NOUN CLASSES AND CATEGORIZATION

Edited by

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INTRODUCTION

1. **Theoretical issues of categorization and human cognition.**[1]

The broad issue under consideration is the nature of categories in cognition and the relevance of these in language description, especially in classifier systems. For hundreds of years the classical view of categories was that they were discrete and based upon clusters of properties which were inherent to the entities. However, this conception has been challenged in recent years in different fields. The challenge originated in anthropological linguistics with the studies of color categories (Berlin and Kay 1969, Kay and McDaniels 1978) and was further developed in psychology and psycholinguistics with the study of concrete objects (Rosch 1975, 1978, Tversky and Heminway 1984). In linguistics, the way to this approach was paved by early works by Bolinger (1965) and Lakoff (1973) which criticized the Aristotelian approach to meaning espoused in Katz and Fodor (1964). By now prototype theory has established itself as one of the main approaches in linguistics.

In all of these fields it is held that human categorization is commonly achieved through prototypes — even in arithmetics as argued by *Lakoff* — and that categories — whenever it is relevant to speak of categories — should be described as having fuzzy edges and graded membership.

As *Posner* notes, the philosophical stakes have been placed very high in this debate on the nature of categories. Although the existence of categoriality in natural languages cannot be dispensed with altogether, the now equally well established notion of the non-discreteness of categories has turned the debate into one about the degree and the nature of categoriality. It is this issue of degree of categoriality that *Givon* addresses in his contribution in which he proposes that prototype theory be viewed as a compromise position between the strict categoriality of a Plato and the non-categorial family resemblance approach of a Wittgenstein.

Notwithstanding the passing warning from experimental psychologists like *Posner* that "experimental evidence never suggested that concepts were completely represented as prototypes, nor that prototypes were sufficient

basis for thoughts", the theory of prototypes has steadily blossomed.

In fact, in linguistics, the notion of prototype has even been expanded from the area of lexical semantics (Lakoff 1973, Coleman and Kay 1981) to the area of grammar, in that certain phenomena which until recently were analyzed as absolute grammatical categories are being shown to be best accounted for through a prototype approach. Such is the case of the traditional categories of noun (Hopper and Thompson 1984), of transitivity (Hopper and Thompson 1980, *Givon* this volume) and speech acts (*Givon* this volume), and as *Givon* argues further, the concept of prototype is in fact needed to account for language use, language change, and language acquisition, the argument being that it accounts best for metaphorical extensions, one of the essential processes at work in use, change, and acquisition.

The question of classifier systems has been taken up in this framework and seems to bear critically on the issue of the nature of categories in that they may be viewed as an instance of a linguistic device of categorization, and if the case can be made that what classifiers define are categories, then it would be a case of overt categorization in language. On one hand it is true that classifiers offer enough of a challenge to the analysis of the nature of categories that, as pointed out by *Lakoff*, some may be tempted to say that they are arbitrary forms that do not reflect conceptual structures, and hence would not help understand the nature of human categorization. On the other hand, however, it is undeniable that classifier systems represent some type of categorization and that their study may contribute to the understanding of the general phenomenon of human categorization.

In their completely overt arrangements of objects into classes, classifier systems may indeed expose how the process of categorization works in more graphic ways than lexical taxonomies can do. According to *Lakoff* the combined study of both taxonomies and classifier systems have shed so far the following light on that process:

1. The central case of a taxonomy is the basic level concrete object. As *B. Tversky* describes and defines it, this basic level is the level for which speakers provide maximum informativeness. Said informativeness is mostly transacted through a concrete knowledge of parts: of how parts are perceived and handled, and of how certain shapes of objects are associated with certain functions. While categorization in both full taxonomies and classifier systems is based on the nature of this daily interaction of human beings with their environment as it is mediated through the cultures, it appears to be that one of the major differences in the two systems of categorization is

not so much a qualitative rather than a quantitative difference and a question of the extent to which the function of the classification systems is to highlight the particular prominence of selected objects in a given culture (see *Craig* and *Zubin and Köpcke*).

