conventionalized perception of the world encoded in classifier systems spans from the most cognitive and universal to the most specific and esoterically cultural points of view.

2.1. Universal semantic properties of classifiers

The earlier attempts at identifying universal semantic properties of classifiers are found in Adams & Conklin (1973), Denny (1976), and Allan (1977). Their complementary approaches offer a comprehensive overview of all the semantic features encountered across classifier systems of the world. What follows is a synthesis of their work which takes into account a greater variety set of classifier systems.

Animacy is one of the prevalent semantic features of classifiers. Some languages grant special classification to humans and animals as opposed to objects of the inanimate world, while others treat humans separately and classify animals by their shape together with inanimates. The feature of humaneness itself combines with one of two sets of semantic features. One set of features corresponds to the inherent properties of a person, such as sex, age, or kinship. The other corresponds to socio-cultural properties, such as social rank based on wealth, occupation, nobility or servitude, and is sometimes labelled features of social function. Some constraints seem to hold between these sets of features. For instance, the prominent feature of sex does not determine a class by itself in classifier systems proper (as opposed to gender systems) and must combine with other features. Another constraint seems to be on relying either on inherent properties or on social factors when classifying humans, but rarely on both sets at once.

The inanimate domain is classified by a proliferation of semantic features divided between physical and functional sets. The two major features of the physical domain are material and shape, both cognitively oriented features. Basic material features classify objects by their essence, irrespective of the shape, consistency or use of the object. This type of semantic categorization is very semantically transparent but appears to be rare, having been documented primarily in noun classifiers of the Americas. In such a classification, for instance, all plants and plant products are classified as plants, all animals are classified as animals. The domain labelled shape includes iner- tial and temporary physical characteristics of objects, such as shapes, consistencies, and configurations. The predisposition of classifier systems to use specifically shape (rather than color, size, weight or smell) reflects the selectiveness found in how humans categorize objects of the world according to basic cognitive categories. The primary semantic features of inherent shape that prevail around the world are the one-dimensional long shape, the two-dimensional flat shape, and the three-dimensional round shape.

The semantic features of consistencies (rigid, flexible, soft, hard) are secondary developments; they do not categorize objects by themselves but combine with one of the primary shapes. The feature of rigidity, for instance, can combine with a primary shape feature, yielding the possible combinations: one-dimensional long rigid and two-dimensional flat rigid. Included under the broad label of shape are configurations (in a pile, in a circle, in a straight line, evenly and unevenly scattered, etc.) which are temporary arrangements creating shapes. They, too, have a tendency to combine with other semantic features of shape and consistency, as well as "scores" of other physical characteristics. The result is more and more specific classes which proliferate in the large numeral classifier systems.

The semantic feature of function refers to the role which the objects classified are put rather than to their shape or other physical characteristic. A basic set of functions marked by classifiers would include housing, transportation, edibles, clothing, and tools. Within the domain of function fall most of the classifier-contrasted nouns, such as concepts of time, writing and speech, and much that is very cultural specific and opaque in classifier systems.

2.2. Types of classifiers and complexity of classes

The semantic structure of the class defined by a classifier varies from very simple to very complex and heterogeneous, according to the type of classifier that heads it.

Specific classes are the most common type. They head classes built around prototypical exemplar nouns from which the class generally extends into more or less heterogeneous classes of nouns with a large spectrum between two extreme opposite types: unique and general classifiers. Specific classifiers correspond to various levels of specificity of nominal taxonomies, including generic and specific nouns. Commonly, the more specific the classifier, the more culturally relevant the class is assumed to be or have been. In Isacolec (Mayan) languages, the plant domain includes three classifiers: 'na' for all the plant world, while 'au' is more specific for medicinal plants, and 'xim' for corn and corn products.

Unique classifiers define the simplest classes, in that they classify only one object, supposedly one that had or still has some particular cultural relevance. In Isacolec (Mayan), there is a unique classifier 'matc' for the one noun 'te' 'dog', next to the specific classifier 'na' for all the other animals...
writer ribbons, camera films, telephone calls, letters, movies, TV programs, medical injections, and homeruns in baseball! (Lakoff 1986: 14; Matsusono 1990:10f.)

Such heterogeneity is the combined result of various processes of extension which operate in the semantics of classifiers: prototypic extension, chaining, and checklist. A checklist model predicts clear cut boundaries between classes and assumes extension of a category to any noun with a set of necessary and sufficient features, such as [+animate] and [−human]. A chaining model, the most prevalent in classifier systems, is based on sets of local analogies that create disjunctive classes with no identifiable common feature. In a prototype model, the members of the class are more or less closely resembling an abstract ideal member with which they share minimally one feature.

