



HUMAN
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The Categorization of Spatial Entities in Language and Cognition

Edited by
Michel Aurnague
Maya Hickmann
Laure Vieu

John Benjamins Publishing Company

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Volume 20

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The linguistic categorization of spatial entities

Classifiers and other nominal classification systems

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This chapter focuses on the classifier systems found around the world, with particular attention to Amerindian languages. It first proposes a typology of these systems that takes into account their different characteristics (morpho-syntactic, semantic, pragmatic...) and their dynamic dimensions (grammaticalization, age, productivity...). It then describes in more detail a sample of classifier systems (from America, Asia, Oceania...), shows some of their invariants and specificities, and relates them to other linguistic systems. The final part of the chapter presents a summary of the types of information that are conveyed by classifier systems and other nominal classification systems about spatial entities (e.g., spatial properties, perceptual modalities...) and examines, as well, the different encoding strategies that seem to be used across languages.

o. Introduction

The paper is a contribution from the field of descriptive and typological linguistics meant to give an overview of some linguistic systems unknown to European languages that explicitly categorize spatial entities according to a number of criteria, such as material essence, spatial characteristics or function of the entities. This means for instance that, while in European languages one does not have to specify that tables have four legs and are usually made of wood, or that oranges are fruits and are of a spherical shape, or that a tree is long and rigid, vertical or standing, in certain languages of the world this type of information is systematically given. This paper will focus on the so-called classifier systems found around the world that do so, with a special view to the contribution of Amerindian languages in this domain, and to the linguistic status of such systems, half way between lexicon and syntax in their more prototypical instantiations.

Classifier systems first attracted the attention of general linguists and psychologists from a typological perspective in the seventies (see for instance the now classical Allan 1977; Denny 1976) and received more recognition as an interesting

object of study on the part of linguists and psycholinguists alike since the eighties (see for instance Craig 1986a; Senft 2000; Aikhenvald 2000). More recently yet they have been considered as interesting material for the reopened debate on linguistic relativity, and the general issue of the relation of language to cognition (see for instance Lucy 1992; Imai & Gentner 1993 and a synopsis of their experimental approach in Foley 1997). This paper draws heavily on the more recent publications of the author on the subject (Grinevald 1999, 2000, 2001, 2002, 2003, 2004; Grinevald & Seifart 2004) for an account of a typological approach to the phenomenon. It focuses on the question of what classifier systems tell us in their explicit way about the spatial entities that belong to the environment of the speakers of classifier languages, and mentions more in passing other linguistic systems of categorization of spatial entities of a more lexical nature. It means therefore to underline some of the features of those spatial entities that are repeatedly made explicit across the various types of systems of nominal classification that have been identified in the languages of the world.

The first part of this paper presents a typology of classifier systems within a larger one of nominal classification systems; it articulates the multiple pieces of the puzzle one must handle if one wants to give a comprehensive linguistic account of such classification systems. The key aspects of such systems to be emphasized here are that:

- there exists a variety of nominal classification systems, classifier systems in general being only one of them, and that even within the phenomenon of classifiers various subtypes of systems can be identified;
- from a descriptive point of view, these systems need to be considered from a number of angles, such as their morpho-syntactic characteristics, their semantics (including their semantic domains, their semantic inventories, the degree of their semantic motivation), and their actual usage (their pragmatic relevance and the nature of their discourse functions);
- as intermediate lexico-grammatical systems, they are subject to many dynamics that need to be systematically considered to assess their status in a particular language (such as the age of the system, its degree of vitality and its degree of grammaticalization).

The second part of this paper has been conceived as a “show-and-tell” display of a sample of classifier systems in order to illustrate the types of information such systems can give on spatial entities. Other linguistic systems akin to, but different from, classifier systems will also be mentioned and exemplified in order to point to an interesting cross-over of the semantic and pragmatic information on spatial entities they often provide: they are systems of more verbal origin and more lexical nature, such as so called posture or stance verbs, positionals and classificatory verbs.

Following the typological descriptive framework of the first part and the sampling of actual systems of the second part, the third part of this paper will offer a summary review of what kind of information, in particular spatial information, some of those linguistic systems convey about spatial entities, and through what linguistic means.

The idea behind exposing the complexity of the descriptive task is to issue a warning to those who might become fascinated with the phenomenon, because of its obvious potential bearing on studies about the relation of language to cognition, and who might therefore become interested in conceiving experimental research projects involving such systems. The warning is that setting up appropriate hypotheses about how classifiers systems or other nominal classification systems may help uncover the relation of language to cognition would seem to require first a good grasp of the typological dimensions of the linguistic phenomenon at hand, and that a comprehensive and solid description of the particular nominal classification system under scrutiny that considers all the variables mentioned above would be necessary if comparisons are intended.

1. Classifiers in a typological overview of nominal classification systems

The typological framework summarized here was initially conceived in the eighties (see Craig 1986b, 1987 *inter alia*) but has been expanded and refined in recent years (Grinevald 1999, 2000, 2001, 2002, 2004). It is still in the process of elaboration, as new data continue to be gathered, in particular from areas of the world like the Amazon region, rich of such systems and still largely under-documented (Grinevald 2003; Grinevald & Seifart 2004).¹

1.1 Classifiers among other nominal classification systems

Classifier systems are intermediate systems of nominal classification in their being clearly of lexical origin while functioning in a more or less syntacticized or grammaticalized fashion:

(1) <Lexicogenesis..... morpho-syntax>	
class-terms	“CLASSIFIERS”
measure terms	noun classes
	gender

1. In the course of working out this typology, originally in order to argue that the classifiers of Jacaltec were of a particular nature, not numeral classifiers but noun classifiers, two name changes occurred in parallel fashion, from Craig to Grinevald and from Jacaltec to Jakaltek and then (Jakaltek) Popti’.

Classifier systems can be distinguished from systems that belong to the lexical end of the spectrum, such as the two types of "class terms" and "measure terms". The former is represented by systems of the *-berry* kind (as in *strawberry*, *blackberry*, *blueberry*, etc.) that create new lexical items, the latter of the *drop/splash/glass/bottle/bucket of water* or *glass of water/milk/wine* kind that productively create complex measure constructions out of lexical items. At the other end of the continuum, the classifier systems are also to be distinguished from the familiar gender systems of most European languages, and the "noun class systems" best described at first for Niger Congo languages and more recently for Australian aborigines languages (Sands 1995).

In their more prototypical form, classifier systems can be thought of as intermediate systems of nominal classification in that, on one hand, they consist of distinct sets of morphemes of lexical origin that are still fairly motivated semantically (to the extent that they evoke some characteristic of the spatial entity to which they are linked), while, on the other hand, they also function as morpho-syntactic systems, although they are still sensitive to discourse conditions and therefore are often not entirely grammaticalized.