2. In order to account for the process of categorization in human cognition one needs a theory of motivation which addresses the issue of extension by which categories come to be and develop. *Lakoff's* proposal consists in emphasizing the imaging ability of human cognition through the use of a process which eventually leads him to reject any notion of computability of categories as they are found in natural language, particularly of categories as they are instantiated in classifier languages. *Lakoff* further speculates that such noncomputability of human categories might be indeed one of the reasons why formal linguists continue to ignore to this day the study of classifier systems.

3. To talk about a theory of motivation for extension of categories is to break away from the traditional predictability/arbitrariness dichotomy which is at the heart of many linguistics debates, and to call for a reassessment of the long debated issue of cultural and linguistic relativism.

There is no doubt that the study of classifier systems in natural languages has much to contribute to a better understanding of the nature of categorization in human cognition on one hand, and to the nature of the semantic structure of language on the other.

2.   **Classifier systems**.

2.1 **Different grammatical prototypes of classifier systems**

Linguistic categorization done through overt classification comes typologically in two different linguistic forms defined by *Dixon* as

a. the lexico-syntactic phenomenon of noun classification, including numeral classifiers, and represented in the volume by the classifier systems of Austronesian languages (*Adams*) Tai languages (*DeLancey*), Chinese (*Erbaugh*), Japanese (*Downing*), and American Sign language (*Suppalla*).

b. the grammatical category of noun classes, including most types of gender systems and concord systems, and represented in the volume by the noun classes of Niger Congo languages (*Demuth, Faraclas and Marchese*), Proto Bantu (*Denny and Creider*), and the gender system of German (*Zubin and Köpcke*).

According to *Dixon* the most prototypical exemplars of noun class sys-

tems and sets of classifiers can be distinguished from each other by the following criteria:

a. their size (small and finite system vs. larger and more open set)
b. their morphological status (inflectional morphology vs. free lexical morphemes)
c. their grammatical use (obligatory and rule set vs. discourse sensitive)

with the types of categorization correlating with the morphological types of language (inflectional vs. isolating).

Three contributions to this volume sketch attested variations from this bipartite categorial morphological typology of classification systems. Jacaltec (*Craig*) is an example of a noun classifier system at the fuzzy edges between prototypical noun classes and prototypical sets of numeral classifiers. Yagua (*Payne*) proves that a classifier system may be both numeral and concordial and both inflectional and derivational in nature. Finally, a number of North American Indian Languages (*Mithun*) exhibit a secondary type of classification system through a process of noun incorporation originally developed as a predicate qualifying system. As noted by *Dixon* the existence of this noun incorporation classifying system seems to correlate with the polysynthetic nature of the morphology of these languages. Another striking example of a complex system of predicate classifiers is found in American Sign language (*Suppalla*).

To complete the inventory of possible systems of linguistic classification found in natural languages one must add two further types which are not found in the speech of natural languages. One type exists only in the writing systems but not in the speech of some natural languages. It is represented by graphemic classifiers of Egyptian hieroglyphs and Mesopotamian Cuneiforms described by *Rude*. Another non-verbal system is found in the classifier system of American Sign language described by *Suppalla*, which exhibits a richness of resources of categorization unrivalled in spoken languages.

As mentioned earlier, the seemingly categorial discussion of the difference between noun class systems and sets of classifiers should not mask the reality of the fuzzy edges between the two prototypes of linguistics categorization discussed by *Dixon*, nor of the fuzzy edges between classifier systems and other classifying processes found in natural languages. While it is relatively easy to spot overt linguistic categorization, not all instances of overt categorization

are considered instances of classifier systems. The task of identifying classifier languages is not always a matter of clearcut decision indeed, but rather a matter of definition. (Compare Allan 1977 and Dixon 1982.) At the fuzzy edge of classifier systems one finds, for instance, the measure terms found in all languages or the more area specific phenomenon of class names used in compounding which are represented in the volume by *DeLancey's* discussion of Tai.

In summary, the phenomenon of linguistic classification may take a number of linguistic forms with a maximal contrast found between the noun class gender system of Indo European languages and the sets of numeral classifiers of Southeast Asian languages, and various intermediate types attested in the Americas.