The class defined by the Thai classifier that animate quadrupeds has the kind of heterogeneity that requires appeal to all three types of extensions (Carpenter 1987: 17). A checklist analysis accounts for the inclusion in the class of all animals. A prototype analysis assigns 'dog', 'cat', and 'buffalo' a more central position in the class than non-limbed ani-

mates like 'snake' and 'fish' on one hand, and the limbed inanimates 'table' and 'trousers' on the other. But only a chaining analysis can account for the further inclusion in the class of 'shoe' (other limbed clothing), 'dresses' and 'bird's scythe' (unlimbed cloth typology). What all models of extension of the classes can do at best is to explain the posterior inclusion of certain nouns in a class, but they have very limited power of prediction (Allan 1977; Lakoff 1986).

2.4. Complexity of classifier systems

Beyond the varying complexity of the individual classes of a classifier system is the varying semantic complexity of the systems at large. Classifier systems are heterogeneous, non-hierarchical, non-taxonomic organizations which vary idiosyncratically from language to language and culture to culture. Most classifier systems are collections of unique, specific and general classifiers which constitute an integrated semantic categorization. The degree of complexity of classifier systems is also tied to their ability to classify all nouns, including those on which, for example, one time expressions and activities.

It is very common in the large numeral classifier systems to have classifiers for an array of physical semantic features of basic shape and secondary shapes and consistencies, scores of configurations and multiple functions, with a combination of a few gene-

eral classifiers, more or less already published sources, such as the typological project in Cologne (Barron 1982; Serzedo 1981, H. Seiler 1986). A working typology incorporating the recent advances in classifier studies would have to take into account the rich data and amended proposals of such publications as Alkovenval (2000), Grinov (2000), and Sennf (2000, ed.).

The typology being proposed here is morphosyntactically based. Although it will con-

sider issues of semantics, pragmatic use and grammaticalization, it identifies the different types of classifiers primarily on the basis of their morpho-syntactic locus. The terminol-

ogy chosen for this typology responds to the following rationale: it relies as much as pos-

sible on currently used terminology in order to avoid the proliferation of new terms, while selecting among various terms in use the one that is most iconic with the morpho-syntactic locus of the classifier.

3.2. Nominal classification types

The following typology incorporated classifi-

cation systems which are not universally con-

sidered as belonging to the core of the major classifier systems. The inclusiveness is dic-

tated by a general approach to the study of classifier systems that includes both syn-

chronic and diachronic dimensions and al-

ows for tracing the paths of evolution of such systems, often relating minor or mar-

ginal systems to the core ones.

3.2.1. Gender and noun class

Gender is either not included in classifier ty-

pology or considered an extreme case of noun classification systems. Gender systems, which are common in European languages, have either two or three classes ('masculine/feminine/'neuter') to which most nouns are assigned arbitrarily, beyond the recognition of sex differences for animate nouns (see Art. 98).

Noun class systems are more typical of languages of Africa and commonly have be-

tween five and twenty classes. More semantic content can be ascribed to noun classes than to genders, although it is more obvious for reconstructed Bantu classes than for most contemporary noun class systems.
The difference between measure terms and mensural classifiers is not always easy to draw. One defining criterion of mensural classifiers is that they co-exist in the language with sortal ones, in forming a complex and heterogeneous classifier system. By such a criterion English measure terms could not be taken as mensural classifiers, contrary to what some want to argue. In some languages, mensural and sortal classifiers behave differently. In Tzotzil (Mayan), for instance, of the several hundred numeral classifiers identified, only eight are sortal classifiers and both types can be distinguished by their anaphoric behavior; sortal but not mensural classifiers are anaphorically. In Q'ajo- b'al (Mayan) the difference appears in agreement. Numbers carry a classifier which agrees with mensural classifiers, if one is present, but with the head noun if a sortal classifier is present (examples from Mayan languages are given in traditional orthography).

The identification of a distinct type of classifiers called here noun classifiers is practically the main point of the present typology. As already mentioned, not only is the existence of noun classifiers not always recognized, but, in addition, the term noun classifier is often used to refer to another type of classifiers, the numeral classifiers of 3.2.2.

3.2.4. Genitive classifiers

Genitive classifiers are a fairly well established type of classifiers. They have also been called relational, possessive or attributive classifiers. They resemble numeral classifiers in that they piggy-back an element of the noun phrase, in this case the possessor entity of a possessor construction (see Art. 103).
the familiar edible, drinkable and vehicle, and the others include the idioms of musical instruments, body part and artificial light (Carlson & Payne 1989).

