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Universality in noun classification

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UNIVERSALITY IN NOUN CLASSIFICATION

A Thesis

Presented to

**The Faculty of the Department
of Linguistics and Language Development
San Jose State University**

In Partial Fulfillment

**of the Requirements for the Degree
Master of Arts**

By

Waltraud H. Kapust

May, 1998

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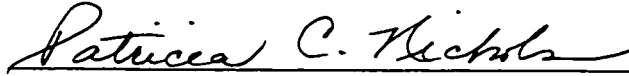
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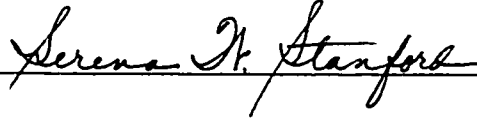


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ABSTRACT

UNIVERSALITY IN NOUN CLASSIFICATION

by Waltraud H. Kapust

It is the purpose of this paper to provide cross-linguistic evidence for the non-arbitrariness in nominal categorization. The lexical organization and the official classification system of six unrelated, areally disparate languages (German, Swahili, Vietnamese, Dyirbal, Ojibwa, Jacaltec) are examined and compared.

The findings indicate that the nominal lexicon of all languages in the sample is structured identically. However, a positive correlation between the lexical organization and the respective classificatory system only holds for three of the languages examined (Vietnamese, Jacaltec, German).

Based on the evolutionary path of classifying units, it is concluded that noun classification is not arbitrary. It is motivated by cognitive principles of classification and linguistic evolutionary processes. Three focal points of linguistic development are suggested: Lexical, lexico-syntactic, and syntactic. As evidenced by the sample, languages are expected to be at different stages along this path resulting in synchronic cross-linguistic variation.

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Introduction

Throughout this century and particularly during the last decades impressive new insights into the nature and function of human language have been gained by the combined efforts of linguists, cognitive psychologists, anthropologists and scholars in other related fields. Much of their empirical and theoretical work has focused on the question of whether or not it could be demonstrated that languages across the world, in spite of their obvious lexical and structural differences, follow some underlying universal principles of organization and language production. As a result, many models of language operation have been offered which seem to indicate that humans, indeed, essentially utilize the same strategies in the conceptualization and subsequent linguistic structuring of phenomena. However, there remain aspects of language which have tenaciously resisted researchers' attempts to arrive at the establishment of common, universally valid denominators. The diverse nominal classification, i. e., the grouping of nouns of a given language into classes, which is utilized by the world's languages, constitutes one of these aspects.

Although there is much confusion in the terminology used for typologizing classification systems, they essentially come in the following four types.

(1) Gender systems: Nouns are typically classified indirectly as masculine, feminine and neuter, the latter of which is not present in all gender systems. Gender is often not expressed on the nouns themselves but through so-called *articles* (like the French 'la'), which are invariable.

(2) Noun class systems: The number of noun classes is considerably larger than that of

gender systems. Class membership is typically indicated through phonetic and/or morphological elements on the nouns themselves and often evident in sentential agreement patterns. For instance, in the *concordial* agreement system of Swahili the classifying prefix of nouns recurs in the verbal complex and in modifying elements. Corbett (1991, p. 43) provides the following example. The nominal prefix is in bold print:

kikapu **kikubwa** **kimoja** **kilianguka**
 (basket large one fell)
 'One large basket fell.'

(3) Classifier systems: Classifying units consist of a generally large set of independent morphemes referred to as *classifiers*. They precede or follow the nouns which they classify and tend to be semantically transparent, i. e., they denote recognizable semantic properties of nouns (e. g., animacy, shape, etc.). In the Jacaltec example below the classifier equals the noun classified (from Craig, 1986b, p. 256):

te7 te7
 (classifier tree)
 'the tree'

(4) Mixed systems: These systems utilize a combination of the classifying techniques indicated above, and/or they classify nouns according to semantic distinctions (e. g., *animate* vs. *inanimate*). For example, in Ojibwa, as shown below, affixes are used in conjunction with semantic criteria (from Nichols and Nyholm, 1995). The plural affix is in bold print:

igwe 'woman': Singular animate noun
 igwewag 'women': Plural animate noun

The opaqueness of gender systems, in particular, which are a characteristic of Euro-

pean-type languages, has given rise to the generally shared belief that at least some classification systems are unanalyzable, belie any functional explanation and, therefore, are arbitrary. Bloomfield (1933) aptly summarizes this belief:

... the gender categories of most Indo-European languages ... do not agree with anything in the practical world ... there seems to be no practical criterion by which the gender of a noun in German, French, or Latin could be determined (Bloomfield, 1933, pp. 271, 280).

More recent research, however, has begun to cast doubt on the alleged arbitrariness of linguistic categorization by providing new and provocative insights into the nature and function of human language. Thus, many anthropological and psychological studies (e. g., Black, 1967, 1969a, 1969b; Kay, 1971; Berlin et al., 1973, 1974; Brown, 1979, 1984, 1985; Rosch, 1973; Rosch and Mervis, 1975; Rosch et al., 1976; Mervis and Rosch, 1981), as well as linguistic in-depth explorations of some individual languages (e. g., Berlin, 1968; Friedrich, 1970; Hunn, 1977; Köpcke, 1982; Köpcke and Zubin, 1983, 1984; Zubin and Köpcke, 1981, 1984, 1986) have revealed that not only the nominal lexicon of languages is much more structured than had been believed traditionally, but that some of the so-called "arbitrary" classification systems are governed by underlying, complex but rational principles which are shared by speakers of all languages. It is the goal of this study to show additional evidence that nominal classification is a *multi-faceted* but *non-arbitrary* phenomenon. By comparing the lexical organization of nominals and their categorization in terms of the classification systems outlined above, it is hoped that a correlation between these two fundamental organizational principles can be established. Should the results prove to be unsatisfactory, alternate approaches to noun classification will be suggested for future consideration.

The assumption that classificatory elements in language must be explainable in some way is based on several premises: First, languages are the product of humans who are equipped with the same sensory apparatus and neural systems which permit them to register external stimuli. Secondly, all humans have the same cognitive ability to abstract and conceptualize these stimuli. Thirdly, perceptual properties and the animate state of entities are most likely of primary interest to humans and, therefore, should be reflected in the categorization of phenomena. Finally, present-day dissimilarities in the linguistic manifestations of nominal categorization are the result of different evolutionary stages which individual languages have attained.

These premises served as partial guidelines for the selection of the language sample, the scope of which had to be severely limited in order to make the task manageable. The following six languages with diverse synchronic classificatory systems representing major language families from geographically disparate areas were chosen: German, an Indo-European *gender* language; Swahili, a member of the large African Bantu family, which has a *noun class* system; Vietnamese (Mon Khmer), often broadly defined as a South-East Asian *classifier* language; Dyirbal (Pama-Nyungan), one of the Australian aboriginal languages, whose classification system is often likened to the gender systems of European-type languages, and two American Indian languages with a *mixed* classification system: Ojibwa, an Algonquian language spoken in the northern part of the Americas, and Jacaltec, a member of the central American Mayan language group.

Data on the lexical organization of nouns, the different classification techniques, and the source and development of classifying units in the six languages were compiled

through extensive research of the relevant secondary literature, dictionaries, and reference grammars. The Vietnamese and German data were supplemented by information provided by native speakers.¹

In accordance with the premise that humans most likely take special interest in the animate state and the perceptual features of entities, information gathered on the nominal lexicon and the role of classificatory elements in each language focused on the linguistic treatment of two semantic principles, viz. *animacy* and *Gestalt*. In other words, emphasis was placed on the examination of the classification of living organisms, human and non-human, and the perceptual properties of objects (collectively called *Gestalt*) at the lexical and syntactic levels.

The analysis and comparison of the lexical organization and the grammatical classification systems revealed a major discrepancy: While the semantic principles of animacy and Gestalt are prominently encoded in the lexicon and grammar of all the languages examined, only the structure of the lexicon is governed by an overriding principle; i. e., the data confirmed the findings of previous studies (e. g. Berlin et al., 1973; Rosch et al., 1976) that lexical domains are structured in terms of hierarchical levels of abstractness and inclusion. The common denominator in the taxonomic structure of each lexicon was found to be the steady progression from concrete words to abstract terms, as one ascends the hierarchy. This common denominator, however, was only applicable to three of the six classificatory systems. Processes of grammaticalization partially accounted for this discrepancy. However, grammaticalization, broadly defined as changes in the phonology, morphology, semantics and syntax of all natural languages, which together result in the

creation of grammatical forms, insufficiently explained the conflicts between lexical and grammatical categorization. The subsequent focus on extra-linguistic influences on linguistic classification and further scrutiny of the evolutionary path of classifying units in each language gave rise to two significant realizations: First, purely linguistic criteria cannot account adequately for the way in which humans structure their language. Extra-linguistic, notably social and utilitarian, forces proved to have extraordinary explanatory power in all systems. Secondly, with the possible exception of the term *classifier system*, none of the traditional labels employed in language typology (gender system, noun class system, etc.) appears to be the optimal means of characterizing the nominal categorization in the languages examined. Since it was found that classifying units originate from single, concrete *lexical* items which ultimately develop into *grammatical* elements, the proposal is made to consider an approach to nominal classification which a) is more prominently based on the lexical source of classifying units and which b) is better suited to account for the *dynamic* nature of linguistic phenomena.

The paper is organized into seven major parts. The individual languages are examined in chapters 1 through 6. First, an overview of the nominal paradigm of the respective language is provided. Secondly, the lexical organization of nouns and the classification system *per se* is explored and analyzed in terms of all pertinent criteria. In chapter 7 the findings of all the languages are summarized, analyzed and compared, and an evaluation of traditional classificatory labels, as well as the proposal for an alternate approach to nominal categorization, is presented. A brief account of general observations and concerns constitutes the final part of the paper.

Although traditional terminology, i. e., *gender*, *noun class*, *classifier*, is used throughout the paper, no categorical distinction is made among them. In other words, all terms customarily employed as labels for noun class systems are understood here as *classifying units/elements*.

1. Noun classification in German

1.0 Introduction

German has often been singled out as a language having one of the most opaque classification systems. Although speculations as to its motivation had been forthcoming since the 19th century (e. g., Grimm, 1831; Michels, 1889; Polzin, 1903), overall the attempts to provide an explanatory framework have essentially failed. In fact, until recently the elusiveness of the system has prompted some linguists either to ignore its analysis or to conclude, analogous to Bloomfield (1933, p. 280), that

the classification [in German] is arbitrary. No underlying rationale can be guessed at. The presence of such systems in a human cognitive system constitutes by itself excellent testimony of the occasional nonsensibleness of the species. Not only was this system devised by humans but generation after generation of children peaceably relearns it (Maratsos, 1979, p. 235).

