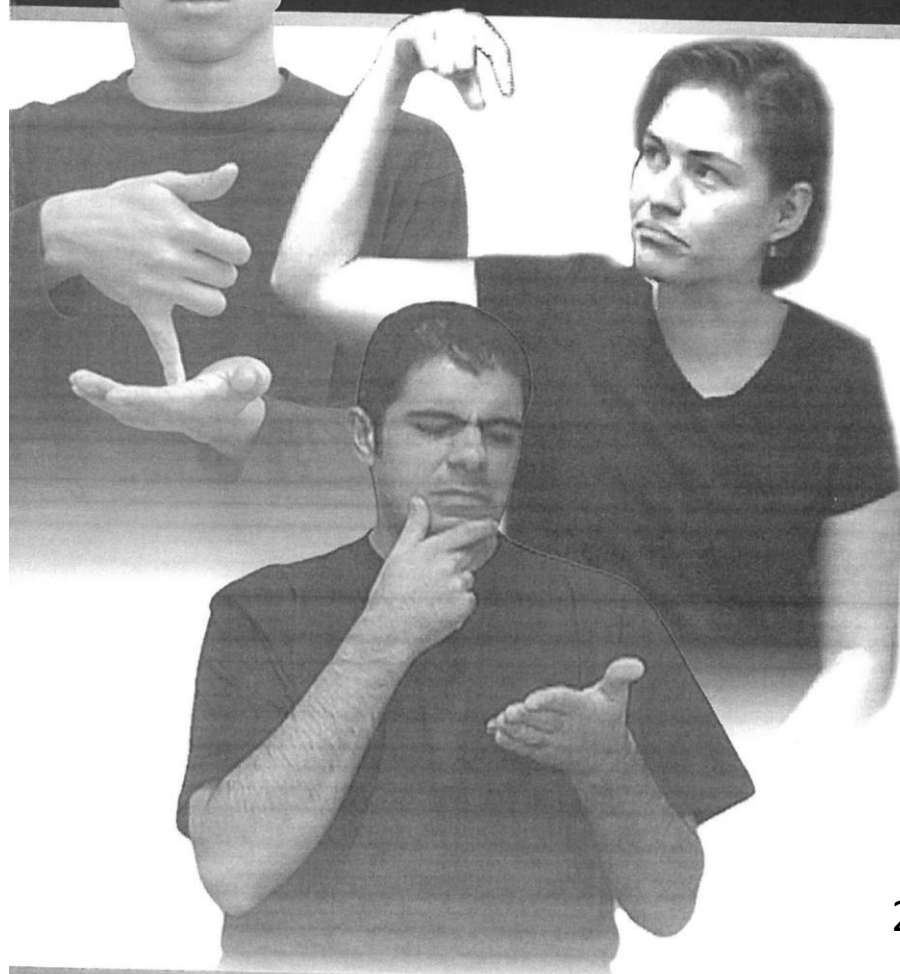


PERSPECTIVES ON CLASSIFIER CONSTRUCTIONS IN SIGN LANGUAGES



2002

Edited by
Karen Emmorey

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Classifier Systems in the Context of a Typology of Nominal Classification

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This chapter presents elements of the most recent typological work on nominal classification systems of oral languages published by the author (Grinevald 1999, 2000, 2002, in press), the choice of these elements being based on their perceived potential relevance to the analysis of the so-called classifier systems of signed languages. The chapter opens with a brief discussion of some of the principles that guide the ongoing elaboration of this typology, partly in order to articulate in what ways it might diverge somewhat from writings on the same topic by Aikhenvald (2000, chap. 4). The chapter closes with a consideration of what kind of data from signed languages could facilitate a more systematic comparison of the phenomenon of nominal classification in oral and visual gestural languages.

GUIDING PRINCIPLES OF THE PRESENT TYPOLOGY

The typology to be presented here follows two guiding principles. The first is an a priori position, which was originally taken to deal with the specific challenge of linguistic description posed by nominal classification systems of the Amazonian region, but is also expected to be useful for a comparative description of the manifestation of nominal classification in signed languages. The second is the embracing of a particular theoretical framework, with all its descriptive implications.

The a priori is the choice made not to lump (almost) all instances of nominal classification systems under the same label of *classifiers*, in the interest of confronting head-on the diversity of such systems, while still acknowledging their possible partial overlaps. The effort therefore will tend specifically toward teasing apart various types of systems, to be identified by specific terminology, and characterized through their most prototypical exemplars. This will mean separat-

ing at first the more lexical systems from the more morphosyntactic ones, as well as the most grammaticalized ones, in order to establish classifier systems as intermediate lexicogrammatical systems distinct from both. In this approach, the expression, *nominal classification systems*, is the cover term for all the systems that appear to organize nominal elements of a language into some morphologically marked classification, whether it be within the lexicon or as part of the morphosyntax of the language, while the term, classifiers, is reserved for a particular subset of those systems. Using the term, classifiers, in a more generic way for a greater variety of systems of nominal classification only begs the question of finding other terms to deal with subsystems that can obviously be regrouped in a distinct type. It could also contribute to maintain a certain level of unnecessary uncertainty for those who are little familiar with the phenomenon, by obliterating the recognition that some systems share more characteristics than others, in particular the classifier systems proper among themselves.

In fact, these classifier systems present challenges of their own, such as the existence of different subtypes. There are, for instance, distinct systems of numeral, nominal, genitive and verbal classifiers, all well established by now, although their distinctive characteristics are still often not taken seriously enough into account in the discussion of the phenomenon. In this context, using the term, classifier, as a more general term might not help account for the specificities of those different subsystems (according to a linguist who has spent much ink claiming, e.g., the existence of a so-called noun classifier system, distinct from the much better known numeral classifier systems, to apparently no avail in that both systems continue to be lumped together in numerous discussions, in spite of arguments presented as to their distinct semantics and morphosyntax). Another reason to maintain the term, classifiers, for a particular type of nominal classification system is the pending issue of the exact number and nature of their subtypes.