2.2 Common semantic properties

What all the systems of classifications discussed above have in common beyond their various morphosyntactic characteristics is that they share a common set of semantic categorizational principles. No matter the form of the classifying system, the same set of features is consistently chosen to characterize remarkably similar prototypical members of categories (*Denny and Creider*, *Adams*, *Craig*, *DeLancey*, *Erbaugh* and *Suppalla* in this volume). Several cross linguistic universal semantic tendencies noted in the literature are developed further in this volume.

1. From the very fact that the same semantic principles apply across classifier languages arises the notion that linguistic classification overtly categorizes the world in terms of the various types of interactions that human beings carry out with the objects of their environment, these interactions being social, physical, and functional interactions (*Denny* 1976, *Craig*, *Zubin and Köpcke*, *Suppalla*). This view of categorization is different from the classical view of categories mentioned earlier in which objects are thought to be classified in function of how they are in the world rather than how humans interact with them.

2. An implicational scale can be established among the semantic features of classification which states that linguistic classifications mark humanness and animacy first, then shape, then use and consistency. Numeral classifiers of Southeast Asian languages exhibit the full range of types of classes. The progression is paralleled in American Sign language which distinguishes first between animate and inanimate objects, further classifying inanimate

objects by a combination of morphemes indicating prototypical movement and shape first, with the added possibility of marking consistency too, through co-occurring classifiers. Meanwhile, gender systems of European languages exhibit minimal sets of classes, which distinguish at least humanness and animacy. However, as *Zubin and Köpcke* argue for German, gender may also encode functional interaction.

3. For the classification of concrete objects by physical characteristics, a possible generalization is that the identification of one dimensional objects occurs before that of two dimensional ones and that both occur before the identification of consistencies, first of rigidity, and later of flexibility.

4. The forms used as classifiers come from words used as names of concrete, discrete, moveable objects. In their classifier use they denote abstract attributes of the referents of the nouns they are derived from, either directly or in a metaphorical manner. Some of the most common objects used metaphorically for the classification of objects by shape are plants and plant parts, and to a lesser extent, body parts (*Adams, Mithun, Erbaugh*). From a cognitive point of view, the significance of the identification of parts of very familiar objects as one of the basic organizing principles of linguistic classification reinforces *Tversky*'s discussion of the significance of parts of concrete objects in the general cognitive process of determining basic level objects of taxonomies.

It is noteworthy that the commonality of the categorization principles holds for all the various linguistic classification systems when they are considered from a variety of viewpoints. The same implicational semantic universals seem to hold whether the systems are considered from a cross-linguistic typological approach (*Adams, Denny and Creider, Payne, Suppalla*) or from either one of the two developmental approaches, a historical approach (*De-Lancey, Erbaugh*), or a children's language acquisition approach (*Demuth, Faraclas, Marchese* and *Erbaugh*), or even from the point of view of language death (*Mithun*, and Schmidt 1983).

Another interesting viewpoint on the implicational universals of classifiers would be to study how they interface with the implicational universals of folk classification as revealed in the work of Brown (1984). For instance the use of plant part names as the major source of shape classifiers is no doubt related to the prominance of botanical life form classifications among folk taxonomies. Worth mentioning also is the additional specific prominence of the term for tree, the first to develop in any botanical taxonomy — as documented by Brown — and the source of the first shape classifier.

2.3 On semantic motivation

All classes contain prototypical items which exhibit strong semantic motivation, corresponding to the semantic features noted above. However, unlike taxonomic organizations, linguistic classifications categorize the world in what often appears to be aggregation of very heterogeneous items. The sample of classifier systems found in the volume represents the varying degrees of semantic motivation encountered in the world's classifying systems, from the highly motivated Jacaltec system (*Craig*) to systems that are demonstrated to be more motivated than traditionally considered, such as the German gender system (*Zubin and Köpcke*), or the Proto Bantu noun class system (*Denny and Creider*), all the way to systems which offer a real challenge to a semantically motivated analysis, such as the Tai systems (*De-Lancey*) or the Malay system (*Hopper*). Typically challenging, for instance, are noun classes such as the Dyirbal class of "women, water, fire, fighting, and the hairy mary grub" (Dixon 1982, discussed by *Lakoff*), or the Yagua class of "persons, spirits, animals, brooms, fans, manioc beer strainers, rocks, and pineapples" (*Payne*). In general, as the number of items counted by a classifier increases, the number of semantic connections between the classifier and the items grow fewer, as the example of the Japanese *hon* class shows (*Downing — Lakoff*). If the apriori assumption is that all inclusions of items in a class have (had) some semantic motivation, the challenge consists in reconstructing the linking stages of the expansion of the class. In this volume *Lakoff* sketches the various ways that one can "make sense" out of seemingly erratic, inconsistent, and incoherent classes, while *Adams* suggests the possible avenues of ever expanding inclusion through the study of the paths of extention of classifiers in genetically related languages.