These claims are not entirely without foundation. In contrast to classifier systems which semantically are relatively transparent (cf. the discussion of Vietnamese), the motivation for nominal classification in languages of the declensional type, i. e., Indo-European languages, appears to lack any clear phonological, semantic or structural basis, thus giving the impression of arbitrariness. However, experimental evidence from gender assignment to loanwords (e. g., Arndt, 1970; Gregor, 1983) and the acquisition of gender by children (cf. esp. Mills, 1986), as well as other types of research conducted during the last fifteen years or so (Zubin and Köpcke, 1981, 1984, 1986; Köpcke, 1982; Köpcke and Zubin 1983, 1984; Steinmetz, 1986; and others) indicate that any claims of arbitrariness should, if not dismissed, at least be seriously reconsidered.

It has been shown that the assignment of gender in German is, indeed, based on a

number of formal (phonetic/phonological and morphological) as well as semantic principles which allow the prediction of gender for a substantial portion of the nominal lexicon. The difficulty in uncovering these principles seems largely to have been due to their complex interaction and apparent competition with each other. Both factors will be explored and illustrated throughout the paper in conjunction with evidence for the more recent postulate that gender assignment in German - contrary to Bloomfield's and Maratsos' claims - constitutes a highly complex, but, nonetheless, rational, non-arbitrary system (cf. esp. Zubin and Köpcke, 1984).

1.1 Characteristics of noun classification in modern German

The nominal lexicon of German consists of three classes which exemplify the typical Indo-European tripartite division of nouns into masculine, feminine, and neuter. Grammatical gender determines the allocation of individual nouns to their respective class. Gender is not indicated on the nouns themselves but expressed through the use of three different determiners (or articles) which precede the noun: masculine 'der', feminine 'die', and neuter 'das'. Although there has been morphological erosion in the adjectival paradigm, in many cases the grammatical gender of a noun determines adjective endings within the same noun phrase. In addition, personal pronouns in the third person singular show the same tripartite division as nouns, namely masculine 'er' (he), feminine 'sie' (she) and neuter 'es' (it); relative pronouns agree with the grammatical gender of the head noun.

As a rule, class membership of nouns is invariable. Although German, to a certain extent, does use biological sex as a criterion for gender assignment, articles may not be

changed to reflect sex differentiation. Instead, derivational affixes, typically in the form of suffixes, fulfill this function. For example, 'der Lehrer' (male teacher) cannot be changed to '*die Lehrer' to denote a female teacher. The suffix *-in* is needed in addition to the feminine article 'die' to arrive at 'die Lehrerin' (female teacher).

A cursory inspection of the distribution of nouns to the three gender classes provides almost no clues as to its motivation. Although, as noted above, there is allocation based on biological sex, this allocation is not consistent. While the majority of words referring to male or female animates are marked in accordance with biological sex, a sizable number are not. Well-known examples are 'das Kind' (child) and, most of all, 'das Mädchen' (girl) and 'das Fräulein' (miss, young lady). The three nouns denote human beings and yet their gender assignment puts them into the neuter category.

Many other semantic fields show even greater disparity in gender allocation. Terms for body parts are a typical example:

Masc.	Fem.	Neut.
der Körper 'body'	die Nase 'nose'	das Auge 'eye'
der Mund 'mouth'	die Hand 'hand'	das Kinn 'chin'
der Arm 'arm'	die Schulter 'shoulder'	das Bein 'leg'
der Finger 'finger'	die Brust 'breast'	das Ohr 'ear'
der Rücken 'back'	die Stirn 'forehead'	das Knie 'knee'

1.2 Formal criteria of gender assignment

In spite of the confusing array of gender allocation exemplified above, closer inspection of the nominal lexicon in German reveals the critical importance of formal criteria in gender assignment; e. g., the gender of a large portion of nouns can be predicted on the basis of "the form of the nouns involved rather than ... their meaning" (Corbett, 1991,

p. 33). These formal assignment rules typically are of two types, morphological and phonological. Both kinds of rules apply to German but often are in conflict with each other and/or overlap with semantic criteria. Some major formal assignment rules are summarized and exemplified below.

1.2.1 Morphological assignment rules²

- (1) Abstracta with the suffixes *-ung*, *-heit*, *-keit*, *-schaft* and *-erei* are always feminine (die *Endung* 'ending', die *Schönheit* 'beauty', die *Einigkeit* 'unity', die *Freundschaft* 'friendship', die *Streiterei* 'dispute').
- (2) Words ending in *-chen* and *-lein* generally denote diminutives and are neuter (das *Mädchen* 'girl', das *Tischlein* 'small table').
- (3) Nominalized verbs are assigned neuter gender (das *Lesen* 'the reading'; das *Schreiben* 'the writing').
- (4) The prefix *-ge*, denoting collectiva, signals neuter in most cases (das *Getränk* 'drink'; das *Gebirge* 'mountain range'; but there are exceptions: die *Gemeinde* 'community'; der *Genuss* 'enjoyment'; der *Geselle* 'companion').

Three of the formal rules listed above, i. e., (1), (2) and (3) are consistent and reliable indicators of the grammatical gender of nouns. They never give way to other rules.

Rule (2), for example, is strong enough to override the otherwise quite powerful semantic criterion of animacy, as seen in the case of 'das Mädchen' (girl) whose neuter marking is caused by the ending *-chen*. Rule (4), however, - as noted - is not exceptionless. In fact, it shows the opposite tendency of rule (2). For example, in the case of 'der Geselle' (companion) the principle of animacy takes precedence over the morphological marking *ge-*. Both examples possibly suggest that morphological determinants of gender have different degrees of strength which make them more or less vulnerable to the intrusion of semantic

factors.

In the context of morphological assignment rules, special note must be taken of the last member principle which is of great significance for gender allocation of compound nouns (which abound in German). According to the last member principle, whenever nouns with different genders are combined, it is the last word (the head of the construction) which determines the gender of the entire compound. Thus, a combination of 'die Donau' (the Danube), 'der Dampf' (steam), 'das Schiff' (ship), 'die Fahrt' (here: cruise), 'die Gesellschaft' (company) and 'der Kapitän' (captain) yields the masculine compound 'der Donaudampfschiffahrtsgesellschaftskapitän' (captain of the Danube steam cruise ship company). The same principle applies to derivational suffixes such as *-schaft*, which determine gender: masculine 'der Freund' (friend), but feminine 'die Freundschaft' (friendship). The fact that gender assignment for these compounds is based on the gender of its last member is, from a structural point of view, not too surprising. Compounds have a kind of attributive structure (cf. Eisenberg, 1986, p. 161), i. e., similar to adjectives, the preceding noun modifies the following one. In fact, in a large number of these complex units, adjectives are combined with nouns or suffixes. For example, the adjective 'freundlich' (friendly) plus *-keit* becomes 'die Freundlichkeit' (friendliness); 'schwer' (heavy) and 'das Metall' (metal) can be combined to form 'das Schwermetall' (heavy metal). One aspect of the last member principle, however, is of particular interest: In spite of its seemingly categorical status, extensive experimental evidence has been collected which indicates that even the last member principle can be overridden by semantic considerations. This issue will be further explored in the discussion of gender allocation in the affective

lexicon (section 1.3.2.3).

1.2.2 Phonetic/phonological assignment rules

In comparison with morphological considerations for gender marking, the role of phonetic/phonological rules in German is less obvious. But again it has been shown that certain phonetic features do contribute considerably to gender choice. This is particularly true in the case of nouns consisting of one morpheme or one syllable whose gender cannot be determined by any morphological rules. Zubin and Köpcke (1981) and Köpcke (1982) examined a large number of monosyllabic nouns in the German lexicon and were able to establish 24 phonological rules which have significant bearing on gender allocation. These studies show that the phonetic form of nearly 90% of all monosyllabic nouns (in conjunction with semantic and morphological properties) determines gender assignment. However, just like some morphological assignment rules, phonological rules are not categorical but, rather, constitute (strong) tendencies. Three of these phonetic/phonological rules (based on Zubin and Köpcke, 1981, pp. 440-443) are illustrated below; additional rules are listed in Table 1.³

- (1) If a noun ends with a consonant cluster containing a nonsibilant fricative and /t/, then with only some exceptions, it will be feminine unless other morphological or semantic rules take precedence.

$$\text{gender} = \text{feminine} \text{ ___ } (C) \left\{ \begin{array}{c} f \\ \text{ç} \\ x \end{array} \right\} t$$

Examples: die Nacht [naxt] (night), die Macht [maxt] (might), die Bucht [buxt] (bay), die Sucht [suxt] (addiction), die Tracht [traxt] (costume), die Drift [drɪft], die Gicht [gɪçt] (gout).

But: der Wicht [vɪçt] (urchin), der Knecht [kneçt] (farm-hand, servant).

(2) With few exceptions, nouns with long vowels are masculine or neuter, but not feminine.

gender = masculine or neuter / ___ \bar{V} ___

Examples: der Weg [ve:k] (way), das Gas [ga:s] (gas), das Gras [gra:s] (grass), der Rat [ra:t] (advice), das Boot [bo:t] (boat), der Mond [mo:nt] (moon).

But: die Tat [ta:t] (deed), die Kuh [ku:] (cow).

(3) Consonant cluster principle: the more consonants a monosyllabic noun has in either initial or final position, the more likely it is to be masculine (cf. Table 2).

The two exceptions included in the examples for (1) are clearly cases in which the concept of animacy outweighs the phonetic composition of the words. The exceptional feminine 'die Kuh' (cow) in (2) can be explained the same way. In contrast, one must wonder about the feminine designation of 'die Tat' (deed). The account of semantic categories by Köpcke and Zubin (1983) includes the notion of 'power/strength' which is typically expressed through feminine nouns. The gender assignment of 'die Tat' could perhaps be explained as an analogical extension of this notion.

With respect to the previously mentioned complexity of the gender system, it is of special interest to note that the data collected by Zubin and Köpcke also revealed "antagonistic interaction of specific [phonological] principles" (Zubin and Köpcke, 1981, p. 442), i. e., phonetic/phonological assignment rules are not only in competition with semantic rules; they are also in conflict with each other. The conflicting forces within the phonetic domain were discovered when it became apparent that the consonant cluster principle ((3) above) only holds when words containing a word-final fricative cluster

((1) above) are excluded from the corpus.

Table 1

Some additional phonetic rules of gender assignment
 (Source: Zubin and Köpcke, 1984, pp. 29-32; cf. Mills, 1986, p. 33.
 Most examples added).