The basic need for more extensive fieldwork on all systems of nominal classification, including classifier systems per se, is in fact the main motivation for taking this a priori "nonlumping" position. The concern is indeed to facilitate as much as possible the systematic collecting of new data, including that of field linguists not specialists in the phenomenon, and the subsequent analysis of this data in a manner that will permit more comparative work. With this goal in mind, the recommendation is to proceed in two steps: the first one consists in identifying those systems that are less problematic to analyze within the present state of knowledge of this phenomenon, systems that correspond to clearly recognizable types of subsystems. After this first screening, the second step consists in the more challenging task of dealing with more complex systems of apparently mixed nature in order to analyze the kind of blending they seem to exhibit.

Beyond the nonlumping position just articulated, the second guiding principle is to cast the typology within a functional–typological approach, and to claim that such a framework is particularly apt at handling the kind of descriptive challenge data from apparently more complex systems, in particular systems considered as mixed systems with partial overlaps across various types of systems. Essential to the functional–typological approach, as it was originally articulated, for instance, by Givón (1979, 2001), is an approach to linguistic categorization that appeals to the notion of prototype and applies it beyond the lexical domain to that of morphosyntactic and syntactic domains. In this approach, one can assume that nominal classification systems can be more or less prototypical too, or more or less at the fuzzy edges of categories or types, possibly overlapping partially over two distinct types. Es-

dynamic nature of linguistic systems, in particular that of the morphosyntactic ones, always raising the issue of their level of grammaticalization, and taking into account as well their age and their particular stage of evolution. Keeping track therefore of the existence of a variety of subsystems, as well as of the specific dynamics of the systems of a particular language, provides a productive way of handling the sometimes almost overwhelming variability of nominal classification systems.

The guiding principles of this typology of nominal classification systems are therefore in great part strategic, keeping in view all the fieldwork that remains to be done on languages with such systems, many of which are indigenous languages still little described (and not surprisingly in the now large category of endangered languages). They would seem to be applicable as well to developing work on the phenomenon in signed languages.

OVERVIEW OF A TYPOLOGY OF NOMINAL CLASSIFICATION SYSTEMS

This typology is basically a morphosyntactic typology that considers the variety of systems on a lexical–grammatical continuum, and that identifies the particular type labeled classifiers as a set of intermediate lexicogrammatical systems (more precisely lexicomorphosyntactic systems), as sketched below:

(1) Overview of systems

<Lexical.....	Lexicogrammatical.....	grammatical...>
class-terms	"CLASSIFIERS"	noun classes
measure terms		gender

The particular type of nominal classification system identified as classifiers is itself constituted by a set of classifier systems identified by their respective morphosyntactic locus. The major systems discussed in the general literature on classifiers of spoken languages are the following:

(2) Major classifier systems

[POSS+]	CL Numeral+	CL	CL+NOUN // Verb-	CL
	<i>Genitive</i>	<i>numeral</i>	<i>noun</i>	<i>verbal</i>
	<i>Classifier</i>	<i>classifier</i>	<i>classifier</i>	<i>classifier</i>

Three major types are distinguished within the noun phrase: noun classifiers, with the noun directly; numeral classifiers, in quantitative constructions; genitive classifiers, in possessive constructions. Numeral classifiers can also appear secondarily on adjectives and demonstratives. Another major type of classifiers is found inside the verb form—hence its label of *verbal classifiers*—from where they classify the nominal arguments of the verb on a semantic basis similar to that of the classifier types found within the noun phrase. Prototypical exemplars of systems would be the ones with the characteristics that most clearly distinguish them from other systems (i.e., with the least amount of features overlapping with that of another system).

The following examples illustrate each subtype of classifier system with such prototypical examples:

- (3) a. Noun classifiers; JAKALTEK (Craig 1986a, p. 264)

xil naj xuwan no7 lab'a
saw CL John CL snake
'(man) John saw the (animal) snake'

- b. Numeral classifiers; PONAPEAN (Rehg, 1981, p. 130)

Pwihk	riemen	'two pigs'
Pig	2+CL:animate	
Tuhke	rioapwoat	'two trees'
Tree	2+CL:long	

- c. Genitive classifiers; PONAPEAN (Rehg, 1981, p. 184)

Kene-i	mwenge	'my(edible) food'
CL-GEN.1	food	
Were-i	pwoht	'my(transport) boat'
CL-GEN.1	boat	

- d. Verbal Classifiers; CAYUGA (Mithun, 1986, p. 386-388)

Ohon'atke:	ak-hon'at-a:k	
It-potato-rotten	past.I-CL-eat	'I (potato)ate a rotten potato'
So:wa:s	akh-nahskw-ae'	
Dog	I-CL-have	'I (domestic.animal)have a dog'

The two major arguments that have been presented in support of the existence of different subtypes of classifiers in Craig (1992) and Grinevald (2000) are the possible co-occurrence of systems within the same language and the different semantic profiles of the distinct classifier types (which are assumed to correspond to different functions of those systems, a potential third argument that remains to be fully developed).

What follows is a presentation of the major four parameters on which the typology is constructed: the first three have been discussed in more or less explicit ways in the literature and consist in identifying: (a) the loci of the classificatory elements; (b) the semantics involved in those systems; and (c) the function and use of such systems. The fourth parameter is the multidimensional approach already mentioned, which combines the various dynamic aspects of those systems. All four parameters will be taken up in turn.

LOCI OF CLASSIFICATORY ELEMENTS.

This approach to the study of classification systems is a distributional one that takes into account the loci of the classificatory elements and is in fact implicit behind the terminology most widely used. It is the one most accessible for the initial description of nominal classification systems of little known or undocumented languages, to the extent that basic morphology is the most accessible aspect of those languages for field-workers.