3.2.5. Verbal classifiers

Verbal classifiers are called thus because they are morphologically part of verb words. As systems of nominal classification they rely on the same array of semantic features as the previously described classifier systems. There are various sub-types of verbal classifiers, depending principally on the age of the system and the lexical characteristics of the classifiers. The above mentioned terminological problem surfaces here too. One extreme case of it is found in the literature on Athapascan languages in which verbal elements with no noun classifier function have been traditionally called classifiers, while others that should be called classifiers have been described instead with terms such as class mark or extension which hide their classifieric function (Krauss 1968). Verbal classifiers have been documented for many North American languages, as well as Australian and Papuan languages (Mithun 1986; W. Seiler 1986) and American Sign Language (Sapir 1986).

One sub-type of verbal classifiers are incorporated classifiers which are still recognizable as incorporated words, generally nouns. Whether specific and generic nouns originally, all take on a generic meaning as classifiers. The free nouns corresponding to incorporated classifiers may still co-occur in the language, or they may have been replaced:

(15) Cayuga (Iroquoian, Ontario; Mithun 1986: 386–388)
(a) *gehè:â:le:ke ak-hen:atâ:k it.potato, rotten PAST/CL potato-eat 'I ate a rotten potato'
(b) *so:wa:n: a:kha:nâ:le:ar dog 1CL.dominic.animal-have 'I have a (pet) dog'
(c) *skir? akhe-ir:he-nad skidoo 1CL.vehicle-have 'I have a car'

(16) Munduruku (Tapirian, Brazil; Mithun 1986: 381):
(1) *dojó:jé pa:ye, a:khâ:mo water bring when they-CL.water-place ip:basey:la he they basin in 'when they brought water, they placed it in the basin'

(gə:gə:mar u:na:ko
(gu:wa:mar u:na:ko
ba:ga:mar.gi:na:ni
3.PL-3.SG-CL.water-eat-PCON
and they drank water

The semantics of incorporated verbal classifier systems vary from kinds of entities to qualities (shapes, functions) of objects. In the former they are closest to the semantics of noun classifiers, and in the latter to the semantics of numeral classifier systems. Intermediate systems classify by both kinds of entities and qualities.

The other sub-type of verbal classifiers are classifying verbal affixes which are phonologically very eroded but which have semantics similar to numeral classifier systems, commonly identifying classes of long, round, granular, flexible, liquid objects, for instance:

(18) Disqueo (Langdon 1970:80, 87; see also Carlson & Payne 1989):
(a) ta:kat CL.round-cut 'to cut with scissors or adze, to cut in slimns'
(b) ta:mar CL.round-cover 'to cover over a small object'
(c) a:kat CL.long-cut 'to cut with a knife'
(d) a:mar CL.long-cover 'to cover over a long object, to bury someone'

(19) Imonda (Papuan, W. Seiler 1986: 192.6):
(a) tó:n:u kam u:na:ko fish me CL.small.animal-give 'give me the fish'
(b) po kam u:na:ko water me CL.liquid-give 'give me some water'
(c) mabu kam lê:k:â:ta clothes me CL.flat-give 'give me a piece of clothing'

One characteristic of these verbal classifiers is that they classify either the subjects of transitive or the object of transitive, on an absolutive basis:

(20) Eyak (Krauss 1968:193):
(a) *do:do:sta:ka:ii it CL.board-lie 'it (board) lies there'
(b) *do:do:sta:ka:ii it CL.log-lie 'it (log) lies there'
(c) *do:do:sta:ka:ii it CL.give 'give it (log) to me'

Another characteristic of the more grammaticalized verbal classifiers, besides their more opaque semantics, is the fact that they are associated more or less stringently with certain verbs. The core set of these verbs deals with the concept of manipulation of objects, including the state and position they are in before or after manipulation, hence verbs like 'lay', 'be in a position or in a specific place', 'handle', 'hold', 'grab', 'pick up', 'push', 'give', 'carry'.

The extreme case of phonological erosion and fusion of verbal classifiers is found in the phenomenon of classifieric verbs in which the shape or position of the subject or object argument is lexicalized into verbal stem paradigms. Cherokee for instance distinguishes five nominal classes through stem variation of a set of basic verbs of position and manipulation verbs:

(21) Cherokee (Southern Iroquoian; Mithun 1986:92)
gakanêh<
'he's giving him a living thing'
ganêh<
'he's giving him some liquid'
ada<
'he's giving him a long, rigid object'
gamêh<
'he's giving him a flexible object'
ada<
'he's giving it to him (something not contained in one of the above categories)'

The phenomenon of verbal classifiers therefore covers an array of sub-types, in a continuum in which the classifying elements vary from being still close morphologically and semantically to their lexical origins, to systems in which those elements have eroded both semantically and phonologically and have been...
come fused to the verb. The subtype of classificatory verb systems which stands at the margins of a typology of classifiers per se is included in the typology for the same reason gender systems were: they are important for a complete view of the evolutionary process of classifier systems.