Phonetic form	Gender	Examples
1. —[ə]	Fem.	die Hose (pants) die Nase (nose)
2. —[i:]	Fem.	die Industrie (industry) die Kopie (copy)
3. —[üə],[uə]	Fem.	die Tür (door) die Frisur (hairdo)
4. —[ɪç]	Masc.	der Teppich (rug) der Bottich (tub)
5. —Nasal+C	Masc.	der Sand (sand) der Mund (mouth)
6. —[ɛt]	Neut.	das Bett (bed) das Kabarett (cabaret)
7. —[i:ə]	Neut.	das Bier (beer) das Klavier (piano)
8. [ʃ]+C— (monosyl.)	Masc.	der Schwamm (sponge) der Schluss (end)
9. [dr], [tr]— (monosyl.)	Masc.	der Traum (dream) der Druck (pressure)
10. [kn]— (monosyl.)	Masc.	der Knauf (knob) der Knopf (button)

Overall, phonetic/phonological assignment rules seem to prevail whenever there are no stronger criteria for gender assignment available (Eisenberg, 1986, p. 162). However, as impressive as some of them might appear, they have no real explanatory value because they provide no answer to some fundamental questions: For example, why do certain sounds or sound combinations signal masculine gender assignment and not feminine or

neuter? Do consonant clusters have inherently 'stronger' properties than single consonants? If so, what are they? The fact that the phonetic form of nouns has been found to be

Table 2

Correlation between gender and number of consonants for
German monosyllabic nouns
(Source: Zubin and Köpcke, 1981, p. 441; articles and translations added)

	No. consonants	Nouns	%masculine	Example
initial position				
	0	57	46%	die Axt (axe)
	1	853	59%	der Mast (mast)
	2	505	73%	der Spass (fun)
	3	51	82%	der Spross (sprig)
final position				
	0	77	43%	der Schuh (shoe)
	1	753	63%	der Schuss (shot)
	2	503	74%	der Schutz (cover)
	3	73	77%	der Schurz (loincloth)
	4	4	-	

one of the important indicators of gender in earlier stages of the language (cf. esp. Wurzel, 1988) does not seem to be accidental. In fact, some scholars (e. g., Hinton et al., 1994) maintain that sounds play a much more crucial role in language than has been recognized to date. Continued research in this area might eventually shed more light on the significance of sound in the German gender system (as well as in other classificatory systems).

1.3 Semantic criteria of gender assignment in German

Before proceeding with the discussion of some semantic criteria of gender determination in German, two opposing positions with regard to the semantic content of expres-

sions, i. e., their iconicity, need to be briefly addressed. Those who hold the so-called analogist view (e. g., Taylor, 1989; Zubin and Köpcke, 1986; and others) maintain that expressions reflect certain properties of entities to which they refer. Simply put, entities are named in accordance with the way they look. Proponents of the opposing, anomalist view advocate that there is no relation between linguistic signs and the characteristics of their referents; i. e., the relation between the two is arbitrary. Thus, three different expressions for the same entity, e. g., English 'woman', French 'femme' and German 'Frau', would be the product of chance. The latter view, which is the essence of Saussure's doctrine of "l'arbitraire du signe linguistique" (1916) has played a dominant role in modern linguistics. Various recent language studies, however, have provided evidence which seriously challenges the anomalist view and lends considerable support to the analogist position. It has been found that a relationship between form and meaning does exist although the relationship is not a transparent one. Rather, "affinities between form and meaning suggest an underlying web of natural, analogical connections *limiting the degree to which the name for a concept may be infinitively variable*" (Zubin and Köpcke, 1986, p. 140; emphasis added). The most general delimiting devices appear to be the processes by which people categorize the world around them. The essence of these categorizing processes, in general, and their significance in the German gender system, in particular, are explored below.

1.3.1 Categorization

Among the most notable contributions to the concept of linguistic categorization have

been those made by Rosch, who, in collaboration with others, conducted a number of empirical studies based on the analogist view outlined above. She maintains that

the world consists of a virtually infinite number of discriminably different stimuli. One of the most basic functions of all organisms is the cutting up of the environment into classifications by which nonidentical stimuli can be treated as equivalent (Rosch, et al., 1976, p. 382).

The principal message contained in these remarks applies to language universally: The human mind organizes external stimuli by establishing categories which presumably facilitate the cognitive processing of these stimuli; i. e., "one purpose of categorization is to reduce the infinite differences among stimuli to behaviorally and cognitively useable proportions" (Rosch et al., 1976, p. 383). Through extensive experimentation Rosch was able to show that, at the lexical level, the cutting up or categorization of the human environment essentially yields three hierarchical levels of nominal categories: superordinate, basic and subordinate. While superordinate level terms have very few differentiating features, words at the basic level exhibit the highest amount of defining characteristics to which subordinates do not substantially add. Thus, the basic tenet of taxonomic categorization holds that lexical categories are related to each other by means of class inclusion resulting in different degrees of abstraction:

The greater the inclusiveness of a category within a taxonomy, the higher the level of abstraction. ... taxonomies of concrete objects are structured such that there is generally one level of abstraction at which the most basic category cuts can be made. In general, the basic level of abstraction in a taxonomy is the level at which categories carry the most information, ... and are, thus, the most differentiated from one another (Rosch et al., 1976, p. 383).

The following excerpt from biological taxonomies, which Rosch included in her experiments (Rosch et al., 1976, p. 388), illustrates the mechanism of lexical categoriza-

tion in English.

Superordinate	Basic level	Subordinates	
Tree	Maple	Silver maple	Sugar maple
	Birch	River birch	White birch
	Oak	White oak	Red oak
Fish	Bass	Sea bass	Striped bass
	Trout	Rainbow trout	Steelhead trout
	Salmon	Blueback salmon	Chinook salmon

The situation in German is similar to English (cf. Tables 3 and 4). The highest level of abstraction is also found at the superordinate level; i. e., the informational content of German superordinates is general: "Superordinate concepts are conceptionally vague, undifferentiated" (Zubin and Köpcke, 1986, p. 146). In other words, they do not convey clear perceptual images. More concrete information, again analogous to English, is provided by nouns at the basic and subordinate levels where they are "richly specified both perceptually and functionally" (Zubin and Köpcke, 1986, p. 146). The following is a simple illustration of superordinancy relations in German. Grammatical markers, which precede the noun, are given in parentheses.

Superordinate	Basic level	Subordinates
(das) Möbel(-stück) 'furniture'	(der) Tisch 'table'	(der) Küchentisch 'kitchen table' (der) Schreibtisch 'desk' (der) Arbeitstisch 'work bench'
	(der) Stuhl 'chair'	(der) Küchenstuhl 'kitchen chair' (der) Barstuhl 'bar stool' (der) Liegestuhl 'lounge chair'
	(der) Schrank 'closet'	(der) Kleiderschrank 'wardrobe'

		(der) Aktenschrank 'file cabinet'
		(der) Bücherschrank 'book case'
(das) Geschirr 'tableware'	(der) Teller 'plate'	(der) Unterteller 'saucer'
		(der) Kuchenteller 'cake plate'
		(der) Suppenteller 'soup bowl'
	(die) Tasse 'cup'	(die) Kaffeetasse 'coffee cup'
		(die) Teetasse 'tea cup'

When grammatical markers (the articles *der*, *die*, *das*) are added to the different levels of lexical taxonomies, some surprising regularities emerge. Thus, superordination is formally expressed by a large portion of nouns which are marked with the neuter article (*das*) and frequently also have the prefix *-ge*, as exemplified above by *das Möbel* and *das Geschirr*. The prefix *ge-* (cf. section 2.1) often designates collectiva, a term which by itself implies generality. In contrast to the preference for neuter gender marking at the superordinate level, basic and subordinate level terms are typically assigned masculine (*der*) or feminine (*die*) gender (*der Tisch*, *der Stuhl*, *der Schrank*, *der Teller*, *die Tasse*). However, it must be emphasized that neuter markings are not barred from occurring at the basic and subordinate levels; i. e., the correlation between grammatical gender and taxonomic classification is far from perfect.

Table 3, slightly modified, is based on four of the nine taxonomies which were used as stimuli in the experiments by Rosch (Rosch et al., 1976, p. 388) and replicated by Köpcke and Zubin (1986) for German. The German examples fully support the applicability of the general claims made with respect to the lexical categorization of English nouns and also reveal the general relationship between categories and gender choice in German. The German translation of Rosch's terms is by Köpcke and Zubin (1984, p. 36). The superor-

dinate term 'das Gemüse' (vegetable), illustrating a superordinate noun beginning with *-ge*, is an *ad hoc* addition.

Table 3

Gender assignment of German nouns at different levels of categorization; *der, die, das* correspond to the English *the*.

Superordinate	Basic level	Subordinate
das Instrument (musical instrument)	die Gitarre (guitar)	die Konzertgitarre (classical guitar)
	das Klavier (piano)	der Flügel (grand piano)
	die Trommel (drum)	die Basstrommel (base drum)
das Obst (fruit)	der Apfel (apple)	der Granny-Smith (Granny-Smith apple)
	der Pfirsich (peach)	der kalifornische Pfirsich (Californian peach)
	die Traube	die kernlose Traube (seedless grape)
das Werkzeug (tool)	der Hammer (hammer)	der Zimmermannshammer (claw hammer)
	die Säge (saw)	die Blattsäge (hack hand saw)
	der Schraubenzieher (screwdriver)	der Kreuzschraubenzieher (Phillips screwdriver)
das Kleid (die Kleidung, (clothing))	die Hose (pants)	die Lederhose (leather pants)
	der Strumpf (sock)	der Kniestrumpf (knee sock)
	das Hemd (shirt)	das Unterhemd (undershirt)
das Gemüse (vegetable)	der Kohl (cabbage)	der Rotkohl (red cabbage)
	die Kartoffel (potato)	die Süsskartoffel (sweet potato)
	die Bohne (bean)	die Sojabohne (soy bean)

Two exceptions to the distribution of gender among the three levels of categorization are found in Table 3: The basic level terms 'das Klavier' (piano) and 'das Hemd' (shirt) are - contrary to expectation - marked neuter, thus underscoring the caveat expressed above that the correlation between gender allocation and taxonomic level is not categorical. Zubin and Köpcke (1986) have offered a tentative but plausible explanation for these two exceptions (as well as for other neuter nouns at the basic level). They believe that the unusual gender marking is a consequence of the "limited inventory dilemma." Viewing communication as the basic function of language, they argue that

there is an irresolvable conflict between the pressure to reserve each gender for a single function in the service of transparent form-meaning relationships, and the need to maximally exploit all three genders on the basic level in the service of communicative function (Zubin and Köpcke, 1986, p. 173).

Simply put, the authors interpret the intrusion of neuter nouns into the basic level category (particularly evident with respect to everyday objects) as the speakers' attempt to eliminate referential ambiguity in discourse. For example, by exploiting all three genders, clear pronominal anaphoric reference is established with respect to eating utensils: *das* Messer 'knife' (pronoun *es*), *der* Löffel 'spoon' (pronoun *er*), *die* Gabel 'fork' (pronoun *sie*).