As it turns out, classificatory elements may be found in many loci of the clause, but seem to fall within two major groups: those forming patterns of local agreement within the noun phrase and those forming a long-distance concord system between nominal and verbal elements, as sketched in (1a and 1b) above.

A morphosyntactic approach to the overall diversity of nominal classification systems consists in distinguishing types of systems basically by the number and the nature of the loci of the classificatory elements (marked as CE below):

- (4) a. [N + CE det+CE adj+CE num+CE poss+CE [X+CE]]
b. [V+CE]

Such an approach would identify at least the following patterns of nominal classification systems:

- (5) a. N-CE
b. num+CE (dem+CE)
c. poss+CE
d. verb+CE
e. [N+CE X+CE Y+CE Z+CE]

The structural patterns outlined in (5a to 5e) correspond to the following types of nominal classification systems:

- There are in fact two distinct systems subsumed under this basic pattern of a classificatory element accompanying a noun directly. One is a system of a lexical nature (compounding or derivation) creating new lexical items, and to be labeled here *class terms*. An example from English is the case of the *-berry* compounding element of *strawberry*, *blueberry*, or *boysenberry*. The other is a system of a morphosyntactic nature, in which the classifying element accompanies the noun while remaining its own entity. It corresponds to one of the classifier subsystems, labeled here *noun classifier* (see Craig, 1987, for the description of such a system in a Mayan language). The two types of CE are sometimes confused to the effect that class terms are called classifiers in numerous language descriptions.
- This pattern corresponds to the instances of classificatory elements encountered in quantifying constructions, and labeled *numeral classifier systems* on the basis of their use on a numeral (or a quantifier in some languages). In some languages, the same classificatory elements are also used in demonstratives and adjectives. Numeral classifiers constitute the best known type of classifiers; they are common among South East and East Asian languages.
- This is the pattern found in possessive constructions, and known variously as *possessive classifiers* or *genital classifiers*, or *relational classifiers*. There may be several subtypes of those, depending on which of the two nominal elements of the possessive construction is being classified, as clarified by Aikhenvald (2000). They are, for instance, a characteristic of the Micronesian languages (see Carlson & Payne, 1989, for an overview of this type).
- This pattern shows classificatory elements on the verb form that are considered in oral languages to be in some concordial relation with an external nominal argument of the verb. These so-called *verbal classifiers* have been described for some North American Indian languages, although not always with a clear distinction between lexical classificatory verbs and actual segmentable verbal classifiers. It is worth noting here, in the context of a discussion of classifiers in signed languages, that the situation of Navajo, one of the languages most commonly brought into focus for comparison with signed language classifiers, falls in the domain of classificatory verbs rather than strictly speaking verbal classifiers.

- e. In this pattern the classificatory elements are typically repeated on several elements of the clause. It corresponds to the systems generally labeled *noun class systems*, of which the Bantu systems represent the most prototypical cases. Although these systems are generally used in the general linguistic literature as instances of extensive and relatively regular agreement patterns, the reality of the varied spoken, and nonnormalized languages of this large family of languages includes a great variety of systems, with many that are much less extensive in their agreement patterns, more selective in the loci, and variable both as to the morphological nature of the marks and as to the obligatoriness of their use (Grinevald & Creissels, 2000). In their extensive agreement pattern, these systems are akin to the gender systems of Indo-European languages.

One approach to capturing the great variety of nominal classification systems has therefore been to label them by their principal loci, distinguishing between those that are essentially one-locus systems, such as the lexical system of *class terms* and the morphosyntactic systems of *classifiers*, and those that are multiple-loci systems with more or less extensive and complex agreement patterns, such as the ones traditionally labeled *noun class systems*.

SEMANTICS

One of the interesting aspects of most of these nominal classification systems is their semantic motivation. Unlike gender systems with limited number of classes and extensive desemanticization of the classes (why are forks and plates feminine in French—*une fourchette*, *une assiette*—but masculine in Spanish—*un tenedor*, *un plato*—for instance?), most other systems are characterized by more retrievable semantic motivation, as well as much larger number of classes.

There have been at least three major proposals, dating from the 1970s and classics of the field by now, which have attempted to capture the universal semantic properties of nominal classification systems. They are Adams and Conklin (1973), Denny (1976), Allan (1977); being written in the seventies when the issue was not being raised, they all had a tendency to overlook the existence of different types of systems. The impact of those articles has therefore also contributed to the lingering tendency to lump systems under the label of classifiers. Denny (1976) offered the elegant proposal of distinguishing between semantic traits of what he called “social, physical, and functional interaction” (p. 125). In the social interaction realm fall the animate entities of our world, principally fellow human beings, classified by gender, social rank, or other categorization schema, as well as other entities such as divinities and other powers specific to a culture. In the physical interaction realm, objects of the world are classified along certain parameters linked to their nature as manipulable and manipulated objects, principally the parameter of shape.

The semantic trait of shape, which is of particular interest for signed languages, has been the object of great attention in the study of classifiers of spoken languages. Allan (1977) detailed some of the same semantic traits as Denny (1976), noting in particular the primacy of three basic shapes, themselves semantically combinations of one of the major dimensional outlines of objects (1D, 2D, 3D) with a secondary characteristic of consistency and/or size. As noted earlier by Adams and Conklin (1973), the three basic shape classes found in (numeral) classifier systems of Asian languages are the following:

- (6) universal semantics of shape classifiers:
one dimensional 1D, as long and rigid;
two-dimensional 2D, as flat and flexible;
three-dimensional 3D, as round.

Further discrimination of texture and size of objects are said to intervene in larger systems (e.g., such as grainlike, i.e., small round, or pointed, long, and rigid).