1.2 A typology of classifier systems

The typology of classifier systems presented here identifies different morpho-syntactic subtypes on the basis of the locus of the classifier. It was devised as a descriptive strategy proposed for fieldworkers facing such systems because of the fact that the morphology of a language is the part of language that is of easiest access to field linguists. This strategic choice does not pretend to have theoretical weight and is mostly worth its capacity to entice fieldworkers not versed in this domain to produce the kind of description that will only exist if they provide them.

Within such an approach that focuses on the basic morphological locus of the classifier, four main subtypes of classifiers have been identified:

- (2) [POSS+CL Numeral+CL CL NOUN] // Verb-CL
 3 2 1 4

The four major subtypes considered have been: (1) the *noun classifiers*, (2) the *numeral classifiers*, (3) the *genitive* (or *possessive*) *classifiers* and (4) the *verbal classifiers*.² Below are illustrative examples of these different subtypes, the first three types being classifiers found within the noun phrase and the types the most stud-

2. The expression "major" types was meant to signify that other types existed, but were considered at the time as minor to the extent that little information was available about them then and that they seemed more limited in areal spread. Such was the case for some types found in some Amerindian languages labeled demonstrative and locative classifiers. See the contribution of Aikhenvald (2000) to have them included in the inventory of classifier systems.

ied, while the verbal classifier type is the most diversified because of its possible various origins, its parallels with both numeral and noun classifiers, and its propensity to be found at different stages of lexicalization.

- (3) *Noun classifiers*; Jakaltek-Popti' (Craig 1986b:264)
Xil naj xuwan no7 lab'a.
 saw CL John CL snake
 '(man) John saw the (animal) snake.'
- (4) *Numeral classifiers*; Ponapean (Rehg 1981:130)
 a. *pwihk riemen*
 pig 2+CL
 'two(-animate) pigs'
 b. *tuhke rioapwoat*
 tree 2+CL
 'two(-long) trees'
- (5) *Genitive classifiers*; Ponapean (Rehg 1981:184)
 a. *kene-i mwenge*
 CL-GEN.1 food
 'my(-edible) food'
 b. *were-i pwoht*
 CL-GEN.1 boat
 'my(-transport) boat'
- (6) *Verbal Classifiers*; Cayuga (Mithun 1986:386-88)
 a. *Ohon'atatke: ak-hon'at-a:k.*
 it-potato-rotten past.I-CL-eat
 'I (potato-)ate a rotten potato.'
 b. *So:wa:s akh-nahskw-ae'.*
 dog I-CL-have
 'I have(-pet) a dog.'
 c. *Skitu ake'-treh-tae'.*
 skidoo I-CL-have
 'I have(-vehicle) a car.'

To support the claim of there being different kinds of classifiers, the principal argument presented has been the co-existence of subtypes in a particular language. Ponapean, for instance, is such a language with two subtypes, numeral and genitive, as illustrated by examples ((4) and (5)) above. The other proposed argument has been a claimed correlation between the major morpho-syntactic types of classifiers known and their prototypical "semantic profiles". By semantic profile was meant a pattern of dominance of a certain semantic field (such as physical – including spatial –, functional and material characteristics) for each type of classifier. This correlation is outlined in (7) below:

- (7) a. numeral classifiers (physical)³
two-ROUND oranges
three-LONG RIGID pencils
four-FLAT FLEXIBLE blankets
- b. genitive classifiers (functional)
my-EDIBLE food
his-DRINKABLE potion
their-TRANSPORT canoe
- c. noun classifiers (material/essence)
an ANIMAL deer
the ROCK cave
MAN musician

As argued in Grinevald (1999, 2000, 2004) the correlations work best in languages with co-occurring classifier systems, as with a contrast of the Ponapean numeral and possessive systems illustrated above in (4) and (5). The correlation is less strong in the case of large numeral classifiers, particularly when they are the only classifier system of a language, in that all three semantic fields may well be represented, in varying proportion, although it always remains that these systems are the only ones to systematically contain classifiers of physical characteristics, in particular spatial ones.

1.3 Numeral classifiers and physical properties of spatial entities

One particular type of classifiers, namely the numeral classifiers, can appeal therefore to some physical characteristics of the classified spatial entities, including spatial ones such as dimensions. As claimed early in the literature on the topic (by Adams & Conklin 1973; Allan 1977 for instance) the three basic shapes that correspond to the major dimensional outlines of objects (1D, 2D, 3D) are the most widespread. They are generally found primarily combined with a specific secondary characteristic of consistency and/or size. The particular combinations can be seen as a reflection of the fact that the most common lexical sources for this basic set of classifiers are nouns from the vegetal world. The shapes identified correspond interestingly to those of the primary elements handled by human communities for their survival, as given below:

3. We are dealing here specifically with the so-called "sortal" numeral classifiers, attending to the spatial entities in their individuality (objects that are individually of a particular shape for instance), leaving aside the so-called "mensural" and "arrangement" classifiers that specify characteristics of a set of spatial entities (such as *a box/bag of apples* or *a pile/line/circle of chairs*) and correspond to constructions found in all languages of the world.

- (8) Three basic shape classifiers and their lexical origin
- | | |
|-------------------------|-------------------|
| 1D 'long-rigid' | from 'tree/trunk' |
| 2D 'flat-flexible' | 'leaf' |
| 3D 'round' ⁴ | 'fruit' |

In this basic set of three classifiers, the common association of a certain dimension with a certain texture or plasticity is relatively transparent in that the classifier for long+rigid objects (1D) often comes lexically from the noun for sticks of wood or trunks of trees, the one for flat+flexible objects (2D) from the noun for the leaves of a tree, and the one for spherical objects (3D) from the noun for fruits. When the system of classifier expands beyond this basic set, other combinations of dimensions and size, flexibility or compactness appear. One then finds classifiers for 1D long+flexible objects (such as rope, snake, vine) or for 1D long+hollow objects (such as canes, flutes, blowing guns); classifiers for 2D flat+rigid objects (such as planks, trays, doors) and/or for 2D flat+rigid+circular objects (such as plates, records, disks, pot covers); finally, different classifiers for 3D can exist, for round+hollow objects (such as pots, recipients) and round+small objects (such as grains of rice or corn, small stones, necklace beads).

1.4 Degrees of specificity of the classifiers

Another variable in the semantics of the classifiers is their degree of specificity. Classifiers can vary as to the nature of the classes they define, from large heterogeneous ones to simple ones made up of only one item. Four kinds of classifiers have been identified in the literature according to the scope of the class they define and their lexical origin:

- (9) classifier types by their scope
- specific classifiers
 - general classifiers
 - unique classifiers
 - repeaters

The essential characteristics of these different types of classifiers are as follow:

a. *Specific classifiers*. They are the most common type (such as classifiers for "1D-rigid", "animals", "vehicles", etc.). The classes they head are built around prototypical exemplars, with incorporation of other elements by any number of types of extensions of the class.