There are two other aspects of taxonomic categorization which are of relevance for the classification of nouns in German. One concerns the type of external stimuli which are more specifically categorized as basic level terms; the other deals with the question of variation in categorization. Both aspects are briefly discussed below.

It appears that particularly those portions of the environment which are of life-sustaining importance to speakers of a language are more finely differentiated linguisti-

cally than those which are not (Köpcke and Zubin, 1984, p. 33). The foregoing generally implies a correlation between nominal classification and culture-specific phenomena. For instance, domesticated animals have traditionally been of special value in the German linguistic area. As a consequence, nouns denoting domesticated animals show a greater degree of specification than those denoting indigenous wild animals. Again, this fact, as shown in Table 4, is reflected in their grammatical gender.

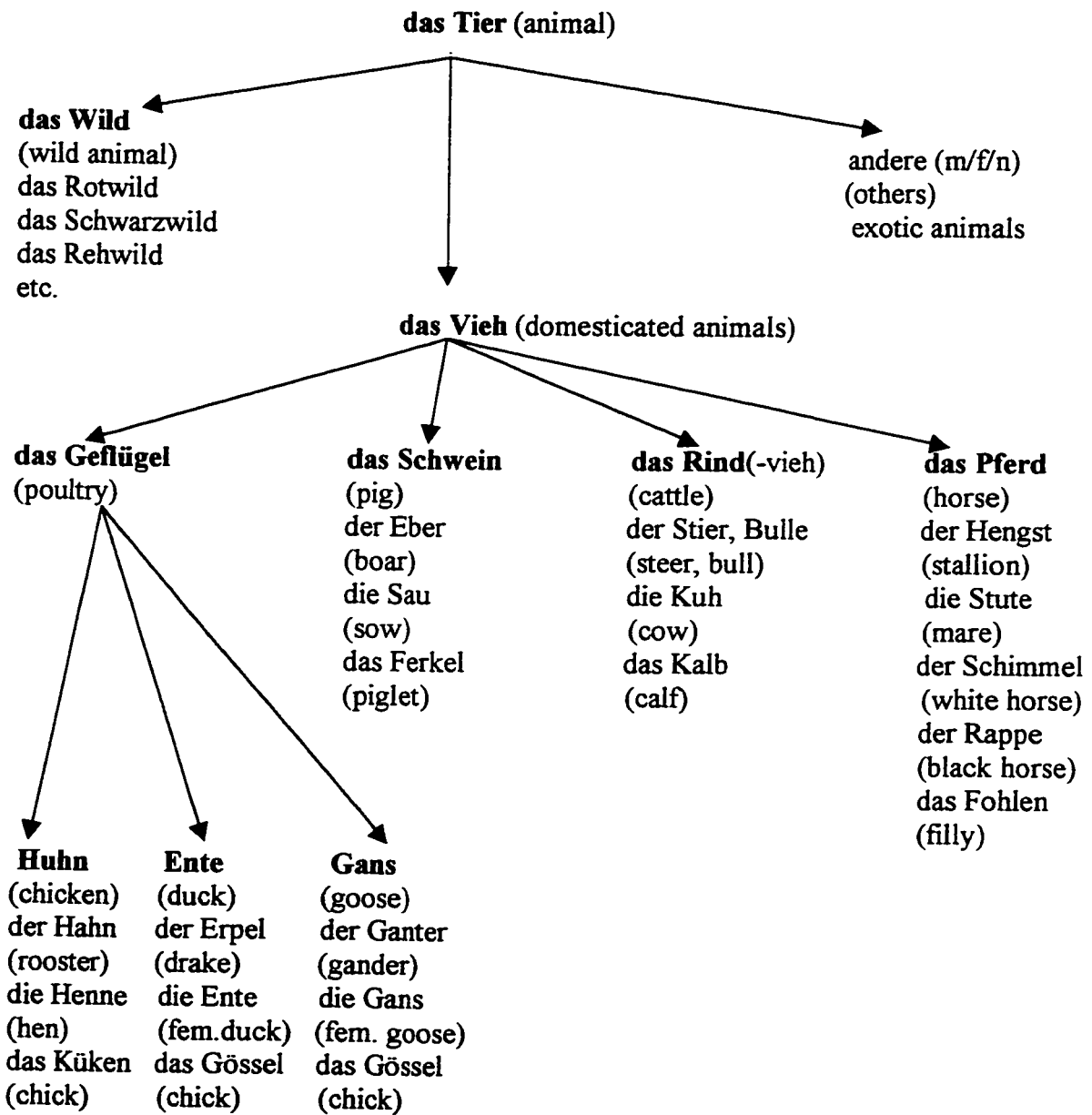
Two additional observations regarding Table 4 are of interest here: (1) At times, basic-level terms do not occur until the third level, suggesting that there exists a more fine-grained system of superordination with respect to German. (2) Basic-level terms denoting animates are assigned gender according to biological sex; i. e., males are 'der' and females are 'die'. However, this assignment does not apply to offspring. Throughout the language, young animals are assigned the neuter article 'das'. A tentative explanation for this curious phenomenon will be given in the section on animacy.

With respect to the first observation, Rosch's study is again helpful: Relative knowledge about objects can change the classification scheme (Rosch et al., 1976, p. 430). In other words, the degree of knowledge a person possesses about a particular object can result in the classification of that object as a superordinate or basic level term. While this seems to be true in English, the situation in German is more complicated. Since grammatical gender constitutes a (nearly) closed grammatical category, classification of entities in present-day German is fixed by basically invariable gender assignment. Therefore, with the possible exception of newly acquired loans, it can be argued that the type of change in categorization which English allows with relatively few restrictions is not quite

the same in the grammatically constrained German system. Instead, gender use seems to reflect more the amount of knowledge of entities which once was and/or continues to be

Table 4

Taxonomy of domesticated and indigenous wild animals
(Source: Zubin and Köpcke, 1984, p. 33; slightly expanded)



of *functional* significance for certain groups of speakers (Zubin and Köpcke, 1986, pp. 153-156). Thus, hunters need to use generic, i. e., neuter terms for wild animals because it is imperative for them to reserve the masculine and feminine genders for the distinction between male and female animals.⁴ The normal population, especially in modern times, does not have to make such a clear distinction and, consequently, often applies a sex-based, i. e., basic level differentiation to wild animals. The diverging classification is apparent in the following examples which illustrate the terminology of normal speakers vs. that of hunters (from Zubin and Köpcke, 1986, p. 155):

common term: masc. gender	hunter's term: neut. gender	male masc. gender	female fem. gender
der (Rot)Hirsch (red deer)	das Rotwild	der Rothirsch	die Hinde
der Steinbock (ibex)	das Steinwild	der Steinbock	die Geiss

Overall, however, such (minor) differences do not diminish the fact that speakers of English and German utilize the same basic strategies in categorization. Likewise, the principle of hierarchical organization can be observed in many other semantic fields. Table 5 provides an overview of additional taxonomies (based on Zubin and Köpcke, 1986, pp. 166-167, modified and abbreviated; cf. also Zubin and Köpcke, 1984, pp. 32-35).

1.3.2 Other semantic criteria of gender assignment in German

Although the significance of categorization in the German gender system cannot be doubted, one must wonder how speakers classify nouns at the basic level. The importance

Table 5

Summary of additional taxonomies with simplex neut-gender superordinate terms

Superordinate	Basic Level
1. das Land 'land, state, country'	der Wald, der Acker, der Sumpf, die Wiese 'woods' 'field' 'swamp' 'meadow'
2. das Amt 'office'	der Zoll, die Post, die Polizei 'customs' 'post office' 'police'
3. das Wissen 'knowledge'	die Kunst, die Musik, die Keramik 'art' 'music' 'ceramics'
4. das Fach 'discipline, occupation'	die Chemie, die Botanik, die Tischlerei 'chemistry' 'botany' 'carpentry'
5. das Fest 'celebration'	der Karneval, die Taufe, die Hochzeit 'Mardi Gras' 'christening' 'wedding'
6. das Zimmer 'room'	die Kammer, der Saal, die Stube, die Küche 'chamber' 'hall' 'parlor' 'kitchen'
7. das Tuch/Gewebe 'fabric'	der Samt, der Krepp, der Satin, der Brokat 'velvet' 'crepe' 'satin' 'brocade'
8. das Wetter 'weather'	der Regen, der Schnee, der Wind, die Dürre 'rain' 'snow' 'wind' 'draught'
9. das Mineral 'mineral'	der Ton, der Kalk, der Sand, der Kiesel 'clay' 'chalk' 'sand' 'flint'
10. das Geld 'money'	die Mark, der Pfennig, der Dollar 'mark' 'penny' 'dollar'
11. das Mass 'measure' (instrument or unit)	der Meter, die Waage, die Uhr 'meter' 'scale' 'clock'
12. das Zeichen 'sign, signal' das Seezeichen 'sea marker'	die Tonne, die Boje, die Flagge 'buoy' 'buoy' 'signal flag'
das Verkehrszeichen 'traffic sign, signal'	die Ampel, der Wegweiser, 'traffic light' 'direction sign'

of formal assignment rules has been discussed previously. However, repeated reference has been made to the fact that formal gender assignment rules have many exceptions either because one particular rule takes precedence over another, or because no explanation on phonetic or morphological grounds is available. While it is true that some formal principles have resulted in exceptionless or nearly exceptionless gender assignment in modern German, there are evidently other *semantic* forces at work which, in addition to categorization, are of critical importance in the gender system. In general, there is consensus (cf. Frawley, 1992, pp. 89-129) that these additional criteria include such universal principles of noun classification as physical structure (Gestalt) and animacy. In addition, a groundbreaking study by Zubin and Köpcke (1984) has revealed the significance of affect in the classification of German nominals. The Gestalt (more fully defined in section 3.2.1), animacy and affect principles are discussed in the following sections. Table 6 provides a list of additional semantic fields not covered here (data are from *Duden*, 1995, ed. by Drosdowski et al., Vol. 4, p. 198, and from Köpcke and Zubin, 1983, p. 170).

1.3.2.1 Gestalt

The study of many different languages (cf. esp. Denny, 1986, 1976; Allan, 1977) has shown that objects are often classified in accordance with their Gestalt; i. e., they are differentiated on the basis of their perceived form which, among others, comprises such general physical properties as extendedness and size (cf. Frawley, 1992, p. 121). More specifically, these physical properties include the notions of length, flatness, pointedness, etc. many of which can appear in combination. Several of these structural characteristics

have also been identified as determinants of gender in German (Köpcke and Zubin,

Table 6

Gender distribution in selected semantic fields

1. Masculine:

- Terms for minerals and kinds of stone
(der Stein 'stone', der Fels 'rock', der Diamand 'diamond', etc.)
- Terms for alcoholic drinks
(der Wein 'wine', der Gin 'gin', der Rum 'rum', etc.)
- Terms for seasons, months and days
(der Winter 'winter', der Juni 'June', der Montag 'Monday', etc.)
- Terms for cardinal points, winds and precipitation
(der Norden 'north', der Sturm 'storm', der Regen 'rain', der Hagel 'hail', etc.)
- Monetary terms
(der Pfennig 'penny', der Rubel 'ruble', der Dollar 'dollar', etc.)