To be noted is the particular lexical origin of many classifiers of shape, which links the most common classifiers to nominals of the vegetal domain, in the following pairs (Adams, 1986; Adams & Conklin, 1973):

(7) Basic set of shape classifiers and their origins	
CLASSIFIERS	LEXICAL ORIGIN
1D: long-rigid	tree/trunk
2D: flat	flexible leaf
3D: round	fruit

Denny's (1976) third semantic regrouping are the classifiers that fall in the functional interaction realm, where entities of the world are classified by the use to which they are put, such as items of clothing, hunting or fishing, transportation, etc. It is actually often difficult to say whether the semantics of a classifier correspond to strictly physical characteristics of shape or to one of function, because certain shapes naturally lend themselves to certain functions. For instance, are objects hollowed or made to be concave to be considered for their shape, as round hollow objects, or for their function, as recipients and containers?

The above discussion of the semantics of shape in classifiers needs to be placed in its proper context; as will be said again and is often ignored in the discussion of semantics of classifiers, shape is typical of numeral classifier systems, and some subtype of verbal classifiers in spoken languages (if one maintains the constraint of classifiers being segmentable morphemes, excluding the case of lexically classificatory verbs). The above discussion of shape classifiers was also restricted to the so-called “sortal classifiers” (identifiable as a rule of thumb for speakers of Indo-European languages as those classifiers whose semantics appear to be redundant with respect to the semantics of nouns); why speak of “round” oranges, “long rigid” arrows, or “flat flexible” blankets?). Sortal classifiers are to be distinguished from “mensural” classifiers, which are akin to the elements of mensurative constructions found in all languages of the world and that include measure expressions (a “handful” of books, a “crowd” of people, a “gallon” of milk) and configurations (a “pile” of books, a “line/circle” of people, a “puddle” of milk). These mensural classifiers may come in great numbers in numeral classifier systems, whereas the set of sortal classifiers that attend to the material or the shape or the function of individual objects is usually small. For instance, of the hundreds of Tzotzil numeral classifiers, only seven are actually sortal classifiers (deLeón, 1988).

Although the semantics of shape and function have been emphasized here, because of their relevance to the classificatory systems encountered in sign languages, it is worth noting that some systems function on the semantic basis of the material essence of the objects classified (animal, vegetable, mineral). In fact, exploratory work points to a certain alignment between types of semantics (shape vs. function vs. material) and morphosyntactic types of classification systems, at least among classifier systems, as discussed in Grinevald (2000). Shape seems to be the

dominant semantic parameter in numeral classifier systems, whereas function is the major semantic parameter of genitival classifier systems, and material the major one of noun classifier systems, opening up the question of why such an alignment.

Besides varying as to the semantics of their individual classifying elements, systems of nominal classification vary also greatly as to the number and specificity of the classes they form.

Within the literature, one finds different labels for classifiers that head from very simple to very complex classes, i.e., from homogeneous classes, with transparent semantic motivation to very heterogeneous classes, which are usually considered as made of a core set of prototype elements to which others have been added through various means of extension. The most notorious example in the literature of a system with heterogeneous classes is probably that of the system of Dyirbal (actually not a classifier system per se but rather a noun class one, originally described by Dixon [1972, 1982] used by Lakoff [1986, 1987]), together with the case of the Japanese numeral classifier *hon*, for an exercise in motivating the heterogeneity of some classes.

One talks, for instance, of specific, general, unique and repeater classifiers. *Specific classifiers* are the most common type. The classes they head are built around prototypical exemplars, with incorporation of other elements by any number of types of extensions of the class. *General classifiers*, as their label indicates, are largely dessemanticized and head large heterogeneous classes with no distinct semantic motivation; whereas *unique classifiers*, at the opposite end, head classes of just one element. The term *repeaters*, on the other hand, refers to classifiers that are copies of nouns, whether they function as unique or specific classifiers. Large Asian numeral classifier systems are known to have general classifiers, pseudoequivalent to the cover words *truc*, *machin*, of French or *thing* of English. The distinction between unique and repeater is not often made clear in descriptions, although examples from the noun classifier system of Jakaltekt-Popti' can illustrate the concepts (Craig, 1986).

(8) Type of classifier	CL	Class members
"specific"	no'	ALL animals, except dog, All products of animals (Egg, milk, leather shoes, wool blankets, etc.
"unique"	metx'	ONLY <i>metx' tx' i</i> 'dog'
"repeater"	tx'otx'	<i>Tx'otx' tx'otx'</i> 'dirt, ground' AND all objects made of clay (<i>tx'otx' xih</i> 'pottery jog' etc...

Although the examples of Jakaltekt-Popti' come from a noun classifier system, the mixture of more or less specific classifiers is particularly prevalent in large numeral classifier systems.

FUNCTION AND USE

As mentioned already, the classifying elements function either lexically or morpho-syntactically. In one case, they contribute to the creation of lexical items by compounding or derivation;

in the other, they are part of the morphosyntactic inventory of the language, more or less grammaticalized (i.e., obligatory), in function of determiner or anaphoric element. Some systems are clearly uniquely lexical (the *-berry* element of *strawberry*, *blueberry*, *boysenberry*), and others clearly uniquely morphosyntactic (the noun classifiers of Jakaltekt [Craig, 1987], or the numeral classifiers of Tzotzil [deLeón, 1988]).

But the situation is more complex when the same set of classifying elements seems to cover both types of function. This duality has been handled in one of two ways. One is as a characteristic of specifically one kind of system, namely the *noun class system*, on the basis of the ample documentation of its best known exemplars from the Bantu languages. The other is as the co-existence in the same language of two systems of nominal classification, one lexical and one morphosyntactic (as argued by deLancey, 1986 for the coexistence of class terms and numeral classifiers in the languages of the Tai family, as the name of the family is spelled). Much work remains to be done in this area, in order to argue language by language for which the issue arises, whether one is faced with one single complex system of noun classes or two distinct systems of class terms and classifiers, which are diachronically linked.