4. The expression 'spherical' would be more appropriate than 'round' here but 'round' is the one that appears in the previous publications from which this section is extracted and that did not address directly the issue of the characteristics of spatial entities and spatial features.

b. *General classifiers*, as their label indicates, head large heterogeneous classes with no distinct semantic motivation, except sometimes one of animacy. They are generally de-semanticized specific classifiers. Large Asian numeral classifier systems are known to have such general classifiers.

c. *Unique classifiers* head classes of just one element, such as a class for a specific animal (be it the elephant or the tiger, or even the dog), co-existing with a specific class for all other animals. Unique classifiers have sometimes been interpreted, *a posteriori*, as highlighting some cultural items of particular significance in a particular culture. Craig (1986b) considers the cultural relevance of such unique classifiers in the noun classifier system of Jakaltek-Popti'.

d. *Repeaters* are actually of a different nature from the preceding types of classifiers. Their formal characteristic is to be homophonous with a noun which has obviously been their lexical source; they may still be full repeaters or truncated forms of the source noun:

(10) sample repeater (noun)classifiers of Jakaltek-Popti'			
	classifier	source	noun
	<i>naj</i>	<i>winaj</i>	'man'
	<i>ix</i>	<i>ix</i>	'woman'
	<i>no'</i>	<i>noq'</i>	'animal'
	<i>q'ap</i>	<i>q'ape</i>	'cloth'

On the other hand, repeaters can themselves be either unique or specific classifiers, a particular dimension of the variety of classifiers within a system to which few writings have paid close attention until now.

1.5 The dynamic dimensions of classifier systems

The importance of considering the dynamic variables when describing classifier systems cannot be underestimated, if systems are to be compared. Such a dynamic perspective is particularly important if one is interested in researching the correlations between language and cognition through the study of classifier systems, to the extent that one would expect different correlations according to the different stages of development and stabilization, and the different degrees of grammaticalization that characterize specific systems.

1.5.1 Four dynamic dimensions

Four distinct dynamics at least need to be taken into account for a proper assessment of the nature of a language specific classifier system:

a. Its *degree of grammaticalization*: one can find, for each subtype of system, examples of systems at every stage of grammaticalization: from incipient systems, to

well established ones functioning like prototypical systems (at mid-point between lexical and totally grammaticalized systems), all the way to systems at an advanced stage of grammaticalization that are more akin, at that point, to the gender systems familiar to speakers of European languages. The best known systems of the numeral classifier type are probably the ones of South Asian languages, that have generally large inventories and are clearly discourse sensitive systems (see 2.1.1 below) and have been taken as prototype of this subtype of classifiers. But one can also find instances of very grammaticalized numeral classifier systems, such as the ones of most of the Chibchan languages of Costa Rica (see 2.1.3 below).

b. Its *age*: some systems are very old, like the thousands of years of the Chinese system of numeral classifiers for instance, while others can be argued to be only several century old, like the Q'anjob'alan-Mayan systems of noun classifiers.

c. Its *productivity*, independently of its age. For instance the Thai numeral classifier system, which is very old, is also very productive: it is open and adapting to the language of modern life, while the noun classifier system of Jakaltek-Popti', which can be argued to not be very old, seemed frozen and unable to cope with the classification of modern imports and products until fairly recently.

d. Its *areal status*. The areal spread of classifier systems needs to be assessed in the context of the common phenomenon of borrowing of systems by contact, the borrowing being either through borrowing of actual classifiers (as happened in Japanese with classifiers of Chinese origin), or through the borrowing of the idea of such a system, as seems to have happened in the Q'anjob'alan linguistic area of Guatemala.

1.5.2 Learning about dynamics from the Jakaltek-Popti' system

It is the encounter with a particular classifier system in a Mayan language and the need to demonstrate its specificity that helped isolate these different dynamic variables. First the system encountered in Jakaltek-Popti' was a noun classifier system and not a numeral classifier system, difference which had to be argued (Craig 1986b, 1987, 1992). This need to establish a distinct type of classifier system was in fact the initial motivation for establishing a typology of classifier systems. The dynamic variables of systems of classification listed above (grammaticalization, age, rigidity and areal spread) were furthermore needed to specify the exact nature of that system.

The Jakaltek-Popti' system was shown to be very grammaticalized, with classifiers functioning as determiner-like markers of referentiality and anaphoric pronouns, making them omnipresent in the language (Craig 1992). This unusual degree of grammaticalization turned out to be a relatively rare phenomenon, when put in contrast with the array of noun classifier systems of Australian lan-

guages, which go for their part from incipient to well established systems (Sands 1995; Wilkins 2000) but never reach the degree of grammaticalization exhibited in Jakaltek-Popti' (Grinevald 2002).

In addition, the system could be demonstrated to be a fairly recent one, actually an innovation of that branch of the family calculated to be between 700 to 900 years of age (Craig 1990). But in spite of its being a relatively recent system, characterized by a highly motivated classification of spatial entities by their material or essence, this striking semantic motivation was combined, at the time of the initial fieldwork in the early seventies, with an extreme rigidity and a limited productivity, as it was clearly not absorbing new commercial products made of unknown material (Craig 1986b). New fieldwork carried out three decades later has revealed a thaw in the rigidity of the system.⁵ The last dynamic variable identified corresponds to the clear evidence of areal spread of the system. While no two of the Q'anjob'alan languages have exactly the same set of classifiers, it is worth noting that some neighboring Mamean languages have borrowed the idea of the system; they have developed incipient systems using their own lexical sources. Interestingly, this has only happened in the dialects of those languages (Mam and Ixil) that are in direct contact with Q'anjob'alan languages (England 1992).

1.6 Classifiers and other classification systems of spatial entities

Although the attention has been focused here on classifier systems, they are not the only linguistic systems of categorization of spatial entities in existence, although they may be the most explicit ones. The other systems that would definitely deserve attention, in that they too evoke spatial characteristics of spatial entities, are both of a more verbal and a more lexical nature: they are known as systems of "posture verbs" and "positionals".

1.6.1 Posture verbs

Posture verbs are actually found in European languages (such as German, Dutch, Swedish and Polish), and are a characteristic of Oceanic languages. See for instance the collective volume of Newman (2002) on "The Linguistics of Sitting, Standing

5. The system is presently in evolution under pressure of shift to Spanish and incipient obsolescence of the language, and of the creation of literacy norms by the new language academy. After a period of several decades of not absorbing into one of the established classes the new items made of plastic that have invaded the market (such as footwear and kitchenware), it seems to allow today their inclusion. There are two competing strategies for plastic objects: to assimilate them either in the plant or the animal class; as plant objects by those who claim knowledge of the plant origin of rubber, or as animal objects by those who consider instead their appearance and liken the feel of them to that of snake skin.

and Lying", including the chapter by Lemmens on the semantics of Dutch posture verbs. Posture verbs are also commonly found, sometimes in rich inventories, in Amerindian languages.