2.4 Function and use of classifiers

Whether one chooses to emphasize the nominal origin of classifiers and their lexical content in hope of finding some semantic motivation for the classes, or whether one views classifiers more as nouns which have undergone both semantic and categorial bleaching, one is left wondering what seemingly redundant or bleached classifiers are "good for" (Denny 1976) and what function they come to fulfill in natural languages. From a semantic, cognitive, and cultural point of view, the function of classifiers is "to communicate a few especially important classes that objects fall into by virtue of the way we interact with them" whereas that of nouns is involved in establishing refer-

ences to things in the world" (Denny 1976: 125). Behind *Denny's* sketchy present formulations of the role of classifiers — in particular the proposal that classifiers express "a particular sort of argument for the noun predicate, in place of a general argument, x." and that they discriminate "the kind of predicates [which] will likely be expressed by the verb" — lies the idea that classifiers select a point of view on the object which will be involved both in the determination of the referent and in the possible combinations with predicates. This concept of the dual role of classifiers constitutes an interesting hypothesis amenable to empirical testing.

Depending on their linguistic status, on whether they are grammatical inflections or whether they are free lexical items, the classifiers play either a grammatical role or a pragmatic one. The grammatical role is associated with the obligatory use of gender and noun classes in Indo European languages or Bantu languages while the pragmatic role is a more delicate matter to define. All the more so when, as it is stressed by *Becker*, one works with a foreign language, since one should beware of the insiduously deforming impact of the translation language on the glosses. And as one shifts from a paradigmatic to a pragmatic approach, the description of the function of classifiers should not ignore the different levels of structure of a discourse or a text (see the rethoric analysis by *Becker*).

A very general restriction on the actual use of classifiers in discourse is worth mentioning here. It is the fact that there is usually a marked discrepancy between a rich language inventory of classifiers found in dictionaries and prescriptive grammars and the much more restricted set attested in actual speech (*Erbaugh, Downing, DeLancey, Hopper*). The variety of classifiers and the frequency of their use usually correlates with the degree of formality of the style. It appears that the greater the formality of style, the richer the variety of classifiers and the higher the frequency of their use. Such a situation, which is reported for all Southeast Asian languages, is itself still begging for an explanation, in particular about what it means with respect to *Denny's* proposal of the role of classifiers, and to the notion of style or level of language. When a classifier is used in conjunction with a full noun in those languages, it is usually to signal the presentation of a new object which will play some role in the discourse, identifying further that noun as being highly prototypical. In Hopper and Thompson's terms (1984) the property of such highly prototypical nouns is to carry the features of concreteness, individuation, and time stability. Classifiers may also play an anaphoric role, although a restricted one. In Japanese for instance the classifiers are but one of several

anaphoric alternatives, with the particular function of being able to appear at a considerable distance and of not carrying social overtones the way third person pronouns do in that language (*Downing*).

It is hoped that the theoretical insights and the data assembled in the present volume on categorization and classifiers will suscitate broad interest among the community of scholars of language, and that, beyond generating obvious interest from linguistic typologists and comparativists, it will also appeal to linguists working in prototype semantics, or in the discourse functions of linguistic expressions, and in general to all scholars exploring the field of cognitive science.

May it be that this collective work will bring classifier systems to the attention of cognitive psychologists dealing with the phenomenon of human categorization, who might be interested in how classifier systems represent particularly accessible cases of overt classifications, and that it will encourage general linguists to integrate what can be learned from classifier systems into any theory on the nature of language organization, even if, or precisely because the study of classifier systems may challenge some of the most entrenched notions of the field of linguistics, notions of what language is made of and how it functions.

NOTE

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