3.2.6. Marginal types

Even more marginal yet, and not considered a part of the typology, is a type of nominal classification that operates through portmanteau morphemes, expressing dative and elements of nominal classification. One such example is a classification system found in the Nunggurr language (see Ossen 1999:10), which has been labelled noun classifiers in the literature. It consists of nominal prefixes which are more similar morphologically to a noun class system than to a noun classifier. They indicate notions of visibility and distance combined with some elements of position somewhat reminiscent of some classifier semantics (Klein 1979). Another marginal type semantically similar to the Toba system is so-called article systems of North American languages. One example is found in Squamish (Salishan) where articulate gender with an elaborate deictic system (Kuipers 1967). Another example are the three articles of Mordan (Dwass) which mark three positions reminiscent of the three basic shapes of numeral classifiers: vertical or one-dimensional, horizontal, two-dimensional or flat, and sitting or three-dimensional (Barrow & Serzinko 1982).

3.2.7. Prototypes and mixed types

Gender/noun classes and the different types of classifiers (nouns, positive, and verbal classifiers) have just been presented as if they were discrete types, although they represent more focal points on various continua than discrete types. In fact many instances of classifier systems do not fit squarely into any of the types considered and how some systems blend one into another through time will be discussed in 4. One of the difficulties in assigning a system to a particular type arises when the classifying elements have other functions than the strict classifier functions just presented, such as multiple inferential and derivational functions. This is the case for instance in numerous languages of lowland South America (Altkunwald 2000: 204–241; Derbyshire & Payne 1990; Payne 1987) that might be best reanalyzed as having noun class systems at various stages of grammaticalization. In Munuduru, for instance, the same set of classifiers is found on verbs, nouns, numerals, demonstratives, and adjectives:

<table>
<thead>
<tr>
<th>Munuduru (Tupian; Derbyshire &amp; Payne 1990:261):</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) on verbs</td>
</tr>
<tr>
<td>beklitik ako-ba child banana-cl.long</td>
</tr>
<tr>
<td>(b) on noun and number</td>
</tr>
<tr>
<td>xirup-a wek-k-a two-cl. round potato-cl. round</td>
</tr>
<tr>
<td>(c) on noun and demonstrative</td>
</tr>
<tr>
<td>ilu batho</td>
</tr>
</tbody>
</table>

The Munuduru system is therefore at once like a verbal classifier system — in that it classifies the absolutive argument of the verb — but like a numeral classifier system in that it classifies by shape and is affixed to number and demonstrative — and like a noun class system — in that it inflects directly on the noun and functions like an agreement system.

3.3. Arguments in support of the typology

With the above caveat that the typology does not mean discrete types of classifier systems, but rather emergent prototypes, several arguments will be presented in support of the typology, in particular in support of a distinction between the major types found in the noun phrase: numeral, noun, and positive classifiers.

3.3.1. Argument 1: Co-occurrence of types

The strongest argument to be brought forth is the simple fact that several types of classifiers may co-occur in a single language. Macro- nesian languages like Pohnapean, for instance, have both positive classifiers and numeral classifiers. The most striking example of multiple classifier systems found within the same language is the case of the Kaninjaban Mayan languages of the Northwest of Guate- mala (Craig 1987, 1990; Zavala 1989, 2000). In these languages a noun may be accompanied by up to four distinct classifying morphemes: number + number cl + numeral cl + plural cl + noun cl + noun...

97. Classifiers

(Qanjob'al) classifiers:

<table>
<thead>
<tr>
<th>Type</th>
<th>Meaning</th>
<th>Numeral</th>
<th>Noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) ex-cl.</td>
<td>'no'</td>
<td>pl.</td>
<td>cl.</td>
</tr>
<tr>
<td>(b) ex-cl.</td>
<td>'no'</td>
<td>pl.</td>
<td>cl.</td>
</tr>
<tr>
<td>(c) ex-cl.</td>
<td>'no'</td>
<td>pl.</td>
<td>cl.</td>
</tr>
</tbody>
</table>

The four types of classifiers shown are:

(a) Fused numeral classifiers, of which there are only three, for human(animal)/feminine-nouns, obligatorily suffixed to the number, and maybe derived from the independent numeral classifiers of (b).

(b) Independent numeral classifiers, of which there are only about a dozen sorted ones (including vertical/circular/round/three-dimensional flat and large classes). The mensural classifiers have the same surface form, but differ by being derived from positional roots and much more numerous, and by controlling different agreement rules.