This challenge is particularly present today for the description of many Amazonian languages with very rich and complex systems of nominal classification, which have been variously labeled as *multiple classifier systems* or as *noun class systems*.

The most common discourse use of classifying elements at an advanced grammaticalization stage is that of being a referent tracking device, to the point of raising the question of whether talking of *classification* is not in fact an unfortunate misnomer. This label of classifiers may reflect more of an ethnocentric approach to the phenomenon on the part of speakers of Indo-European languages fascinated by the mere existence of such systems and what appears to be, from an outsiders point of view, their semantic classificatory functions. Meanwhile, it may well be that the purpose of such linguistic systems is really that of referent identification and referent tracking and that what is talked about as classificatory function is no more than a secondary classifying effect. In particular, the numerous cases of supposedly classifying elements that are full repeaters or simply truncated forms of full nouns would seem to point in that direction.

As for the actual use of the morphosyntactic nominal classification systems (which include the classifier systems proper and the noun class and gender systems), it varies precisely according to their degree of grammaticalization. Both classifiers and noun class systems can be found at various stages of emergence with characteristics of increasing grammaticalization, as well as various stages of decay with increasingly irregular morphology. By definition within this typology, it is a characteristic of prototypical classifier systems to stand at a clear midpoint between lexicon and grammar, in that they are semantically motivated systems of recognizable lexical origin, with morphosyntactic relevance in the language but still within discourse and register sensitive rules of usage.

A MULTIDIMENSIONAL APPROACH

Perhaps the most original contribution of the present typological work on nominal classification systems is the attention given to their inherent dynamics. This multidimensional approach is meant to answer many of the questions raised by the seemingly great variability of the systems, as well as by the existence of overlapping systems in some parts of the world, in particular in languages of Asia and Amazonia where classifier, noun class and class term systems co-occur.

The dynamic dimension that has received most attention is that of the degree of grammaticalization of the different types of systems. The original work in that area has focused on distinguishing between major types of nominal classification systems, principally between noun class systems and classifier systems, originally on the basis of the challenge presented by data of Australian languages. It seemed established early on that noun class systems, which are characteristically concordial systems and that have often been lumped together with gender systems, are essentially more grammaticalized than classifier systems. The parameters for such an analysis are found in the now classic works by Dixon (1982b, 1986), and a synthesis of subsequent discussions of the parameters of grammaticalization can be found in Grinevald (2000) in the form of a list tailored to address the issue of classifier systems as intermediate lexicogrammatical systems.

Certain cases of overlap of classification systems may be attributed to progressive grammaticalization across systems. Lexical class term systems may give rise to lexico-grammatical classifier systems for instance, and classifier systems may be at the origin of noun class systems, which themselves may reduce to smaller gender systems. Being able to build this grammaticalization cline relies as a matter of fact on the existence of marginal systems with characteristics of two systems at once.

More recent work has been focusing on the grammaticalization dimension within various types of nominal classification systems, comparing, for instance, incipient and fully grammaticalized noun classifier systems (see Grinevald, 2002 with Australian vs. Mayan data, as a response to Wilkins, 2000), as well as developing vs. fully developed vs. decaying noun class systems (see Grinevald & Creissels, 2000, with Amazonian and Niger-Congo data). Data from Central American Chibchan languages can also show how systems of numeral classification can be apparently as grammaticalized as gender systems, very much in contrast with the more discourse sensitive numeral classifiers of most Asian languages. It probably needs to be specified here that establishing the level of grammaticalization of a system in a descriptive fashion does not make predictions about its future; systems may indeed stabilize at a fairly incipient or developing stage of limited grammaticalization without showing signs of evolving into more grammaticalized ones.

Other dynamic dimensions to be considered are the age and the vitality of the system, as independent from the grammaticalization parameter. There are very old systems, like the Chinese system of numeral classifiers with an extensive historical documentation; and there are much younger systems, like the Kanjobalan-Mayan systems of noun classifiers, which appear to date back to only a few hundred years (Craig, 1990). But age is independent of vitality, as old systems like the Thai system of numeral classifiers can be very open and adaptable to the ever-changing material world of its speakers (Carpenter, 1986), whereas a much younger system like the Jakaltek Kanjobalan noun classifier system appears to have frozen in time some time between colonial times and the 20th century, not absorbing in its classificatory scheme objects of recent import in the culture that are made of material of unknown origin (Craig 1986b).

A real spread of the noun classifier system is also an important variable to consider, as such systems are easily borrowed. Interestingly enough, the borrowing may be a purely linguistic one, when the system with its morphemes and even the writing system in which it is cast are borrowed (as is the case with the Japanese numeral classifier system of Chinese origin), or it may consist of the borrowing of the idea of a classifier system, reconstituted with native morphological material. This seems to be the case of the spread of the noun classifier system in the Cuchumatanes area of Guatemala, for instance, from the Kanjobalan languages to the neighboring languages of the Mamean branch of the family (Craig, 1990).

NOMINAL CLASSIFICATION SYSTEMS AND SIGNED LANGUAGES

The following notes, comments, and suggestions about the nominal classification systems of signed languages admittedly come from an outsider to the field of signed language study and stem from a desire to see the kind of data from those languages that could facilitate a more systematic comparison between systems of nominal classification of languages of both oral and visual-gestural modalities. The essential issue of the nature of the denomination of objects in those languages is considered first, including the variations in the strategies used for the denomination of objects in isolation and in discourse context. All along, the points raised in the presentation of the typology of nominal classification systems are taken up again, such as the loci of the classificatory elements, their semantics, and their function and use. Suggestions as to the type of data that would facilitate a closer comparison of the manifestations of the general phenomenon of nominal classification systems across both language modalities are given in closing.