Of interest here is a striking overlap between the spatial semantics of such posture verbs and the semantics of the basic set of numeral classifiers (as displayed in (8) above). Such parallelism between posture verbs and numeral classifiers points to the fact that different systems of classification appear to select similar physical characteristics of spatial entities. Only shared static characteristics of the spatial entities are considered here, although posture verbs may also include dynamic dimensions, akin to directional systems and unknown to numeral classifiers (as in standing coming this way, or going that way, for instance).

The parallelism between shape and dimension specified by numeral classifiers and stance of posture verbs is sketched out below:

(11)	numeral classifiers	posture verbs
	1D long rigid	standing
	2D flat flexible	lying
	3D round	sitting, crouching

There is actually a very common fourth member to this basic set of correspondence. A common classifier of numeral classifier systems of Amazonian languages is one for hollowed objects, such as carved out and curved recipients. In parallel fashion systems of posture verbs of the same region of the world usually include a hanging posture verb, as in hanging in a hammock, with a similar curved position.

Kuna, a Chibchan language of Panama, has both types of systems, numeral classifiers and posture verbs, that point interestingly to similar spatial characteristics of entities, in spite of the two systems being from clearly different lexical sources. Compare below the use of the posture verbs 'standing' and 'sitting' (used here as satellites of main verbs rather than main verbs) and the numeral classifiers of 1D and 3D objects:

(12)	Kuna (Sherzer 1978:335)	
a.	<i>suka kwa-pakke</i>	a'. <i>Suka purkwe-si.</i>
	crab CL.3D-4	crab die-POST.sit
	'four (round) crabs'	'the crab is dying(sitting).'
b.	<i>sappi wala-pakke</i>	b'. <i>Sappi purkwe-kwici.</i>
	tree CL.1D-4	tree die-POST.stand
	'four(long) trees'	'the tree is dying(standing).'

To be noted is the overlap between the characterizations of a crab as a squatty roundish animal (3D) through the numeral classifier, which at the moment of dying is said to be naturally in a sitting (3D) posture. As for the characterizations of a tree in the two systems, it is first as a long and rigid object through the numeral

classifier and as a standing object through the verb of posture, a posture actually typical of long and rigid objects considered alive (as trees are considered to be in the cultures of this part of the world).

1.6.2 Positionals

Positional systems are much larger systems of categorization of spatial entities and of a more decidedly lexical nature. Some of the better known positional systems are from Mayan languages, particularly the Tzeltal one described by Brown (1994). One can talk of classification systems in the sense that their use is systematic in certain constructions, particularly in the expression of static location. In their rich semantics they provide detailed information on the spatial entities being located, the dimensionality of the objects being only one of the parameters taken into account. Their semantics in fact conflates notions of dimensionality with size, texture, orientation, or type of action that resulted in a particular position. Otherwise the language has only one neutral preposition with no spatial semantics, with all the spatial information distributed between the lexical semantics of those positional verbs and optional relational nouns that can specify the point of location on a ground. Below is a small sample of positionals showing some of the semantic details of objects of various forms being located 'on' a table:

- (13) Tzeltal (Brown (1994))
- | conflated semantics of positional | object located |
|------------------------------------------|-------------------|
| – tall oblong-shaped container or solid | |
| object canonically 'standing' | bottle (1D) |
| – wide flat object lying flat | frying pan (2D) |
| – blob with distinguishably flat surface | |
| lying face down | dough (3D) |
| – wide-mouthed container canonically | |
| 'sitting' | bowl (3D concave) |

These positional predicates are derived from hundreds of positional roots that constitute a distinct morphological category in the Mayan family of languages. These positional roots are omnipresent and very productive in the language; with appropriate derivational affixation, they yield not only locative predicates, but also intransitive verbs of movement and transitive verbs of caused movement. An example of such productive derivation from the sister language Tzotzil is given in Haviland (1992). Under the root *chot* he has included the following entries: *chotol* for a stative positional predicate (of location) 'seated, sitting'; *choti* for an intransitive verb 'to sit down, to be settled'; *chotan* for a transitive verb 'to set down (a child, a bag etc. . .)'. Interestingly, numeral classifiers can be derived from positional roots too, so that the semantic cross-over between the two systems, positionals and

numeral classifiers, is much more direct in the Tzeltalan languages than in the two Kuna systems just mentioned.

1.7 A multidimensional approach and fieldwork methodology

As a way of concluding this section on the extremely complex multidimensional phenomenon of nominal classification systems of the languages of the world, it will be said again how the majority of those systems are not found in the familiar Indo-European languages but rather, in many cases, in extremely minorized and now endangered oral tradition languages. The information on such systems is therefore often partial, or actually yet to be gathered and made available.

The approach promoted here is one that could be called a "total elephant approach", in that it proposes describing the systems from as many angles as possible, in order to account as precisely as possible for the nature of the specific system under study, and to place it both in the overall structure of the language and within a typology of such systems. It argues therefore against grabbing a system either by the tail, or the trunk, or one of its legs (that is to say by its semantics or its morpho-syntax or its discourse use alone). It will only be through embracing their multi-dimensionality that we could hope to comprehend the dimensions of this phenomenon that takes so many varied forms in the languages of the world, and ultimately to be able to articulate cogently how their existence could contribute to our understanding of the relation between language and cognition.

2. A sampler of classifier systems

This part is meant to speak for itself by providing data from a number of classifier systems in order to illustrate some of the major ways in which non Indo-European languages may explicitly categorize spatial entities, and to show both some of the invariants that can be detected in those systems and some of their specificities.

2.1 Numeral classifier systems

This section provides selected data from systems large and small, grammaticalized and less grammaticalized, with a focus on their overlapping semantic motivations and some of their semantic specificities. One is a large system often cited in the literature on classifier (Burmese, from Burling 1965; Becker 1975) that corresponds to the prototype image one has of such systems (large with discourse use). The others are from America, one very similar to Burmese in its overall large size and discourse use (Tzotzil Maya) and the others rare cases of very grammaticalized ones (Chibchan languages of Central America).