(c) Plural classes which inflect on the plural morphemes, for one of two or three classes (human/animal/feminine) depending on the language. This obligatory classification is highly grammaticalized and is a remnant of gender.

(d) Noun classifiers, which are omnipresent in those languages, functioning as determiners and other pronominal, totally independently of quantification. There are 12 to 19 noun classifiers per language/ dialect, the most common ones being human masculine/feminine/old respected kin/animal/wood/rock/divine/fruit/corn/wa- ter.

3.3.2. Argument 2: Matching morpho-syntactic types and semantics

A second argument is semantic and consists in linking each major morpho-syntactic type with a dominant semantic domain. When classifiers are categorized semantically as belonging to one of the three basic semantic domains of classifiers — material, shape and function — a clear alignment emerges. Beyond the great variation in the semantics of numeral classifiers, the semantic domain with the greatest consistency and the highest rate of frequency is that of shape. Meanwhile, the semantics of noun classifiers fall predomi- nantly into the two semantic domains of material (inherent essence of the object) and relational status of humans (based on kinship or social status). In contrast, the positive classifiers are overwhelmingly of the functional kind. This matching of morphosyntax and semantics is illustrated below (Ossen 1999):

<table>
<thead>
<tr>
<th>CL type</th>
<th>Semantics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shape</td>
<td>Numeral classifier shape</td>
</tr>
<tr>
<td>Material</td>
<td>Numeral classifier material</td>
</tr>
<tr>
<td>Function</td>
<td>Numeral classifier function</td>
</tr>
</tbody>
</table>

Tab. 97.1: Morphosyntax and semantics

The correlation is striking in its consistency, considering how the majority of classifier systems are heterogeneous systems that mark the complex development patterns (see 3.4). What such correlations might mean has been outlined in the literature (see De León 1988 for Tzotzil numeral classifiers, Craig 1986 for Q'anjob'al noun classifiers, and Carlson & Payne 1989 for Oaxacan genitive classifiers). The answer is to be found in the real world conditions for the use of each construction type. The use of numeral classifiers primarily for quantification, that prototypically occurs in a marketing context where handling of the objects is paramount, may account for the dominance of a categorization by shape in such systems. On the other hand, we may account for the semantics of positive classifiers in the fact that they are used specifically in one type of possessive constructions, those involving so-called allom- erable nouns. While the notion of allomorphy may be culturally bound, it is prototypically assigned to objects whose possession is con- sidered valuable and transferable. Thus, when the possession of such objects is claimed, it is linked to a particular purpose, among the ones that ensure human survival, hence classifiers for edibles and drinkables, housing and clothing, tools and transporta- tion. Hence the fact that more genitive classifi- ers than other types of classifiers are derived from verbs and the semantics of genitive clas-
sifiers is overwhelmingly of a functional na-
ture.

The case of noun classifiers is different in
the rule that they are not linked to either real
world conditions of quantification or posses-
sion. They instead have a much closer seman-
tic link to the nouns themselves, forming with
them a tighter unit, which is often reflected in
their redundant semantics. Noun classifiers are
the nominal counterparts of the nouns they classify, or identify some inherent
feature of the noun, such as its essence or ma-
terial. They are morphologically more often of
nominal origin than the other types of classifier
and their role in the language is more intimately identified with that of nomi-
inals, as referent tracking devices.

Therefore, while all classifiers may share the
function of individuating the nouns to which they refer, the different morphosyntac-
tic types of classifiers are associated with dif-
ferent semantic bases for individuation, and
an explanation for the association of a particu-
lar semantic domain with a particular clas-
sifier type may be found in an analysis of the
pragmatic function of the constructions in
which each type of classifier occurs.

4. Dynamic dimension of classifier systems

At the juncture of lexical and grammatical
systems, classifier systems are interesting for
what they can reveal of the processes by
which grammatical systems emerge. Behind
the absolute uniqueness of every classifier
system lie some common patterns of how such systems emerge, evolve, and decay.

4.1. Emergence of classifier systems

Classifiers themselves and classifier systems
have multiple origins and paths of develop-
ment, most established systems being com-
plicated patchworks developed and renewed
over time.