Although the nature of the morphology of the classifying elements of signed languages is in itself a topic of great interest in the study of nominal classification systems, it stands outside of the scope of the present considerations on the study of classifiers (classifiers per se and other classification systems as argued here). What will be retained here about this morphology is the difference between oral and visual-gestural languages in terms of the degree of arbitrariness of their signs; the signs of oral languages being by definition arbitrary signs as far as the phonological composition of their lexical roots is concerned (with the rare exception of onomatopoeic words), and those of visual gestural languages being more fundamentally iconic, at least at their origin (see Taub, 2001 for a discussion of ASL iconicity). This fact creates an essential difference in the lexical composition of those languages, and, for what is of most concern here, in the process of the denomination of the most common objects of the world, the ones with which humans surround themselves and the ones that are most readily included in the classificatory schemes of the nominal classification systems of oral languages.

As a general rule in the majority of oral languages, the denomination of movable and manipulable objects of the world consists in basic lexical roots with no explicit indication of perceptual aspects of those objects, in particular, of their shape. For instance, there is no hint of the shape of the following objects in their name in either English, French or Spanish:

(9) English	French	Spanish
knife	couteau	cuchillo
glass	verre	vaso
apple	pomme	manzana
dog	chien	perro

The phenomenon of class terms, in those oral languages with such a system, however, introduces morphological elements with some semantic motivation in the denomination of certain objects. Class terms, which are added to arbitrary lexical roots and are themselves arbitrary lexical material, nevertheless generally introduce in the denomination of objects semantic elements that evoke some visual aspect of the objects. Although in English, the phenomenon is quite limited (e.g., recall the examples of the words for -berries mentioned earlier), in some languages,

such as some Amerindian languages, it may be more extensive. In such cases it is common to see the phenomenon labeled as a system of classifiers, although by the working definitions of the present typology, strictly speaking, they are not.

Here it is worth noting again how those class terms can be shown to be secondary morphological systems that have originated in some primary lexical stock, hence arbitrary linguistic material in essence. However, to the extent that they appeal partly to the shape of the objects they help name, these class terms can indeed be argued to introduce a measure of semantic motivation in the denomination of certain objects in oral languages.

There is therefore, in those oral languages that have them, a progression from the complete arbitrariness of the lexical noun root to the partial appeal to information on visual aspects of objects through the use of either class terms or numeral classifiers. The situation with these classifying elements is then one of partial arbitrariness of the lexical material from which they originate (e.g., as in the classifying element LONG.RIGID coming from the lexical item for tree), combined with the evoked imagery conveyed by the semantics of the classifying element (that of a long, rigid object for instance).

In visuo-gestural languages, the process of denomination of objects exhibits a much greater measure of iconicity, reaching the point of consisting entirely of information on perceivable aspects of the objects. Those selected aspects of the objects, which are conveyed through the visual gestural signs and that constitute the denomination of the object, are themselves based on a schematization of the image of prototypical objects (e.g., as illustrated by the sign for "helicopter" or "tree"), where both the choice of the prototypical objects of a category and the form of their image schematization are culturally bound and language specific enough to require case-by-case studies (e.g., see the various signs for "tree" in various signed languages).

This progression from complete arbitrariness to extensive motivation in the denomination of objects is outlined in example (10), (11), and (12) below where the patterns illustrate (a) the complete arbitrariness of the nouns of oral languages without classification systems, (b) the intermediate case of partially motivated semantics introduced by class terms or numeral classifiers in those oral languages that have them, and (c) the motivated imagery of signed languages. In those patterns, italics are used for the arbitrary lexical material and CAPITALS for the motivated elements of the denomination, with the possibility of some elements being both formally arbitrary but semantically motivated.

- | | |
|---------------------|---|
| (10) a. N: | Bottle |
| b. N-Class term: | Bottle-LONG.RIGID |
| c. SIGN: | CONTOUR OF VERTICAL LONG.RIGID object |
| (11) a. N: | Banana |
| b. N-Class term: | Banana-FRUIT/LONG.RIGID |
| c. SIGN: | PEELING GESTURE or CONTOUR OF LONG.RIGID object |
| (12) a. num N | Two persons |
| b. Num-numeral CL N | Two-BIPED persons |
| c. SIGN | Two BIPEDS |

The point about the degree of arbitrariness in the process of the denomination of objects of the world in both oral and signed languages is that a measure of semantic motivation can be found in oral languages, precisely in the systems of class terms and numeral classifiers, and that this situation invites a comparison with the types of motivation found in the denomination process of signed language.

A second point of comparison between certain classification systems of oral languages and the denomination process in signed languages is their discourse dependence. It is known that in signed languages, there may be any number of possible signed representations of the same object, depending on the specificity of some of its aspects and of the particular perspective taken on it in the specific act of speech in which it is mentioned. Although in oral languages the denomination of objects through lexical roots is generally presented as stable and not susceptible to such variability, a certain amount of variability can be found in oral languages, precisely when one considers the possible choice of class terms, classifiers, or semantically motivated noun classes of some languages. This is the case with the most prototypical numeral classifier systems where the same objects may be counted from different perspectives. Consider below the possible alternative ways of counting knives in Burmese (13) or T-shirts in Japanese (14), for instance, in constructions of the form [numeral+numeral classifier N], with the additional information of what other objects can be counted the same way:

- (13) a. two-LONG.RIGID knives
(with umbrellas, spoons, etc...)
- b. two-CUTTING.INSTRUMENT knives
(with axes, scissors, etc...)
- c. two-HUNTING.INSTRUMENT knives
(with guns, bows and arrows, etc...)
- (14) a. two-FLAT.FLEXIBLE T-shirts
(with paper, table clothes, blankets, etc...)
- b. two-CLOTHING T-shirts
(with pants, shirts, dresses, etc ...)