2.1.1 Burmese (Asia): Inventory and discourse use

The inventory given in Burling (1965) will be reproduced as is here, to show the state of much of the first-hand information found in the literature on classifier systems. This fairly extensive list of the numeral classifiers was produced before the major typological studies of classifiers appeared, and is organized in semantic categories. Of interest here is the "group 2" that the author says is for "*Objects with Dimension In Time or Space*", noting how "several of the most commonly used classifiers roughly indicate the shape of the object or show that some event occurs in time".

- (14) Burmese (Burling 1965): "group 2" physical classifiers
- long, slender objects: pencils, spoons, rulers, sticks; needles, knives, cotton yam (not wool), keys, rope, small pieces of bamboo, umbrellas, pieces of sugar cane, bamboo tie strips, pieces of firewood, horns, tails, braids of hair, etc.
 - long slender living, or recently living things, which are vertical or perpendicular to the object to which they are attached: trees, plants or stalks of plants, blades of grass, hair, strands of woollen yarn
 - vertical slender objects which are not living: posts, candlesticks
 - hoops, loops, rings, bracelets, sarongs, rubber bands
 - thin, flat objects: carpets, mats, mirrors, plates, trays, loops of pineapple as found in tins, slices of bread, bricks (which were thinner and flatter in traditional Burma than in some countries)
 - very thin and flat objects: leaves, paper
 - spherical or cubical objects: boxes, pots, chairs, houses, fruit, cups, loaves, eyes, mountains, bags, pills, seeds, grains, etc.
 - objects which come in symmetrical pairs: body parts such as eyes, hands, ears, nostrils; shoes, sides of paper (i.e., "pages" in which the two sides of the same sheet are counted separately)
 - holes: windows, doorways (not the door itself), entrances to caves, holes in paper or cloth
 - events or actions which take place in time: the number of times that something is done
 - 'once',
 - 'twice', etc.
 - trips or motions, occurring in time, as "he came here three times"
 - for storms of rain and wind

The strictly spatial classifiers are the first ones in this list, where one can identify the recurrent dimensions: there are three 1D classifiers for inanimate and for living things, some specified as vertical; two 2D with thinness difference, and one 3D spherical plus one classifier for ring like objects (round and flat), maybe to be contrasted with the classifier for another variant of circular, the one for "holes".

The other classifiers have another type of semantics and include pairs and times, and one very specific for storms.

As was mentioned earlier it is not the case that all numeral classifiers convey semantics of physical characteristics of spatial entities, rather that it is in such systems of classifiers that one finds classifiers of shape. For instance, the set of classifiers referred to as "group 3", that Burling labels "*Objects with Use*" would correspond to those classifiers Denny (1976) called "functional classifiers".

- (15) Burmese: "group 3" functional classifiers:
- things worn on the body: trousers, sarongs, handkerchiefs, shirts; not used for shoes or for hats
 - tools or machinery which are used for transportation or for cutting ships, boats, automobiles, knives, saws, arrows
 - things ridden: elephants, horses, carts, automobiles, airplanes
 - things which can be read: letters, tickets
 - hand tools: knives, guns, umbrellas, hammers, spectacles, brooms
 - for looped objects which can be worn: garlands, necklaces
 - livable places: houses, apartments; used especially for the apartments of the various queens in the traditional Burmese royal palace
 - (rare) geographical connections; roads, rivers

One can easily identify in this set of classifiers some widespread functional categories, such as clothing and decoration, transport (machines and pathways), tools, and lodging. Such categories are fairly typical of genitive classifiers as will be shown below in Section 2.3 with examples from Oceania and America.

Later Burling identifies a "*Residual Category-Objects*" labeled "Group 4" headed by the classifier *khù*. She claims that this classifier "has a unique role in the Burmese language. It can be most simply understood as belonging where no other more specific classifier is appropriate".

- (16) Burmese: "group 4"
- classifier used whenever nothing else is appropriate; implies nothing of shape, or use, but it does show at least that the item counted is not animate or sacred and that it is an individual object: spectacles, chairs, houses, stories, moons, tails, etc.

This kind of semantically neutral classifier would correspond to the general classifier mentioned earlier; it seems to either be used instead of a more specific one or as a kind of default classifier in a system that calls for the systematic use of classifiers.

The other characteristic for which the Burmese system is well-known is its discourse use. This has been illustrated in the literature by the now classic example from Becker (1975) of the different classifiers that can be used when talking of a river, according to the context in which it is evoked:

- (17) Burmese (Becker 1975)
- river one line (e.g., on a map)
 - river one arc (e.g., a path to the sea)
 - river one connection (e.g., tying two villages)
 - river one thing (e.g., in a discussion of rivers in general)

Such choice of classifier means that the classifier system is sensitive to discourse pragmatics and is chosen on the basis of some selected characteristic of the referent. This is not, however, a trait of numeral classifiers per se, but rather a reflection of the stage of grammaticalization of this particular one, as the contrast with the very grammaticalized ones of some Chibchan languages will demonstrate. But before, another system from America that functions more like the Burmese one will be mentioned.

2.1.2 *Tzotzil (America 1): On sortal shape classifiers*

Tzotzil is a Mayan language from Mexico, of the Tzeltalan branch. It has, like its neighboring and sister language Tzeltal already mentioned, a large set of numeral classifiers, among which de León (1987) has identified classifiers for units, collections, partinomes and measure. Only the reduced set of sortal (unit) classifiers will be presented here, to illustrate the presence of the basic dimensional semantics, setting aside the fact that the general notion of shape is also found of course in many mensural classifiers, but showing it is beyond the scope of this paper:⁶

- (18) Tzotzil (de León 1987:79)
- animal standing four-legged, tree standing vertical, long 1D, flat and flexible 2D, rectangular and flat 2D, round, spherical 3D

This set of sortal classifiers contains three classifiers that appeal to position as well as shape for humans, animals and trees, and four basically for shapes of inanimates, where the three basic dimensions (1D, 2D, 3D) can be recognized.