2. Feminine:

- Terms for many trees and plants
(die Eiche 'oak', die Kiefer 'pine', die Blume 'flower', die Rose 'rose', etc.)
- Nominalized numbers
(die Vier 'four', die Zehn 'ten', die Million 'million', etc.)

3. Neuter:

- Most terms for metals and chemical elements
(das Eisen 'iron', das Gold 'gold', das Silber 'silver', das Helium 'helium', etc.)
- Terms for drugs/chemicals
(das Aspirin 'aspirin', das Gift 'poison', etc.)

1984), but, again, there are many exceptions. Also, in a number of cases, there exists the possibility that a certain gender assignment might be based on principles not associated

with physical properties, but rather with the phonetic form of the word, for example. Without further examination it is nearly impossible to say whether the modern form of the words in question has resulted from phonetic or semantic assignment rules. There is, however, sufficient evidence that at one developmental stage physical properties did play a role in the classification of objects. With slight modifications, the following examples are all from Köpcke and Zubin (1984, p. 35).

(1) Objects whose dominant overall characteristics are flatness and/or thinness, as a rule, are feminine. Examples are 'die Decke' (ceiling, blanket), 'die Fläche' (plane), 'die Platte' (plate), 'die Tafel' (board). As noted above, except for the last item, it remains unclear whether the cited examples are feminine because of physical properties or phonetic shape (cf. the phonetic rule which states that nouns ending in *-e* tend to be feminine) or a combination of the two.

(2) If the perceptually prevailing physical property is one of pointedness and/or sharpness, or if objects are hollow, there is a strong tendency for nouns to be feminine: 'die Spitze' (peak, tip), 'die Klinge' (blade), 'die Nadel' (needle), 'die Schlucht' (ravine), 'die Gruft' (tomb), etc. As before, it could be argued that the phonetic form of most examples is responsible for their feminine gender designation.

(3) The majority of elongated objects are classified as masculine, as seen in the following: 'der Turm' (tower), 'der Obelisk' (obelisk), 'der Stock' (stick), 'der Pfeiler' (column), etc. Although the foregoing examples share no discernible phonetic similarities, in the case of 'der Obelisk' (a borrowed word which was added here), it is possible that masculine gender was assigned on the basis of semantic analogy (der Pfeiler 'column'/der

Obelisk 'column-like shape').

As noted earlier, the motivation for the assignment of a particular gender for nouns under discussion in this section could be either semantic or phonetic, thus leaving the semantic Gestalt criterion open to serious criticism. Köpcke and Zubin, however, have provided a peculiar example of seemingly incorrect gender classification which adds some credibility to the claims made in this section: The example is 'das Streichholz' (match) which, in standard German, is neuter because the gender of its last member is neuter, i. e., 'das Holz' (wood). According to Köpcke and Zubin (1984, p. 35), speakers in the northern region of Germany often spontaneously use the masculine marker 'der', resulting in the overall masculine compound 'der Streichholz' and reflecting its semantic association with elongated, sticklike objects (cf. (3)). This occurrence is particularly illuminating because native speakers of German never err in their use of gender. Variations only occur with respect to a group of nouns which have alternate genders and are listed as such in the lexicon. And yet, the isolated 'Streichholz' example is not sufficient to put the Gestalt criterion on solid footing. It would be of interest to see if additional examples can be discovered in everyday speech situations.

1.3.2.2 Animacy

It has been pointed out previously that, at the basic level, German assigns grammatical gender on the basis of biological sex in the human and animal domains. The offspring of humans and animals, however, are excluded. The difficulty of explaining this curious phenomenon is apparently related to the definition of animacy which is offered by the biological sciences (and often applied to other disciplines): Animacy is defined with the

notions of having life, locomotion or metabolism (cf. Frawley, 1992, p. 89). No such clear delimitation, however, seems possible with respect to the linguistic expression of animacy. Although, at a very general level, probably all languages make some sort of broad distinction between inanimacy and animacy that can be based on the scientific definition of animacy, the coding of animates and inanimates is not neatly demarcated in numerous languages; many either go beyond the life/locomotion/metabolism requirement by including entities which are plainly devoid of life, or they exclude entities that definitely should be included because without a question they have life. German clearly belongs to the second category, as the neuter classification of young humans and young animals indicates. To gain a better understanding of these cases, it seems necessary to apply criteria to the definition of animacy that go beyond the cited requirement for animacy in the biological sciences. Frawley (1992, p. 89) proposes a definition which seems well-suited to explain unusual classifications in many languages, as well as the perplexing situation in German:

The essential criterion for the assignment of linguistic animacy seems to be the *influence* that the entity has over the *execution* or *instantiation* of an event. If an entity is more potent and more influential, it is more likely to be coded as animate. ... The biological criteria of life and locomotion may be relevant, but they are only two among many other properties that go to determine linguistic animacy. Topicality, potency, cultural importance, and discourse salience also determine the relative animacy of an entity. But these all follow the overriding criterion of *influence*.

Before trying to explain the unusual neuter coding of various German nouns in the light of Frawley's definition, however, a brief review of the role of biological gender or sex (often also referred to as "natural gender") seems appropriate.

As remarked previously, grammatical gender and biological gender (sex) often corre-

late in German; this applies to humans as well as animals. Thus, prototypical adult males and females are coded as masculine or feminine, respectively:

Human	Animal
der Mann (man)	der Kater (male cat)
die Frau (woman)	die Katze (female cat; also generic)
der Bruder (brother)	der Puter (male turkey)
die Schwester (sister)	die Pute (female turkey)

For mature humans the congruence between grammatical gender and biological sex is the norm and is especially consistent with respect to kinship terms (*Duden*, 1995, ed. by Drosdowski et al., Vol. 4, p. 196). But even among adult humans, there are exceptions. For example, the neuter noun 'das Weib' constitutes a derogatory term for 'woman' in modern German. In fact, all derogatory terms referring to women are marked neuter. Similarly, the feminine word 'die Memme' is used as a derogatory expression for a cowardly man. However, as pointed out repeatedly, the most conspicuous lack of congruence between grammatical gender and biological sex is found with regard to nouns denoting the young in the human, as well as in the animal domain.

Frawley's definition of animacy, which emphasizes the potency, cultural importance and influence of entities, is of particular relevance in both occurrences of unusual gender assignment, i. e., the neuter coding of the young and of undesirable members of society. Both are considered in turn below.

It is a fact of life that the young have no control over anything. This implies that they cannot exert any degree of influence on the actions of others. They are, in fact, powerless and depend on nurturing adults for survival, both in the physical and economic sense.

Furthermore, their sexual potency is irrelevant for the propagation of the species until they reach a certain point of physical maturity. They also lack cultural importance in that they are not yet able to contribute to the general good of the human community. In short, a more detailed classification of immature human beings serves no pragmatic purpose and is omitted. Similar notions seem to apply to animals. As noted earlier, sexual differentiation is reserved for animals that have economic value, e. g., domesticated animals and wild animals which are hunted.

From a linguistic perspective, another kind of argument could be offered for the use of neuter for immature animates: The lack of sexual and economic salience of the young (cf. Zubin and Köpcke, 1986, pp. 144-145) makes the finer differentiation associated with masculine and feminine gender not only unnecessary, but the categorical neutrality expressed in the neuter gender assignment for the offspring of humans and animals is in keeping with the postulated nondifferentiated coding of superordinates. In sum, from both the socio-pragmatic and linguistic perspectives the neuter marking of underdeveloped animates is not that arbitrary after all.

The notion of influence, or lack thereof, seems to apply to the curious coding of derogatory terms even more compellingly than to the gender allocation of the young. While it is reasonable to assume that there is no malice involved in the latter case, an element of viciousness is certainly present in many pejorative terms. In other words, derogatory expressions deliberately aim at downgrading individuals who do not live up to generally accepted social norms, which often include pervasive stereotypical attitudes. It is, therefore, conceivable that the feminine 'die Memme' is used to refer to a cowardly

male either because females are considered the 'weaker' sex (an automatic insult to most men) or because the cultural standard requires a male to be courageous. Either way, the feminine coding for less than ideal males is much less drastic than the neuter coding of derogatory expressions for females. Males, under any circumstance, are still considered human linguistically; undesirable females are not.

The linguistic consequences seem clear: Processes of pejoration, generally, can and do result in semantic change (cf. Hock, 1991, pp. 301-302). Once this change is set in motion, it can easily lead to permanence in usage; i. e., it can become conventionalized and, in time, can be reflected in grammatical marking. Thus, the masculine/feminine/neuter categorization of humans, which German allows, could be construed as a grammaticalized vehicle of social ranking.

In addition to gender marking, the relation between the grammar of German and social attitudes could also be claimed to be evident in the morphology of the language. For example, Meineke (1996, pp. 349-350) notes that many of the neuter nouns (deverbatives) with the prefix *ge-* have a negative connotation (das Gegröhle 'bawling', das Geschimpfe 'scolding', das Gesindel 'riffraff', etc.). In fact, all examples which Meineke provides are associated with unattractive human behavior or "lesser" social groups, an observation which raises the question of whether the neuter noun class is a linguistic "dumping ground" for everything that is considered as ugly, revolting and, generally, undesirable or unacceptable in the human domain.

Certain features of diminutive forms seem also of interest in this context. The morphological coding of diminutives in German, as noted, is accomplished by means of two

suffixes, i. e., *-chen* and *-lein* (cf. section 1.2.1). Both endings fulfill the same functions: They express the smallness of a physical or abstract entity (das Tellerchen 'small plate', das Geschichtchen 'short story', etc.); they are also employed to express an attitude of affection (das Häuschen 'cute little house', das Liedchen 'cute little song', e.g.). In contrast to the positive connotations just depicted, diminutives serve a third, much less attractive function: "If smallness is ... associated with an attitude of affection, smallness also goes with lack of worth" (Taylor, 1989, p. 146). Could it be that, in the human domain, the use of the diminutive is less harmless than it appears to be? At any rate, it is possible that 'das Mädchen' (girl) came into normal usage not for reasons of affection but for reasons of lesser worth. Thus, the replacement of the feminine noun 'die Maid', which was once used to denote a girl, might not have been accidental. The change of 'Fräulein' (miss, young lady) from the feminine 'die' to the neuter 'das' (ca. 1700; cf. section 1.4) also raises the question of whether the conversion was motivated by morphological leveling or by social reasons.