The closest comparitors for this phenomenon in signed languages is in the set of classificatory elements known as shape and size specifiers used for the denomination of objects of the world. Those SASS were introduced to nonspecialists of signed languages interested in the phenomenon of nominal classification in general by Supalla (1986), who argued that a basic set of classificatory elements that combine according to certain rules stands behind a seemingly very open variability of the denomination of objects. What remains to be done is a closer comparison between the basic shapes and other elements of perceptual information systematically coded through those SASS and those expressed through their closest counterparts in oral language classification systems (again, class terms, numeral classifiers, and noun classes, where the systems are still semantically motivated enough to permit such a study). Therefore, although SASS are not classifiers per se and are not always kept in full view of the discussion of classifiers in signed languages, they deserve to be included in the discussion for a more comprehensive comparison of the various nominal classification systems of languages of both modalities.

In terms of foci of classifying elements, the two major areas that have been readily identified in all signed languages are those of the lexicon (just considered in the discussion of denomination of objects, through SASS), and of the verbal predicates (with verbal classifiers, also found in oral languages, although less common, and generally less well described, than other classifier systems). One major issue raised by the co-existence of those two systems of classification (lexical class terms and SASS and morphosyntactic verbal classifiers) is of course their different semantic profiles, as argued for nominal classification systems of oral languages. It would appear for instance that the classificatory elements of predicates, the so-called verbal classifiers of signed languages, would be more akin semantically to the semantics of noun classifiers, in their being more like generics. This would confirm the analysis of the major subtype of verbal classifiers in oral languages as having originated in some incorporation process of generic nouns, as argued in Mithun (1986). Furthermore, it would also appear that, in some signed languages at least, there might be other loci of classifying elements corresponding possibly to numeral classifiers, and maybe noun classifiers too, or even genitive classifiers. A more systematic checking of those possibilities remains to be done, both in terms of the structural properties of such systems and of their semantic profiles.

As far as the study of the semantics of nominal classification systems for objects of the world is concerned, a general warning seems necessary at first. It is a warning against a widespread and inherent ethnocentric bias in the study of the semantics of oral language nominal classification systems carried out by outside researchers, usually speakers of languages with no such systems who are offering semantic interpretations of such systems from an outsiders' perspective. One additional issue rarely made explicit, for instance, is whether the system categorizes referents in the world or nouns of the language, as decried by Lucy (2000). This question would need to be established for each system encountered because, as has been mentioned, there is always the possibility that a system that originally handled referents—and a limited number of referent types at that—may evolve into a systematic classification of all nouns of the language, with corresponding loss of semantic motivation of the classification process. The issue is alive for signed language classification also.

The major framework to address the issue of the semantic principles of categorization of nominal classification systems of oral languages has been the proposal by Denny (1976), and indirectly confirmed by Allan (1977), that classifying elements fall semantically into three major domains of physical, functional, and social interaction. Of the combination of form, movement, and localization, which are said to be components of the signs for objects of the world in visuogestual languages, the element of form is most evidently the most available for a comparison with nominal classification systems of oral languages. Less obvious but potentially interesting would be the study of how the elements of movement of signed denominations of objects possibly overlap with the classificatory elements said to be of a functional nature in oral languages.

The account found in Bouvet (1997) of the nature of the signs used for basic objects of the world in French Sign Language is a good place for nonspecialists of signed languages to grasp the alternative modes of denomination of objects of the world available in those languages when attempting a comparison with the semantics of classifying elements of oral languages. As far as the domain of physical interaction is concerned, there seems to be an interesting overlap between the basic shapes of objects retained in both types of languages, such as the FSL signs:

- (15) LONG.VERTICAL = bottle
 FLAT.RIGID = table
 SQUARE VERTICAL = window or mirror

One area of difference between the two types of languages seems to be the systematic addition of information on size and texture in signed languages, which is said to be only secondary and rarer in oral language classification systems, and mostly described for some large numeral classifier systems. Signs including information on the momentary position or state of an object (crumpled, broken, twisted) also find echo in some of the larger numeral classifier systems, in particular, in the area of so-called mensural classifiers. The numeral classifier systems of Tzeltalan languages for instance include hundreds of mensural classifiers derived from special roots, called positional roots, with special morphological functioning and special semantics (see Berlin, 1968). It is also interesting to identify the original shape components of the signs for what are talked about as generics, such as:

- (16) BOAT (sail and mast of ___) ⇒ vehicle
 LONG.RIGID/BIPED ⇒ person

As far as the semantic domain of functional interaction identified in some classification systems of oral languages, no direct equivalent seems to present itself in signed languages; however, as already hinted, a closer study of the movement component of signs that express the movements that accompany the handling of certain objects might be interesting. For instance, oral language classifier systems—typically, possessive classifiers, and partially numeral classifiers—appear to appeal to the function of the object in a resultative way, as shown in the list of common functional classifiers below:

- | (17) <u>Classifier</u> | <u>Classified objects</u> |
|------------------------|-------------------------------------|
| clothing: | Clothes to be worn |
| food: | Banana/fish to be cooked, and eaten |
| storing: | Recipients to contain |
| hunting/fishing. | Instruments to kill, cut, etc. |

The denomination of objects in signed languages, meanwhile, keeps track of the physical relation connecting the object to the user in a more dynamic and directly bodily fashion:

- (18) Banana BEING PEELED (to be eaten presumably)
 Window BEING OPENED (to let air in presumably)
 Recipient BEING HELD (e.g., by the handle, to pour out or drink out of, presumably)
 CUTTING MOVEMENT (of cutting instruments, for instance)

It would seem that in the area of function and use of the classifying elements in signed languages, the phenomenon would need to be considered from three different perspectives: (a) In the denomination of objects in isolation, as in citation forms out of context, of what are supposedly prototypical and non-referring objects; (b) In a topic setting, corresponding to presentational or existential constructions of oral languages, which introduce referring or non-referring objects, depending on the particular speech act, which also determines the perspective taken on the object; and (c) In the referent tracking process within the predicate, which may be in the predication of any number of types of events, in particular localization, movement, or actions requiring handling of objects.