2.1.3 *Chibchan languages of Central America (America 2):*

Very grammaticalized systems

There exist very grammaticalized numeral classifiers exhibiting grammatical paradigms of numbers with morphological fusion, neutralizations, and irregularities reminiscent in their morphology of some of the Indo-European morpho-

6. One always needs to keep track of the difference between sortal classifiers, generally a handful in large numeral classifier systems, and possibly large inventories of mensural classifiers. In Tzeltalan languages, the difference is very marked, as the language has hundreds of numeral classifiers of the mensural type. See Berlin (1968) for a first photographic collection illustrating the detailed semantics of such classifiers in Tzeltal, the same language in which objects are located through the use of positionals, as evoked in (13) above.

syntactic paradigms of declension and conjugation. This is the case for instance with a number of numeral classifier systems of the Chibchan languages of lower Central America (Costa Rica and Panama in particular). The inventories of their closed sets of fused numeral classifiers largely overlap: they share for instance a basic set for shapes (flat, round, long), mixed with material or essence type (humans, plants), and with a few instances of functional classes (clothing and money) and mensural types (clusters, groups, tied, heaps). The data are presented, again, as they can be found in the original sources, including in the order in which the classifiers are listed by the authors and with no attempt made to reinterpret them:

- (19) Cabecar (Margery 1989:xxvi–ii)
human, round, long, flat, group, tied
- (20) Bribri (Margery 1989:xxiv–xxv)
human, flat, round, long, pounds/trees, packages, clusters, groups, kinds
- (21) Movere-Ngwabere (Young 1996)
human, living, plant, long 1D, flat flexible 2D, flat rigid 2D, round 3D, number of times an action or event occurs, clothing, coins, days, heaps, bunches of bananas/ branches of trees, things wrapped in leaves, fathoms, measurements by hand-spans
- (22) Bocota (Solis 1989:142–152)
human, flat, round, long, square, plants, money, clothing/ kindling, bunches of bananas/plantain/pejibay, clusters
- (23) Kuna (Sherzer 1978)
long oblong and bulky, long 1D thin or flat, flat, round, fruit trees, clothing, plots of land or farm, generic word for fish

Examples of the heterogeneity of numeral classifiers inventories are, for instance, the Movere-Ngwabere time classifiers (number of times of actions and events, and days) and measure ones (fathoms and hand-spans), and the Kuna classifiers for plots of land, fish and the only instance of an animal class in that group of closely related languages. This, of course, raises the question of how animals are classified in the other systems and whether the label “human” should not be reconsidered and replaced by “animate” (as a reminder of the difficulty one often encounters trying to interpret the available and partial descriptions of such systems).

2.2 Noun classifiers

Noun classifiers are interesting semantically in that they do not refer to the shape of spatial entities at all, but rather to their essence, corresponding to the semantics of their generic source nouns. The illustration comes from a system of Central America (Jakalteke-Popti’ (America 3)), the other part of the world where other systems have been identified being Australia.

Jakaltek-Popti' is one of the Q'anjob'alan Mayan languages, and has become known in particular for its having this type of classifiers. Craig (1986b) presents the set of 24 noun classifiers, 12 of which are used for human and superhuman entities, and 12 for animals and inanimates; with a discussion of the items excluded from the classification, and of the apparent cultural significance of the classification system.

For animals and inanimates the classifiers evoke the material or essence of the objects, in a system that is striking for its high semantic motivation, partly due to the high incidence of classifiers that are repeaters:

- (24) Jakaltek-Popti'
- animal: repeater and specific, for all animals except dogs, and products made of animal material (milk, eggs, leather items)
 - dog: specific and unique classifier of unknown origin
 - plant: repeater and specific for all plants except corn (and wheat), and all products from plant material (except rope, thread, and cloth)
 - corn: repeater and specific for corn and wheat products
 - thread: repeater and specific for thread and woven material made of thread (hair band, sash)
 - rope: repeater and specific, for fiber rope and objects made of rope (rope, twine, small and large netbags)
 - cloth: repeater and specific for woven items of clothing
 - rock: specific for stone, rock, glass and metal objects (cooking stones, grinding stone, bottle, glasses, knives, trucks, airplanes...)
 - ground, dirt: repeater and specific for ground, dirt and pottery (clay pottery: jugs, plates...)
 - salt: repeater and unique, just for salt
 - fire: repeater and unique, just for fire
 - water: repeater and specific for water (water, river, rain, lake)

This kind of system and inventory is specific to the Q'anjob'alan branch of the family. The neighboring sister language, Akateko, has by and large the same inventory, except that it does not isolate the dog in a special class, while it has an additional class of plants, distinct from one for trees (rather than a general plant one); in addition, it recognizes the specificity of the thread, but lacks classifiers for cloth and rope products (Zavala 2000: 134).

2.3 Genitive classifiers

The interesting consistency of the semantic categories found in genitive classifier systems has been well demonstrated on the basis of Oceanic and Amerindian data

(Carlson & Payne 1989). It is the type of classifiers where the dominant semantics is that of functionality.

2.3.1 Oceanic languages: An areal phenomenon

In the sample of 14 languages from Oceania that Carlson and Payne considered, the functional semantics of the classifiers distributed themselves as follows, in decreasing order of frequency:

- (25) Oceanic languages (Carlson & Payne 1989: 93)
- edible 14, general 13, drinkable 12, animal 8, vehicle 6, building 5, game catch 4, earring 4, garland 4, island 4, plant 3, sheet 2, pillows 2, undergoer 2

One can recognize the presence of a general classifier in all but one system, and several widespread functional categories of edibles, drinkables, animals, transport/vehicles and building, with a largely shared priority for basic human sustenance.

2.3.2 Panare (America 4)

The inventory of the genitive classifiers of the Panare language, clearly half way around the world in the Amazonian region of Venezuela, is strikingly similar, with obvious adjustments for cultural and geographic specificities:

- (26) Panare (Carlson & Payne 1989: 105)
- general, edible, drinkable liquid, animal, vehicle, hunting arm, musical instrument, body paint, clothing, container, artificial light.

This list is followed by a mention of 3 repeater+unique classifiers for 'village, hatchet, blowgun and fire', and 3 unique classifiers for 'hammock, house and swidden garden'.

To date, the better known genitive classifier systems are those of the Oceanic languages, while it would appear that the phenomenon is also found in a widespread area of Amazonia, although much remains to be done to fully document these systems.

2.4 Verbal classifiers

Verbal classifiers are those classifiers found inside the verb form as agreement markers on the absolutive argument of the verb (subject of verbs of location or movement, object of transitive verbs of caused movement or manipulation). The sample below was chosen for its relatively transparent semantics, primarily to illustrate one of the main points of the present discussion, the physical characteristics of spatial entities that can be explicitly encoded in some languages of the world through systems of classifiers. Such systems have been repertoried for North Amer-

ica, for instance, although many of the descriptions remain fragmentary and leave many questions begging within the present typological framework.