1.3.2.3 Affect

For considerable time the question of the psychological reality of overt manifestations of language has been a focal point in linguistic inquiry. Zubin and Köpcke pursued the same issue with respect to nominal classification and tried to determine how "speakers of a language go about organizing their knowledge of gender assignment in a language such as German" (Zubin and Köpcke, 1984, p. 43). As discussed in previous sections, they were able to provide empirically based evidence that principles of categorization provide a general basis for gender allocation of German nouns which describe the material world.

In addition to categorization, the two linguists also uncovered numerous morphological, phonological and semantic criteria related to perceptual and animacy salience, singly or in combination, that can account for the gender allocation of a sizable portion of the German nominal lexicon. It has also been pointed out repeatedly that principles of gender assignment are in obvious competition with each other, and that this conflict among gender determining factors in particular is responsible for the occurrence of many exceptions in gender allotment.

Of the various exceptions to the otherwise remarkably reliable assignment rules, several violations of the last member principle are of special significance. As previously discussed, the overall gender of compounds is determined by the gender of its last member. The unusual variation in the gender of the 'Streichholz' (match) example has already been described. It was, however, noted that particularly compounds ending in *-mut* have a strong tendency to violate the last member principle. Because 'der Mut' (courage) is masculine, all compounds with *-mut* as their last member should be masculine. This is not the case. Not only are some *mut*-compounds consistently feminine, several of them show variation between masculine and feminine; i. e., some speakers of German assign to them the masculine article 'der', while others use the feminine article 'die'. In some cases, the same speaker vacillates between 'der' and 'die'. There is, however, a conspicuous absence of neuter (Zubin and Köpcke, 1984, pp. 44-45). Table 7 randomly lists *-mut* compounds (and their approximate English meaning) which exemplify the inconsistency in gender assignment. The examples were elicited from several native speakers. The three cases alternating between masculine and feminine are in bold print.

Table 7

Gender distribution of selected *mut*-compounds

	masc.	fem.	neut.
Hochmut 'arrogance'	x		
Anmut 'grace'		x	
Übermut 'exuberance'	x		
Schwermut 'melancholy'	x	x	
Gleichmut 'equanimity'	x		
Grossmut 'generosity'	x	x	
Sanftmut 'tenderness'	x	x	
Unmut 'bad temper'	x		
Demut 'humility'		x	
Wagemut 'daring'	x		

All *mut*-compounds have affective connotations. Zubin and Köpcke (1984, p. 47) identified the common semantic thread as the reference to emotional states and/or characteristics of certain personality types. Based on theories about personality developed by Jung (1922) and others, the two linguists divided the affective states which appear to be expressed by the *mut*-compounds into two general categories according to the following characteristics (cf. Zubin and Köpcke, 1984, pp. 47-52):

Category A	Category B
aggressive	submissive
rejecting	accepting
remote	accessible
	vulnerable
selfish	altruistic

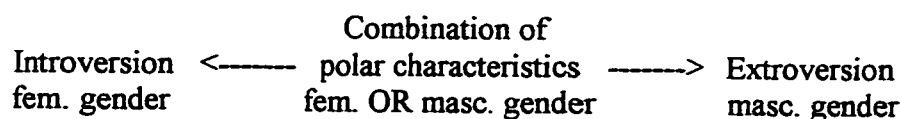
When comparing the above attributes, Zubin and Köpcke (1984, p. 51) concluded that the basic dynamic ... has to do with the locus of control between the self and the outside world. [The characteristics in category A] seem to suggest types of conduct or attitude which are directed toward controlling the outside world or view it as controllable, or which protect the self from outside control. In contrast, [the characteristics in category B] suggest conduct or attitude which place the self under outside

control or view it as controllable, or which open the self to outside influence.

With this definition in mind, the term *extroverted* was applied to all *mut*-compounds whose meaning seems to imply the characteristics in category A, while *mut*-compounds implying the characteristics in category B were termed *introverted*.⁵ Based on the introversion-extroversion polarity, the following hypothesis was formulated (Zubin and Köpcke, 1984, p. 53):

- (i) *Mut*-compounds with primary *fem*-gender assignment will correlate with an empirical measure of *Introversion*.
- (ii) *Mut*-compounds with primary *masc*-gender assignment will correlate with an empirical measure of *Extroversion*.
- (iii) *Mut*-compounds with mixed gender assignment will correlate with neither *Introversion* nor *Extroversion*.

After taking a number of precautionary steps, including preliminary studies aimed at eliminating possible sex-related stereotypical judgments, the results of their thoroughly planned and meticulously executed experiment confirmed the validity of the hypothesis. As illustrated in the sketch below, if a *mut*-compound expresses more introverted feelings, it will tend to be feminine. If a *mut*-compound denotes more extroverted feelings, it will tend to be masculine. *Mut*-compounds which express a combination of the two will tend to have variable gender.



Zubin and Köpcke found a similar introversion-extroversion polarity with respect

to nouns with the suffixes *-nis* and *-sal* and, inadvertently, discovered a group of nouns which express emotional *arousal* (for further detail cf. Zubin and Köpcke, 1984, pp. 63-65). Furthermore, since the compounds discussed so far constitute a very small portion of the affective lexicon, additional words with affective connotations were systematically examined. Again it was found that neuter gender is categorically excluded and that the same tendencies prevail that apply to *mut*-compounds: concepts which express prototypically introverted notions are mostly assigned feminine gender while those having prototypical extroverted connotations are predominantly masculine. Most exceptions can be explained on the basis of morphological or phonetic assignment rules (cf. Zubin and Köpcke, 1984, pp. 62-69). Table 8 lists selected examples of affective nouns which, generally, exhibit the same tendencies in gender assignment as *mut*-compounds.

In sum, the introversion-extroversion polarity does not only hold for *mut*-compounds but appears to be applicable to the entire affective lexicon of modern German.

1.4 Evolution of the German gender system

In any discussion of "gender", the traditional typological label applied to European-type languages, the ultimate question is invariably raised: Where do genders come from? This age-old issue has been addressed since Aristotelian times and continues to be of interest to linguists. A particularly noteworthy contribution to the historical development of "genders" has been made by Greenberg (1978), who outlined the evolutionary stages from demonstrative pronouns to articles.

Although a detailed discussion of traditional theories regarding the origin of

Table 8

Gender assignment of affective nouns
(excluding *mut*-compounds)

		masc.	fem.	neut.
Angst	'anxiety'		x	
Trauer	'sadness'		x	
Sorge	'worry'		x	
Koller	'fit of anger'	x		
Scheu	'shyness'		x	
Ärger	'anger, vexation'	x		
Grimm	'anger'	x		
Wut	'rage'		x	
Gram	'grief, sorrow'	x		
Reue	'remorse'		x	
Trost	'comfort, solace'	x		
Kummer	'worry'	x		
Schmerz	'pain, grief'	x		
Hohn	'scorn'	x		
Qual	'torment'		x	
Hader	'strife'	x		

grammatical gender lies outside the scope of this paper, one of their important tenets needs to be addressed; i. e., most linguists were totally committed to the notion that European genders have a sex-based origin (for a good example cf. Miranda, 1975). Recent findings, however, have prompted a growing number of linguists to give serious consideration to an alternative scenario. One such non-traditional approach by Leiss (1994) is briefly reviewed here because it seeks to eliminate some widely accepted misconceptions regarding German "gender".

First and foremost, Leiss (1994b) seriously questions the notion that "sex-related genders" evolved from an initial opposition of male and female by showing this to be a factual misrepresentation which had at least two rather mundane causes in the not so distant

past:

(1) The term "genus", from which "gender" is derived, originally meant "kind" or "sort" in Latin, as well as in the German translation *Geschlecht* where it was also used to refer to the active voice, the passive form, etc. of the verb (*genus verbi*). Over time, the meaning of *Gemus/Geschlecht* narrowed and during the 18th century came to be identified with "sex". This led to the generally accepted assumption that "sex" must have been the basis of the masculine/feminine distinction found in German (and other modern European languages). The work of such influential 19th century philologists as Jacob Grimm undoubtedly helped to entrench this sex-based approach. For example, Grimm utilized the criteria of small size and alleged passive behavior of women to provide explanations for the feminine gender of nouns which could not be directly equated with sex; e. g., *die Hand* (hand) is feminine because it is smaller and less "active" than the masculine *der Fuss* (foot) (Grimm, 1831, p. 359).

(2) The dominant philosophical and anthropological orientation of the 18th and 19th century helped form an image of women as being totally controlled by their sexuality which, among other things, rendered them helpless and prevented them from logical reasoning (Leiss, 1994b, pp. 294-295). Secondly, Leiss (1994b) points out that various attempts at casting doubt on the alleged sex-based origin of the German articles (e. g., by Brugmann, 1889) by proposing an original bipolar opposition of animate vs. inanimate were unjustly ignored. Her own theory regarding the evolution of articles is incorporated into the following overview of some important diachronic changes at the morphological and syntactic level.

A major characteristic of nouns in Proto-Germanic was a stem type distinction which apparently was associated with at least a bipartite "gender" differentiation, expressing the previously mentioned opposition between inanimate and animate the latter of which was eventually subcategorized. This distinction surfaced in Germanic and, subsequently, in Old High German as the familiar tripartite division into masculine, neuter and feminine (cf. Table 9). In other words, the classification of nouns was established through stem types and suffixes which also regulated case and number. It is crucial to note that the denotation of gender was only *one* of the functions of the stem system and, most importantly, that it played a "minor role, presumably mostly relevant for anaphora at a functional level, e. g., co-indexing relative pronouns to their heads" (Salmons, 1992, p. 83).

Table 9

Dominant stem types and associated gender in Germanic
(Based on Ramat, 1981; Salmons, 1992; W. Schmidt, 1993)

Stem	Gender	Characteristics/Tendencies
-a, -ja, -wa	masc., neut.	remains primary
-ō, -jō, -wō	fem.	mostly abstract; remains primary
-i, -u	masc., neut., fem.	unstable > simplification/shift
-n	masc., neut., fem.	mostly concrete; stable > very productive; attracts other feminine concretes.
-r	masc., fem.	only kinship terms
-iz/-az/-əz	neut.	unstable > neut. -a
?-nt	masculine	very limited; class dies out in OHG; remnants: Feind 'enemy', Freund 'friend'
root stems	masc., fem.	unstable > shift

Table 9 seems to indicate that the Germanic classificatory system was already in considerable flux and was undergoing processes of gender realignment and overall simplification. Furthermore, the (still) close association with morphological elements made it extremely vulnerable to continued attrition at the phonetic level with simultaneous effects on the morphological properties of the stem classes. A few highlights of these processes which are claimed to have given rise to the development of the modern articles (genders) are outlined below (based on W. Schmidt, 1993, pp. 49-93, Wells, 1985, pp. 149-160, and others):

(1) In Proto Indo-European, the primary stress accent had been free. In late Proto-Germanic it became fixed on the initial syllable. This occurrence made final unstressed syllables prime candidates for erosion and eventual loss unless they were protected by following consonants or contained long vowels or diphthongs.