4.1.1. Source of classifiers

Classifiers have their origin in the major lex-
ic classes, nouns being their most common
source. This is best demonstrated by the
widespread phenomenon of reanalysis, in which a kind of classifiers which are identical to the noun
they classify:

(24) Jacaltec noun classifiers (Q'anj'ob'alán
Mayan):

<table>
<thead>
<tr>
<th>verb</th>
<th>classifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>te' te'</td>
<td>'ct. plant tree'</td>
</tr>
<tr>
<td>ixim ixim</td>
<td>'ct. corn corn'</td>
</tr>
</tbody>
</table>

The classifiers of Australian languages are
said to have come from superordinate nouns (Dixon 1982), those of incorporated verbal
classifiers from both generic and specific
nouns (Mithun 1986). One of the most striking
facts about the origin of classifiers is the
very widespread recurrence of a very small
and specific set of lexical nouns that has
given rise to classifiers all over the world.
They are three nouns of the plant domain:
tree, leaf, and fruit, the first one being by far
the most universal source of classifiers.
Verbs are another source of classifiers, al-
though relatively infrequently when com-
pared to nouns. Scattered examples from nu-
meral and genitive classifiers are:

(25) Tzotzil numeral classifiers (de León
1988:55):

<table>
<thead>
<tr>
<th>verb</th>
<th>classifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>p'o 'to cut'</td>
<td>'short length'</td>
</tr>
</tbody>
</table>
| h'a 'to break'  | 'a piece broken off' (corn on the cob, ba-
nana, sugarcane, wood, dry cement) |

(26) Main (Mayan; in Zavala 1989): verb of
eating

| (a) chi' 'to eat cooked food' | 'my (cooked) fish' |
| nch'-ye'                    | 'chul |
| I-GEN.CL-POS fish           | 'my (cooked) fish' |

(b) In 'to eat fruit

| nch'-ye'                    | 'zapote' |
| I-GEN.CL-POS zapote         | 'my zapote fruit' |

(c) ya 'to eat tubercules

| nch'-ye'                    | 'ts'in |
| I-GEN.CL-POS yuca (cassava) | 'my cassava' |

A rare instance of verbal classifiers with a
verbal source has also been documented:

(27) Imonda (Papuan; W. Seiler 1986):

<table>
<thead>
<tr>
<th>verb</th>
<th>classifier</th>
</tr>
</thead>
</table>
| fre 'to remove' | fre 'object going in
| from fire'      | the fire, wood, food
| cooked in fire' | cooked in fire' |
| put 'to cut'    | put 'a piece of
| pot 'to pick fruit' | 'fruit picked from trees' |

As it is, the origin of the vast majority of clas-
sifiers cannot be determined from synchronic
data. Examples cited above are more the ex-
ception than the rule in the languages from
which they were extracted. However, enough
systematic connections can be gleaned from
the various systems to establish with relative
certainty the lexical origin of classifiers. The
semantic transparency of classifiers and the
ability to connect them to lexical sources is in
fact one of the criteria used in evaluating the
age of a classifier system: the more numerous
the connections, the more recent the system
is assumed to be.

4.1.2. Semantic evolution of classifiers

From their original lexical semantics, classifi-
cers undergo a process of semantic extension
because the kinds of categories that classifiers
refer to are very different from the kinds of
categories nouns refer to. While nouns refer to specific entities, the classifiers from
which they are derived refer, in an initial clas-
sificatory role, to kinds of entities. Examples
are 'berry' for all fruits in Mohawk (Iroquoian),
'tree' for all plants in Jakaltek (Mayan), 'ca-
noe' for containers in Squamish (Salishan) or
'sailing vessel' for all vehicles in American
Sign language. This first level semantic exten-
sion of classifiers is most typical of noun clas-
sifiers and incorporated verbal classifiers,
which of all types of classifier are the ones
which have the most nominal function.

The majority of numerical classifiers, on the
other hand, exhibit a further semantic exten-
sion as they metaphorically classify objects
by perceived qualities, principally those of
shape, secondarily those of consistency. The
most widespread examples of such meta-
aphorical extension occur with the cluster of
plant part names, which very consistently
 gives rise to classifiers for the basic one-, two-
, and three-dimensional shapes, as in 'tree' for
long (and rigid), 'leaf' for flat (and flexible),
'fruit' for small (and) round. A par-
allel metaphorical extension occurs with the
verb classifiers derived from nouns of body
parts. The basic shape classifiers come from
one of two sets of body parts, either of hu-
man in upright position: 'arm/long' and 'eye/
round', or, as in Tarascan, of four-legged ani-
mal: 'neck/throat/long', 'back/flatt', 'buttock/
roundish'. In Mixtec, the noun classifier for
animals has evolved to classify round shapes.
In Imonda, the verb classifier for flat and
flexible objects originated in the verb 'to give
birth'. Another very common semantic exten-
sion is from material to consistencies, such as
water for all liquids; in Imonda, the liquid
classifier comes from the verb 'to scoop water'. In Jakaltek (Mayan) the classifier for
rock has come to classify all hard objects,
from glass and metal objects to ice. The third
type of metaphorical extension is that which
takes a classifier of nominal origin to classify
objects used for a particular function, increas-
ingly independently of the shape of the
object classified, as when an early mode of
transportation (canoe, sailing vessel) is the
source of a classifier for all modern modes of
transportation.