2.4.1 Haida (America 5): Shape semantics like numeral classifiers

The verbal classifiers of Haida, a language spoken in Alaska and British Columbia, come in the form of verbal prefixes that conflate features of shape, size and animacy. The inventory presented below is reproduced in its original state, in order to show once again the nature of the primary data on classifiers one encounters in the literature, and to underline how much of the semantic analysis relies on *a posteriori* interpretations by unavoidably western ethnocentric linguists minds:

- (27) Haida (Levine 1977: 139–50 in Mithun 2000: 114)⁷
- ‘branching or forking from the end of a central axis’: chair, fork, bed, stove, binocular, scissors, adze, halibut hook
 - ‘flat’: leaf, box lid, mirror, knife, shovel, lake, apron
 - ‘roundish, flat on one side’: mask, flounder, hat, abalone, button
 - ‘spheroid or cylindrical’: drum, hammer, clam, stone, copper
 - ‘mass or aggregate’: bunch of clothing
 - ‘branching from central axis’: tree branches, combs
 - (meaning unclear): shirt, kerchief, axe
 - ‘rigid circular’: ring, bracelet, nose ring, black cod hook
 - ‘long, flexible’: rope, net, belt
 - ‘long, cylindrical’: lamp, bottle, spruce cone, pipe
 - (meaning unclear): chisel, bag, nail, red cod, object wrapped as parcel
 - ‘long, narrow, rigid’: stick, paddle, harpoon, poker, cane, arrow, needle
 - ‘relatively long, teardrop-shaped’: feather, spoon

One can obviously recognize in this inventory the familiar dimensional classifiers and some of their variants (as is the case for the three classifiers of 1D objects: long flexible, long cylindrical, long narrow and rigid). To be noted also are the classifiers for which no semantic motivation was found, seemingly regrouping objects of very heterogeneous shapes.

2.4.2 Ika (America 6): Towards lexicalization

The classificatory verb system of Ika, a Chibchan language of Colombia, is presented here for its advanced state of lexicalization. This is evidenced by the fact that, although the presence of classifying elements in the verb is still identifiable, their morphemic independence seems blurred and they appear in an advanced

7. Due to space limitation only half of the inventory is given here, but it is representative enough of the semantic range of the system.

stage of fusion. This case illustrates the continuum between clearly segmentable classifying morphemes and lexicalized classificatory verb stems.

- (28) Ika (Frank 1990: 55 in Aikhenvald 2000: 156)

	Long	Flat	Three-dimensional	Liquid	Holders	Upright
Exist/loc	gaka	pa	sa	—	—	tšo
Be in	aʔ-geikua	aʔ-pankua	aʔ-nikua	aʔkua	aʔžu	aʔnuk
Be up on	i-geikua	i-pankua	i-nikua	—	ižu	i-nuk
Be on	geikua	pankua	nikua	—	—	nuk
Put up on	igeika	i-pan	isa	idos	—	itšo
Put down	gaka [gakó]	pan [pa]	sa	dos	—	tšoʔs
Put in	hagaka	kapas	kassa	kados	kažus	katšoʔs

From a purely structural point of view, this example of classifying elements fused to the verb is reminiscent of the advanced process of fusion of numeral classifiers in some Chibchan languages of Central America (see Section 2.1.3 above). Semantically, one recognizes a majority of shape categories, including the basic 1D, 2D and 3D.

2.4.3 Kwakwala (America 7): Cross semantics between numeral classifier and other classification system

It has already been noted that the same semantics can operate within the same language between a system of numeral classifiers and another system of a more verbal nature (as in the Kuna language, ex. (12) in 1.6.1).

Kwakwala, a Northern Wakashan language of British Columbia, as its Southern relative Nootka, has both numeral classifiers and classificatory verb stems. There are about 20 classifiers for quantifying expressions, though their productivity varies. The ones most commonly used are listed below:

- (29) Kwakwala suffixes to numerals (Berman 1990: 40, 38 in Mithun 2000: 109)
- human, bulky, long, hollow, flat, hole

This set of common classifiers includes the expected shape classifiers, with under-specified classifiers for 1D (long), 2D (flat), 3D (bulky) objects, and the additional variations of 3D (hollow and hole) often found in Amerindian languages. It is interesting to compare the semantics of this numeral system (29) with the semantics of a series of verbal stems akin to posture verbs (30). The system of stems of location typically used for static location as well as handling (caused motion) constructions is much richer semantically than the system of numeral suffixes, although what is to be noted is how the systems share spatial semantics for entities, whether these are counted, located or handled:

(30) Kwakwala stems of location, (Berman 1990: 52–6 in Mithun 2000: 110)

- vertical human is somewhere
- horizontal human is somewhere
- vertical humans or long objects are somewhere
- vertical long object is somewhere
- horizontal long object is somewhere
- vertical flat object is somewhere
- vertical flat objects are somewhere
- horizontal flat object is somewhere on its front
- horizontal flat object is somewhere on its back
- bulky object is somewhere
- hollow object is somewhere right-side up
- hollow objects are somewhere right-side up
- hollow object is somewhere upside down
- hole is somewhere

This verbal system is interestingly complex: it conflates information on animacy with the basic dimensions already shown to be part of many numeral classifier systems (1D, 2D, 3D, including a hollow shape typical of Amazonian systems of nominal classification), with the further specification, in this language, of orientation (vertical/horizontal, rightside up/upside down), and finally of number.

3. A descriptive typological framework on how information on spatial entities might be expressed in languages

By way of conclusion, this section will review the principle parameters of the different means languages have availed themselves to specify characteristics of spatial entities in discourse and grammar, through classifier systems and other types of nominal classification systems.

3.1 Strategies of encoding

When semantic information about spatial entities is specified in a language through nominal classification systems of the kinds presented above, it may follow any number of encoding strategies.

3.1.1 Information may be overt, covert or unspecified

Information about spatial entities is more or less explicit in languages. One can find any one of three situations:

- *overt* information is found in some morpho-syntactic systems, such as the systems of *classifiers* presented here, especially the numeral classifier and the

verbal classifier types with their explicit spatial information. Sets of *positionals* and *posture verbs* fall into this type of overt classification systems.⁸

- *covert* information about spatial entities can be found in the lexical semantics of English verbs such as *chew*, *lick*, *crunch*, *drink* that give information on the texture of the entities being digested, and are restricted to the lexical realm of language. Among nominal classification systems that have constituted themselves as part of the grammar of the language are sets of *classificatory verbs* used for static location and caused motion events such as handling or giving.
- *Unspecified* information would be as in the case of Romance languages, which lack systematic detailed information on features of the special entities in other elements of the clause beyond the lexical semantics of the denomination of that spatial entity itself.

3.1.2 Information may be distributed through various elements of the clause

Overt information on spatial entities may be found in several loci of a proposition. Several nominal classification systems may be operative at once, with possible overlap and redundancy of information. As described in this paper they can be found:

- In the naming of the spatial entity itself as is the case with *class terms*.
- On other elements of the noun phrase: as with the various subtypes of classifiers (*numeral*, *noun*, *genitive classifiers*).
- On verbs: either overtly as *verbal classifiers*, or *posture satellites*.

The main point to be made here is that some languages make extensive use of such systems, to the extent that some of them may coexist within the same language, multiplying specific information on spatial entities within a single clause.