(2) The weakening of the final syllable caused the fusion of case endings which, caused ambiguity. To compensate for this loss of synthetic morphological distinctions, there was a marked increase in the use of analytical constructions with particles, pronouns, articles and prepositions. With respect to the latter, the instrument case-form, for example, was replaced by prepositional constructions with 'durch' (through), 'mit' (with) and 'von' (from, of). This process continues in modern German. For example, there is indication that genitive nominal inflections which have survived to this day, as well as inflected forms of the definite articles, are more and more being replaced by prepositional dative constructions in spoken German. Thus, instead of "des Vaters" (of the father), many speakers use "von dem Vater" (preposition + dative article + uninflected noun)

(personal observation).

(3) The extensive reduction of inflections in medieval apocope (loss of final syllables) wreaked havoc on the entire classificatory system and most of all, according to one recent theory (cf. esp. Philippi, 1997), deprived the language of the crucially important possibility of making a specific/non-specific distinction, which had been the function of the different structural case markings in old Germanic languages (comparable to modern Finnish, in which indefinite noun phrases occur in the genitive while definite noun phrases are marked accusative [cf. Philippi, 1997, p. 65]). Also viewing the definite/indefinite distinction as the decisive motivation for the development of articles, Leiss (1994a, 1994b) goes beyond the tradition of seeking answers only in the nominal paradigm by theorizing that the ultimate cause for the development of articles might be sought in the collapse of the Germanic aspectual system. Citing Russian, a language which did not develop articles, she observes that the perfective choice of the verb has an effect on the definite/indefinite state of the following noun phrase resulting in the alternation between the genitive and accusative case. Pointing out parallels between Germanic, modern Russian and modern German, she concludes that the evolution of articles might be linked to the verbal paradigm which lost its capacity to express notions of (in)definiteness through the morphological decay of the verbal (non-possessive) genitive, a function assumed by articles.⁶ Whether or not this theory will be borne out by further empirical and quantitative support remains to be seen.

Suffice it to say that the language reached a point at which it was imperative to recruit new elements which could assume the referential function of the lost suffixes. Because of

its close association with noun phrases as deictic element, the most readily available candidate was the demonstrative pronoun, "formerly a purely emphatic element severely restricted by context, [which began to spread and was] finally reanalysed as the new definiteness marker within the NP" (Philippi, 1997, p. 65). It is especially noteworthy that this theory makes no reference to the gender marking capacity of articles.

(4) In spite of the monumental complexity involved in the restructuring of the nominal paradigm, the utilization of articles was in force at the time of Luther's Bible translation (1522) as can be observed in the following examples (cited in Wells, 1985, p. 230), which illustrate the emergence of articles (and personal pronouns) as a part of syntactic structure in a time span of approximately 700 years: The quote from Tatian contains neither personal pronouns nor articles. In contrast, the Luther Bible makes use of both. The new forms are in bold print.

OHG Tatian translation (ca. 830):

nidargisatzta mahtige fon sedale...
 down+set+past powerful from throne
 (3rd singular) (pl.noun)

hungerente gifulta guoto
 hungry fill+past good(s)
 (pl. noun) (3rd sing.) (sing. noun)

Luther's New Testament (1522):

Er hat die gewalltigen von **dem** stuel gestossen...
 he has the powerful from the seat pushed
 "he removed the powerful from the seat ..."

Die hungerigen hatt **er** mit guttern erfullet...
 the hungry has he with good(s) filled
 "he gave things to the hungry..."

(5) However, the complete transition from gender marking by case to a method employing separate determiners was beset with an enormous amount of problems. In addition to the frequent omission of articles in the case of abstracta and when reference was made to a class of objects or to a typical member of a class (Ebert et al., 1993, p. 314), there was variation in gender as well as wide-spread gender change. Since the use of articles has essentially been stable since ca. 1700, it is a reasonable assumption that efforts at codification and standardization especially during the 18th and 19th century, along with the introduction of a public school system, played a material role in the stabilization and rigidification of the German gender system. Table 10 provides just a few examples of gender instability and gender change. Affective nouns are starred (*). The reader might also notice that *Fräulein* (miss, young lady) was once feminine!

1.5. Grammaticalization

Language change is generally viewed as a gradual process which can affect all major aspects of a language, i. e., its phonology, syntax and semantics. The general definition of grammaticalization adopted here is that of Heine and Reh (1984, p. 15):

With the term "grammaticalization" we refer essentially to an evolution whereby linguistic units lose in semantic complexity, pragmatic significance, syntactic freedom, and phonetic substance, respectively. This is the case for instance when a lexical item develops into a grammatical marker.

More specifically, Heine and Reh (1984, pp. 16-17) view grammaticalization as several processes which essentially involve the following:

- (1) Phonetic processes [adaptation, erosion, fusion, loss], which change the phonetic substance of linguistic units.

Table 10

Examples of gender variation and gender change
from ca. 1450 to 1800
(Arndt and Brandt, 1983; W. Schmidt, 1993; Ebert et al., 1993)

*angst 'anxiety'	masc.	> fem.	luft 'air'	masc./fem.	> fem.
*list 'slyness'	masc.	> fem.	zît 'time'	fem./neut	> fem.
*pîne 'pain'	masc.	> fem.	wachstum 'growth'	masc./neut	> neut.
*lust 'joy'	masc.	> fem.	scheitel 'top'	masc./fem.	> masc.
*schrecken 'terror'	masc./neut.	> masc.	lohn 'reward'	masc./neut.	> masc.
*demut 'humility'	masc.	> fem.	pacht 'rent'	masc./fem.	> fem.
*wut 'rage'	masc.	> fem.	gift 'present'	masc./fem./neut.	> neut.
frucht 'fruit'	masc.	> fem.	*hochmut 'arrogance'	fem.	> masc.
blume 'flower'	masc.	> fem.	*wankelmut 'fickleness'	fem.	> masc.
lob 'praise'	masc.	> neut.	*zorn 'rage'	neut.	> masc.
segel 'sail'	masc.	> neut.	enkel 'grandchild'	neut.	> masc.
zeug 'material'	masc.	> neut.	mut 'courage'	neut.	> masc.
geld 'money'	masc.	> neut.	honig 'honey'	neut.	> masc.
gewand 'dress'	masc.	> neut.	wange 'cheek'	neut.	> fem.
leben 'life'	masc.	> neut.	fräulein 'miss'	fem.	> neut.

(2) Morphosyntactic processes [permutation, compounding, cliticization, affixation, fossilization], which affect the morphological and/or syntactic status of these units.

(3) Functional processes [desemanticization, expansion, simplification, merger], which affect the meaning or grammatical function of linguistic units.

If one applies the above criteria to the nominal paradigm in German, its developmental course becomes an example of grammaticalization processes par excellence: Phonetic erosion, fusion and/or eventual loss of morphological segments set the stage for permutation (a change in the basic order of linguistic units) and for the redistribution of the functional load of constituents. Desemanticization and simultaneous expansion as obligatory class markers characterized the newly evolving classificatory units (articles) which, in the

course of time, lost much of their deictic import while gaining significance as syntactic elements.

However, the evolution and crystallization of articles as nominal classification devices is only part of the story. With the traditional emphasis on gender (meaning the three articles) as the defining elements in classification, it has been easy to pay little attention to the fact that German has developed a new kind of nominal morphology which fulfills exactly the same functions as the articles; i. e., it classifies certain nouns and does so more categorically than articles. There are no exceptions. The morphemes alluded to are the previously mentioned suffixes *-ung*, *-heit*, *-keit*, *-schaft* (denoting abstracta and always marked with the feminine article *die*), as well as *-chen/-lein* (denoting diminutives which are always coded with the neuter article *das*). Since the relatively recent origin of these elements (ca. 1200) has made them more accessible to research, they provide an excellent opportunity to demonstrate effects of grammaticalization at the lexical and syntactic level, viz. the loss of phonetic substance, which typically accompanies compounding, with parallel desemanticization, analogical leveling and the eventual assumption of a functional, i. e., classificatory role. The development of *-heit/-keit*, to choose one example, clearly illustrates the progression from independent lexical item to (bound) classifier (Table 11).

Of course, one must wonder why a language should develop this kind of seemingly redundant classificatory tool. A plausible explanation is given by Leiss (1994b, p. 284) who, analogous to Philippi (1997), emphasizes the somewhat different role of articles and the above suffixes: While it is the primary function of (definite and indefinite) articles to

Table 11

Developmental stages of the suffix *-heit/keit*
(Based on Doerfert, 1994, pp. 33-35)

1. Indo-Germanic: Adjectival stem **kait* ('light').
2. Germanic: *haidus/heidr/hād/hēd* (masculine noun 'honor, manner, position, kind, characteristic). In West-Germanic *heit* also occurs as second element in composita which initially assume the masculine marking of *heit* but eventually change to the feminine marking of abstracta formed through other productive suffixes.
3. Old High German: *heid/heit* (masculine *or* feminine substantival equivalent of Latin *sexus* and *persona*).
4. Middle High German: *heit* (noun 'manner, quality'; rare; suffixal usage becomes dominant).
5. Standard Modern High German: *-heit* (allomorph *-keit*) is exclusively used as classifying element of abstracta and is so productive that it has begun to replace other suffixes (e. g., *-ə* in *die Schläue* 'cleverness' > *die Schlauheit*).

determine (in)definiteness with the expression of case, number and the so-called feminine, masculine and neuter distinctions as an additional functional load, it is *not* primary for some parts of the lexicon. In addition to Leiss' observation it is also noteworthy that classification by means of suffixes as a supplementary technique, as noted above, surfaced at a relatively late point, perhaps suggesting that either the classificatory power of articles was indeed inadequate for the entire nominal inventory, or that the emergence of additional classification devices was the product of separate developmental paths. Since the significance of suffixes as classificatory tools has steadily increased and insights gained by Leiss and Philippi (cf. above) shed new light on the hidden function of determiners, the question arises as to whether the traditional view of German articles with its single-minded emphasis on their classificatory role within the noun phrase only should

not be reconsidered.

1.6 Brief overview of the gender system in modern German

As illustrated throughout the paper, the gender system of modern German is based on a large amount of different, and yet interrelated, gender-determining criteria. Although the account of these criteria in this paper is far from exhaustive, it is clear that determinants of gender assignment encompass the formal grammatical domain, psychological dimensions, as well as a host of extra-linguistic pressures. Because of this incredible complexity, an overview of current tendencies in gender assignment seems appropriate as the final portion of this paper. This overview briefly reviews the present-day status of principles of gender determination.