Another perspective on the extension of the
semantics of a classifier is how some clas-
sifiers progress from unique via specific to
general classifier status, from defining a simple
class of one member to defining an increas-
ingly complex and heterogeneous one. Chi-
inese provides attestation of a complete sce-
nario of such an evolution which implies the
mixing of prototype extension and chaining
processes discussed in 2.3:

(28) Chines (Erbaugh 1986:429):

<table>
<thead>
<tr>
<th>verb</th>
<th>classifier</th>
</tr>
</thead>
</table>
| ge 'unique classifier for bamboo >
specific classifier for bamboo >
lengths of bamboo >
class extended to include: arrows, can-
dles, dogs, chickens, horses >
later extended to include fruit, birds, people |

until it is presently a general classifier for
people and unclassified objects.

4.1.3. Morphosyntactic paths

of evolution of classifiers

One aspect of the origin of classifier systems
is the lexical origin of the individual classi-
sifiers, another is the grammatical origin of
the classifier constructions, which encompasses
the story of the emergence of classifier sys-
tems from other preexisting morpho-syntac-
tic constructions and the blending through
time of some types of classification into
others.

Proposed scenarios of the emergence of
classifier systems are still speculative, but
suggest multiple origins for the various mor-
pho-syntactic types of classifier. It has been
argued that the numeral classifiers of the
Thai family have their source in a very pro-
ductive noun compounding process, and the
widespread use of term classes (DeLancy 1986), and that Q'anj'ob'alán and Mixtec
noun classifiers fit in the mold of preexisting
and their morphologically rigid use (see Art. 14). Systems are thought to be recent developments when a substantial number of the classifiers can still be linked to their lexical origin. The classifier system is still largely semantically motivated, so the systems present some coherence. An example of a recent innovative system is the noun classifier system unique to the Q’eqch’i branch of the Mayan family of languages. The postulated evolution of verbal classifiers from incorporated nominal-like elements to phonologically and semantically eroded elements to fused elements of the classifier system implies that the latter are the old systems, the former the more recent ones.

Some families of languages exhibit coexisting systems of classification, with a variation across the family as to which system flourished in which language. Proto Athapascan-Eyak is said to have had two systems of verbal classification, one by stem and one by prefixed classifiers, which themselves had to be old established systems. The stem classification system is the one that flourished in Athapascan and became vestigial in Eyak, while a well developed classifier system ("class mark prefixes") appeared in Eyak (Krauss 1965). In the Mayan family, the Tzeltalan branch has a developed system, while the neighboring Q’eqch’i branch has only a limited numeral system, which coexists with a vestigial number suffixation reminiscent of gender systems, but has developed a full blown new numeral classifier system.

4.2.2. Productive, frozen, and dying classifier systems

Classifier systems vary also in their level of productivity, largely measured by their ability to deal with new nouns. From the semantics of the categories to be reanalyzed over time. The fact that this variable of vitality is independent of the variable of age can be demonstrated with two cases, Thai and Jak'ale: Thai has an old numeral classifier system which has maintained great vitality and is in constant state of renewal. An example of how the heterogeneity of a class can be reduced over time by the cyclic inclusion and exclusion of items is the case of the khun class of Thai (Carpenter 1987:171). In contrast, the Jak'ale (Mayan) noun classifier system is a recent system that was frozen until recently. It must have been pro-

4.3.2. Aphasia

The major study of loss of classifiers in aphasia also dealt with Thai and demonstrated that the semantic errors by adult aphasics were qualitatively and quantitatively similar to those made by children, and were marked by the overuse of repeaters and of a general classifier for inanimates (Gardos et al. 1985).

5. Uncommon abbreviations

M.N.C.L. mensural classifier
N.C.L. noun classifier
N.R.C.L. number classifier
N.U.C.L. numeral classifier
S.O.R.C. sortal classifier

6. References

Allan, Keith (1977), "Classifiers". Language 53, 285-311
Barnes, Janet (1990), "Classifiers in Thai". In: Payne (ed.), 271-292
Barron, Roger (1982), "Das Philozenon Klassifikationstheorie Verben". In: Seiler & Lehmann (eds.), 133-146


Denney, Peter (1976), *What are Noun Classifiers Good For?*. Papers from the Twelfth Regional Meeting of the Chicago Linguistics Society 12, 122–132.


Payne, Doris L. (1987), *Noun Classification in the Western Amazonian*. Language Sciences 9 [Special Issue: Key: M. Ritchie (ed.), Comparative Linguistics of South American Indian Languages], 21–44.