3.2 Information may be about different characteristics of the spatial entities

Three major types of information on spatial entities are repeatedly found across the classification systems of the languages of the world (focusing on non-human spatial entities):

8. These do not exhaust the various means languages have to express information about spatial entities. Not mentioned so far, but potentially interesting too, are other systems such as, for instance, the concordial *noun class systems* (particularly the semantically motivated Amazonian systems, as discussed in Grinevald 2003 and Grinevald & Seifart 2004), the *posture satellites* (which are similar in grammatical status to English *verb particles* or Mayan *directionals* and express the position in which spatial entities participate in some events), as well as *body part locatives*, in particular the ones grammaticalized in possessive constructions and known as *relational nouns* (in the literature on Amerindian languages, but Internal Localization Nouns – or NLI “Noms de Localisation Interne” – in French literature: see Aurnague, Champagne, Vieu and colleagues’ paper in this volume).

- Material/essence, which is principally the semantic variable of noun classifier systems. It includes the notion of animacy that is found in most classifier systems.
- Physical traits for spatial and tactile information, that are mostly found in numeral classifier systems and verbal systems, either verbal classifiers or classificatory verbs.
- Function, which is the principal semantic trait of genitive classifiers but can also be found in other systems, the evolution from physical to functional semantics being a matter of degree in many cases.

It remains to analyze how these classifications are, at the same time, reflections of universal human cognition developed through the shared experience of human survival anywhere in the world, and clues to specific cultural traits that reflect modes of adaptation to specific environments, by pointing with classifiers to the saliency of certain spatial (and non spatial) entities.

Another way to approach these classification systems of spatial entities is to consider their uneven links to the various perception modes:

- The visual mode is heavily represented by information on contour/shape, size, posture/position; however it is worth noting that there is no categorization on the basis of color information, as was noted very early in studies of classifier systems.
- The tactile mode is primarily acknowledged through attention to the shape of objects being handled, with texture and essence being secondary characteristics of the classification.
- There is an interesting lack of appeal to the olfactive mode, with no grammaticalized classification system apparently linked to the smell of objects,
- and an equal absence of classification through the auditory mode, although auditory information might be found in some mensural expressions, but never in basic sortal systems.

Although the information presented in this paper has been restricted to spatial entities, it is important to mention that these classification systems very generally include non spatial entities in their schemes, such as deities and spirits, including diseases, or time units, even language units, as shown for Burmese. The present focus on spatial entities responded to the task at hand in this volume but should not distract from the need for descriptions of the complete sets of linguistic categorization systems.

3.3 About spatial information in nominal classification systems

The kind of physical information those linguistic classification systems provide includes information on basic dimensional, texture, and size features of the spatial entities.

- The most basic and widespread information attends to the salient dimensions of the objects (1D, 2D, 3D),
- with secondary variations based on texture (rigid, flexible) and size (large and small, even granular) and contour (circular, pear shaped, angular) for each type of dimensional object.
- The distinction between shape and function in the semantic analysis of some classifiers is not always easy to produce in the sense that certain shapes obviously correspond to certain functions: many tools or instruments must be long and rigid, clothing is optimally flat and flexible, containers are necessarily somewhat hollow. For further illustrations of the relations between geometry/shape and function see Vieu & Aurnague as well as Aurnague, Champagne, Vieu and colleagues' contributions in this book. A more precise account of the way geometric and functional information can be distinguished and articulated in the semantics of spatial expressions is provided in Aurnague, Vieu, & Borillo (1997).

So much remains to be done to make such semantic distinctions operative in the analysis of the systems of nominal classification introduced here that guarding from facile ad hoc interpretation tainted by easy ethnocentrism may be called for.

As mentioned on different occasions, there is an interesting convergence of information that is being conveyed by spatial classifiers (mostly those numeral classifiers and verbal classifier that indeed have spatial semantics) on one hand, and posture verbs, on the other. This semantic convergence is particularly noteworthy since it holds in spite of different lexical origins of the classifying items.

3.4 Some languages obsess about spatial information and spatial entities

This paper meant to bring to the attention of researchers not familiar with the great variety of the languages of the world the linguistic means available to highlight characteristics of spatial entities. Languages that are rich with such systems can be found all around the world, with some areal distribution in the density of certain types of systems reflected in the literature specializing in the phenomenon, such as numeral classifiers from Asia, Oceania and North America, noun classifiers from Middle America and Australia, genitive classifiers from Oceania and Latin America, noun class systems of Africa and Amazonia. Beyond this areal distribution, an interesting aspect of the phenomenon of nominal classification is the

fact that in some languages the spatial information they provide is part of a much wider scheme of the language. One can talk of the genius, or the obsession even, of some languages with spatial notions. In this respect, some regions of the world and some language families of the worlds have attracted attention in recent years.

One case in point among Amerindian languages, is the Mayan family of languages of MesoAmerica. These languages have for instance: *numeral classifier* systems (Tzeltal: Berlin 1968; Tzotzil: de León 1987; Yucatec: Lucy 1992), *noun classifiers* (Jakaltek: (Grinevald) Craig 1986b etc.; Akatek: Zavala 2000), *genitive classifiers* (Yucatec: Lehmann 1998), *positionals* (Tzeltal: Brown 1994), *relational nouns* (Tzotzil: de León 1992), as well as *directionals* (Tzotzil: Haviland 1993; Jakaltek (Popti'): Craig 1994).⁹

In closing, a comment about the wealth of what many languages around the world have chosen to explicitly tell through intricate and varied linguistic systems of nominal classification of the spatial entities of the world of the kind presented here and largely unknown to European languages, wealth that remains still largely untapped. The many Amerindian languages of interest, for instance, are, by and large, oral tradition languages of minority linguistic communities, and the vast majority of them are today at different degrees of language endangerment. Such socio-linguistic conditions are therefore bound to constitute a challenge for research methodologies that have been originally conceived and developed in research laboratories of first world countries.¹⁰ Meanwhile their potential for interesting studies of the interaction between cognition, language and culture is there, provided the linguistic profession considers it in its best interest to embrace this threatened linguistic diversity.

9. This is just a quick sampling of publications. The Mayan family has been a fertile research field for researchers from the Max Planck Institute of Nijmegen in over a decade that have pioneered much of the research on space and cognition (see Levinson & de León 1992; Haviland & Levinson 1994).

10. And last but not least, serious considerations of the kinds of ethics of fieldwork that is being more and more explicitly expected from researchers by even the major foundations now promoting the documentation of such languages. For a discussion of the situation of endangered languages in South America, see Grinevald (1998), and for an overview of the situation of the languages of the Amazonian region, see Queixalos & Lescure (2000). As feels compelled to add in closing the author of this paper, amerindianist field linguist at heart, always preoccupied with the balancing act between two challenges: the realities of fieldwork and of the life of the speakers of the languages being studied, and the realities of academic life and research standards articulated very far away from such field realities.

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