What would be most interesting for a study of nominal classification in signed languages would be a systematic tracing of the different linguistic expressions of particular objects of the

world of distinctive shapes, considering at least the three discourse situations just outlined. Suggestions for further data to be gathered and analyzed for a more systematic comparison of the nominal classification systems of both oral and visuogestual languages could therefore include the components discussed below, starting with the constitution of a list of a number of objects of various shapes and usages, to be systematically studied in the various types of usage in which they may be found in the language.

Some of the objects of different shapes, size, texture, and function that are most often mentioned in studies of oral language classifiers are the following:

- (19) a. Animals of different shapes:
quadrapeds: cat, dog, horse, camel, elephant
bipeds: chickens, ducks, kinds of birds
others: fish, snake, insects, frogs
- b. Tree and tree parts:
trunk, branch, roots; leaves, flower
- c. Fruits and vegetables of different shapes:
oranges, potatoes, garbanzo beans, peas,
banana, pea pods, green beans, carrots, leaks
- d. Items of clothing of different shapes:
coats, dress, T-shirt, scarf, shawl,
pants, blouses and shirts (with sleeves), gloves
tie, belt, hat, shoes
- e. Table settings of various shapes:
plates, soup plates, platter, tray,
bowls, cups, glasses, bottles,
silverware
napkins, table cloth, dish towels
- f. Vehicles:
car, snow mobile, bus, tank,
bicycle, motorcycle, roller skates, skate board,
sailboat, ocean liner, raft;
airplane, helicopter, rocket
skis, stilts, snowboard
- g. Buildings:
house, castle, tent,
tower, skyscraper

There are three kinds of semantics in oral language classifiers: generics referring to entities (people vs. plant), shape (which is primary, with consistency and size as secondary), and function (food, clothing, transportation, tools). It would be interesting to identify the semantics of the two types of nominal classification systems of signed languages, the SASS and verbal classifiers, and then to follow which types of semantics are used in which types of context.

One of the primary issues in the nominal classification systems of signed languages is also that the task of delimiting the paralinguistic mimetic properties of the signs made available by the visuospatial modality of signed languages from the more strictly linguistic signs. This delimiting issue of image formation and sign formation is particularly pertinent for the description of

the elements that are candidates for the status of classifier elements. The issue exists in the types of shapes identified, as well as the notions of texture and size.

In the process of studying the classification systems applying to the diversity of objects mentioned above, one should keep track of the context of use, and separate the denomination process of objects in isolation from the process of setting up a topic in anticipation of a particular speech act. The matter is one of the particular view taken on that object, translated by a particular choice in its denomination. For instance how would a cup or a mug be signed as topic, in the following cases:

- (20) about a cup...
 - a. to be drunk from
 - b. that drops and breaks
 - c. to be put on a shelf, to be washed
- (21) about a book...
 - a. to be said to be on the table.
 - b. placed on the table: flat and closed, or standing, or turned over...
 - c. to be handed over, to be read, to be bought...

Finally the same objects must be followed through a stretch of discourse after their initial introduction, to observe the forms that serve to make reference to them in the predicate, which is the domain of verbal classifiers. Both paradigmatic and syntagmatic information needs to be gathered about these verbal classifiers. The paradigmatic information would include, for instance, the set of verbal classifiers of a particular signed language, beyond the two instances of persons and cars often mentioned; what is needed is information on how large the list is, what exactly goes into it, and how closed or open it is. *Syntagmatic information* means a comparison of how people and cars are treated in isolation in dictionaries, as generics, and nonreferential entities, as referential entities in discourse, as topics first, and then as arguments of specific predicates later. For instance, when is an animate person a vertical entity person versus a two-legged entity; what is the difference between two-legged persons and ladders, how are distinctions of sex and age/generation, or even social status made for humans (as they are by classifiers in many oral languages). The use of verbal classifiers with the same protagonists and objects (labeled *X* below) in different event types can be compared, as in the following situations:

- (22) a. General presentational/existential construction:
(there is an *X*)
- b. General static localization (there is an *X* there)
versus specific positional localization
(there is an *X* sitting/standing/crouching there)
- c. Quantification (there are *Y* number of *X* there)
- d. Event by agent or undergoer:
(*X* moves, acts, emotes)
- e. Event undergone:
(agent or force handles, makes, breaks *X*)

A systematic study of the use of verbal classifiers would also include examples of predicates that do not use them, and description of the strategies used then for the expression of the objects.

A good place to observe the dynamics of a nominal classification system of a referent tracking nature is the careful text study of the so called "generics" (candidates for classifiers in that language) of Arrandte, an Australian language studied by Wilkins. Wilkins (2000) offered a very detailed account of how the decision made by the speaker of whether to use a generic at all, and then of which one to choose over another, is a matter of verbal semantics and discourse perspective. His textual approach provides a good model of how to approach the dynamics of nominal classification systems that have remained highly discourse sensitive.

As already said, and as will be reiterated now, the questions raised here come from a hearing linguist with some familiarity with oral language classification systems but none with signed languages, and are meant as an invitation to consider the type of data that would allow for a closer comparison of the classificatory processes of human languages in all modalities. Many of the issues raised here are, of course, obvious to signers, but they are still difficult to grasp for linguists of oral languages, even linguists used to great varieties of languages, including very diverse Amerindian languages. At the heart of a possible comparison between oral language and visual gestural languages is the issue of the level of iconicity of the signs and their discourse sensitivity. And as emphasized here, the kind of information that would make the phenomenon of nominal classification in signed languages more transparent would be data of both paradigmatic and syntagmatic nature to be compared to the kind of data available in studies of oral language systems. Such data would make obvious how signed languages stand to play a key role in the development of studies of categorization in general and nominal classification in particular in human languages.

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