Since gender systems show some correlation with sex, many non-linguists (and a few linguists) erroneously confuse gender and sex. However, sex represents biological categorization, and gender represents grammatical categorization. Feminine and masculine genders often include inanimate nouns with no connection to female or male sex, e.g. French maison ‘house’ (feminine), château ‘castle’ (masculine).

The terms “gender” and “noun class” have also been used in quite different ways. For instance, in the Athapaskan linguistic tradition the term “gender” is used to refer to verbal classifiers which mark agreement with intransitive subject or transitive object, and characterize the referent noun in terms of shape and form (Aikhenvald 2000: 15).

1.2. Characteristics of gender systems

Gender systems have the following characteristics (cf. Aikhenvald 2000: 18–22).

(a) There is a limited, countable number of gender classes.

(b) Each noun in the language belongs to one (or sometimes more than one) class(es).

(c) 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.

(d) Some constituents outside the noun itself must agree in gender with the 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 an overt marker of gender on every noun, or on some nouns; in some languages nouns bear no gender marker.

Gender systems are typically found in languages with a fusional or agglutinating (not an isolating) profile. Gender agreement is a major criterion for distinguishing nouns from other word classes. In a language where noun and adjective have similar morphology, an adjective can generally take any gender marking where the noun is normally restricted to one gender class. Languages often have prenominal morphemes combining information about gender with number, person, case, etc.

Gender is the most grammatical means languages use for the semantic categorization of nouns. Art. 97, on classifiers, discusses other noun categorization mechanisms which are more lexical in nature.

1.3. Gender in the languages of the world

The majority of the world’s languages have gender or some other noun categorization devices (see Alkirevald 2006: 77–89).

Many Afro-Asiatic languages have two genders: masculine and feminine. A system of two or three genders is present in most Indo-European and North-West Caucasian languages.

More complicated systems of three to five genders are present in North-East Caucasian and Nakh (Central-Caucasian) languages. The Dravidian languages of South India have two to four genders (Krishnamurti 1975).

In North America, Algonquian languages have animate and inanimate genders. Two genders are also found in Chemakuan, Was- kashan, Salishan, and Siouan languages.

In Central America, two genders (animate vs. inanimate) are found in a few Oto-Manguean languages. More than half of the languages of South America show genders. A system of two genders, masculine and feminine, is characteristic of languages of the Jé, Guahibo and Arawá families, some Arawak languages, and the languages of Gran Choco.

In Africa, East Nilotic languages distinguish masculine and feminine gender (Dimendaal 1983:211). The majority of Niger-Congo languages have extensive gender systems (up to 20 agreement classes combined with number).

Genders are widespread in Papuan languages of the Sepik basin and adjoining lowland areas. Lower Sepik languages (Ndu, Ok, Sepik Hill) have two genders, feminine and masculine, which correlate with the shape and size of the referent. The languages of Torricelli and some of those of Lower Sepik have fascinating systems of about a dozen classes (see Foley 1986: 85 ff. for the example of Yimas). Extensive systems with several dozen agreement classes are found in the Papuan languages of Southern Bougainville: Naivo, Motuna (Foley 1986: 83 ff.; Onishi 1994).

A typical gender system in Australian languages contains four terms which can be broadly labelled as “masculine”, “feminine”, “vegetable”, and “residual” (see Dixon 2002).

There are no genders in the Uralic, Turkic, Tungus-Manchurian, Tibetan-Burman, South-Caucasian (Kartvelian), Eskimo-Aleut, Chukotka-Kamchatkan families, and in most Austro-Asiatic languages and the languages of South-East Asia.

2. Formal properties of gender systems

2.1. Expression of gender

Languages of the world differ in the number of gender classes they have, how much semantic basis there is to gender assignment and the possibility of changing gender assignment to match the semantic characteristics of the referent.

Some, or all, nouns, can have an overt gender marking. In those cases the gender of a noun can be inferred from its form. In Swahili, a noun prefix indicates its gender. In Apariní (Arawak, Brazil), feminine nouns tend to end in -o, and masculine nouns tend to end in -i. In Portuguese, nouns which end in -a are mostly feminine, and those which end in -o are mostly masculine (with a couple of exceptions). Some languages seldom or never mark gender on the noun itself, e.g. Ndu languages (East Sepik region of Papua New Guinea) or Ta (North Khoisan; Heine 1982: 193). This is known as “covert” gender.

Overt and covert marking can be viewed as two extremes of a continuum. In some languages, nouns can be optionally marked for gender. The marked form tends to be more specific than the unmarked, as in Turkana