It is estimated that approximately 70% of the German nominal lexicon consists of words whose gender is determined by their morphology. This is undoubtedly the result of diachronic processes, some of which have been discussed earlier. Currently, the generation of new expressions through derivational suffixation, in particular, continues to be extremely productive. The same tendency is found in the formation of compound words. Overall, there seems to be an ever increasing number of nouns whose gender is solely established by derivational means, suggesting that speakers are continuously searching for unambiguous means to structure the language. The general reliability of morphological gender coding apparently serves this functional need well in that it establishes certainty in nearly all cases regardless of semantic content. Thus, nouns with affective connotations can be spontaneously formed by adding the suffixes *-ung*, *-heit* and *-keit* to ap-

appropriate adjectives or verbs to yield nouns which are unambiguously feminine. For example, 'traurig' (sad) plus *-keit* results in 'die Traurigkeit' (sadness), an introverted term, while the combination of 'bissig' (sarcastic) and *-keit* yields the extroverted term 'die Bissigkeit' (sarcastic attitude) which is also feminine (cf. Zubin and Köpcke, 1984, pp. 85-86).

Other parts of the nominal lexicon continue to show signs of an ongoing struggle among criteria of gender assignment. Loan words, which are constantly being added to the nominal inventory, are of particular interest for the following reasons (partly based on personal observations):

a) There seems to be no consistent approach to the gender marking of loan words; i. e., in some cases, because of semantic compatibility, speakers simply seem to transfer the gender of a German noun to the borrowed item. In other instances they apply the concept of morphological and/or phonological analogy. Cases in point are 'das T-shirt' which has been assigned the neuter gender of 'das Hemd' (shirt), 'der Bumper' whose masculine marking is probably due to the suffix *-er* (which typically signals masculine gender for inanimate nouns), and 'der Manager' whose masculine gender is most likely based on the principle of animacy.

b) Contrary to some quite optimistic assessments (cf. esp. Gregor, 1983), native speakers do not always agree on the gender of foreign words. Examples are 'der/das Poker' and 'die/das E-mail'. The variation in gender seems to reflect the effect of at least two different strategies which individual speakers employ: The neuter marking 'das' could be the result of categorization; i. e., 'das Poker' and 'das E-mail' are interpreted as

superordinates. The masculine version of 'Poker' could be ascribed to morphological analogy because inanimate nouns ending in *-er*, as noted above, tend to be masculine. Similarly, the feminine marking of 'E-mail' could be explained in terms of lexical analogy because 'die Post' (mail) is feminine.

In sum, on one hand, there appears to be an increased reliance on some well-established formal determinants of gender at the expense of older semantic considerations while, on the other, semantic criteria continue to cause instability in parts of the system. Nonetheless, in spite of ongoing conflicts, realignments, continuous modifications, and many open questions, the German gender system is not arbitrary, although effort is required to uncover the basis of specific instances of gender assignment.

2. Noun classification in Swahili

2.0 Introduction

Swahili, primarily spoken in the coastal regions of East Africa but also found in diverse inland areas, belongs to the large Bantu language family which, possibly more than any other language group, has traditionally been associated with the notion of "noun class system". As has been noted in the preliminary discussion of the diverging terminology employed in labeling classificatory systems, no fundamental distinction between "gender languages" and "noun class languages" will be made in the context of this paper.

There are, however, several problems which one encounters in a discussion of Swahili noun classes which need to be mentioned: First, it is difficult to determine what is meant by "Swahili" because the name either refers to the language of the Islamic portion of the East African population, or it refers to a vast collection of different Swahili dialects. Differences among these dialects can be so pronounced that they inhibit mutual intelligibility (cf. Möhlig, 1995, pp. 41-43). Secondly, although a standard form of Swahili is in the process of emerging, it is not fully established among Swahili-speaking peoples and, additionally, is subject to considerable variation. In fact, Ohly (1985, pp. 79-86) points out that one cannot truly speak of *one* standard form of the language; instead, he recognizes three varieties of standard Swahili which seem to exist side by side. Therefore, data used in this paper may well be based on different so-called "standards" which do not necessarily exhibit identical noun class behavior.

An additional problem concerns the fact that most analyses of African noun class systems do not focus on Swahili but, instead, deal with noun classes in the broader context

of Bantu languages. Consequently, many of the insights into the nature of noun classification in Bantu languages, in general, have been utilized in this paper.

The final problem concerns the number of noun classes in Swahili and Swahili-type languages: There is no consensus as to the number of noun classes. In other words, depending on the view of a particular linguist, a different number of noun classes results from the inclusion or exclusion of 'marginal' classes. Therefore, at the relevant places it will be pointed out which classes are included in the discussion.

2.1 Overview of the Swahili noun class system

Similar to the situation in German, nouns of diverse semantic content are combined in Swahili noun classes. For example, 'kichaa' (rabies), 'kisheti' (cookies), and 'kijikuu' (grandson) are classified in the same noun class (Ochotina, 1988, p. 788) prompting Givón (1971, p. 33) to describe the nominal classification system of Swahili as "inexplicable chaos". However, as was found with respect to German, even inexplicable chaos does reveal some underlying order upon closer scrutiny.

The first attempts at classifying the nominal lexicon of Swahili and Bantu languages in general date back to the work of missionaries during the 19th century who, out of necessity, took an interest in native languages and along with other scholars, proceeded to attempt a description of the languages with which they came into contact. Examples of these pioneering studies are the works by Krapf (1850), Bleek, (1862-1869), Meinhof (1948), Steere (1906) and others. The result of their work was the establishment of a numbered noun class system in Bantu languages. The number of classes typically

ranges from 10 to 20. These traditional classificatory schemes (with minor modifications) have been adopted by later scholars, augmented by others (Ashton, 1944; Loogman, 1965; Gregersen, 1967) and continue to be in use today although some linguists have begun to question their ultimate validity as a classificatory tool (e. g., Zawawi, 1979; Adewole, 1986).

The classification of Swahili nominals is largely based on their morphological make-up; i. e., the typical Swahili noun, like that of any other Bantu language, consists of a stem and one or more prefixes. Often two different prefixes signal a difference between singular and plural (*kiti* 'a wooden stool' vs. *viti* 'wooden stools') and have caused early Bantuists like Bleek and Meinhof to utilize these pairs of prefixes in their classification system by assigning odd numbers to the singular members of a noun class and even numbers to the corresponding plural members of that class. Thus, the examples given above (*kiti/viti*) constitute the singular and plural of the 7/8 class. However, not all classes exhibit this singular/plural distinction; abstract nouns, for example, only occur in the singular because enumeration is irrelevant in their case. Also, certain plural prefixes are shared by some classes, and several prefixes which have been assigned to certain classes can be used to express special connotations. Some of these will be discussed at a later point. Furthermore, prefixes are not categorical; i. e., they can be assigned to different stems resulting in a change of meaning. Thus, the root *ti* in *kiti/viti* 'wooden stool/stools', which is associated with 'wood', changes its meaning to 'tree/trees' when the prefix is changed to *m-/mi-* (*m-ti/miti*) (Corbett, 1991, p. 44).

The summary provided in Table 12 below is a sketch of the generally agreed upon

noun classification found in Swahili, plus common verbal agreements (which will be briefly explained in connection with the notion of 'concord'). To simplify the illustration, various allomorphs for vowel-initial stems, as well as three additional "classes" comprised of prefixes which establish locative demonstratives functioning in many ways like nouns (cf. Welmers, 1973, p. 82) are not included. N denotes morphophonemic variations affecting the beginning of stems:

Table 12

Overview of Swahili noun classes
(Based on Welmers, 1973, and Corbett, 1991)

Class	Typical prefixes	Verbal agreements
1/2	m-/wa-	a-/wa-
3/4	m-/mi-	u-/i-
5/6	Ø~ji-/ma-	li-/ya-
7/8	ki-/vi-	ki-/vi-
9/10	N-/N-	i-/zi-
11/10	u-/N-	u-/zi-
15	ku-	ku-

The verbal agreements contained in Table 12 are only part of a major syntactic phenomenon of Swahili-type languages, namely their extensive grammatical agreement system - or concord. Since concordial relationships constitute a pervasive, complicated system with implications for the entire structure of a sentence, only some highlights focusing on nouns and their modifiers, as well as some basic concordial relations between

nouns and verbs, are illustrated below (cf. See Ashton (1947) for detailed information.

With respect to nominal modifiers, the prefix of a particular noun recurs in such modifying elements as adjectives, native numerals (e. g., tatu 'three') and two interrogatives.

All others (e. g., sita 'six') take non-nominal prefixes or concords, as seen in the following examples from Schadeberg (1984, p. 8). Modifiers are in postnominal position:

Adjective: **m-** toto **m-** zuri
 Pref. a child Pref. nice
 'a nice child'

Numeral: **wa-** toto **wa-** tatu
 Pref.children Pref.three
 'three children'

But: **wa-** toto sita
 Pref.children six
 'six children'

Interrogative: **wa-** toto **wa-** ngapi
 Pref.children Pref.how many
 'how many children'

In addition to agreement between nouns and their modifiers, each finite verb in Swahili obligatorily exhibits agreement with its subject noun in person and number; i. e., the verb carries a prefix marker which in the case of class 2 and classes 7/8 is identical to the prefix of the noun, as can be seen in the following sentences provided by Bokamba (1985, p. 16). The infix *-me* is a tense marker:

Class 2: **wa-** toto **wa-**refu **wa-**meanguka
 Pref.children Ag.tall Ag.Perf.fall
 'the tall children fell/have fallen'

Class 7: **ki-** su **ki-**refu **ki-**meanguka
 Pref. knife Ag.long Ag.Perf.fall
 'the knife fell/has fallen'

Class 8: **vi-su** **vi-refu** **vi-meanguka**
 Pref.knives Ag.long Ag.Perf.fall
 'the long knives fell/have fallen'

This kind of concordial relationship, however, constitutes an 'ideal' situation; i. e., most verbal concord markers do not coincide with the nominal class marker, resulting in the following agreement patterns for classes 1 through 10 (cf. Table 12). Examples are again from Bokamba (1985, p. 16):

Class 1: **m-** toto **m-refu** **a-me-** anguka
 Pref.child Ag.tall Ag.Perf.fall
 'the tall child fell/has fallen'

Class 3: **m-** nazi **m-refu** **u-me-** anguka
 Pref.coconut tree Ag.tall Ag.Perf.fall
 'the tall coconut tree fell/has fallen'

Class 4: **mi-** nazi **mi-refu** **i-me-** anguka
 Pref.coconut trees Ag.tall Ag.Perf.fall
 'the tall coconut trees fell/have fallen'

Class 5: **j-** embe refu **li-me-** anguka
 Pref.hoe long Ag.Perf.fall
 'the long hoe fell/has fallen'

Class 6: **ma-** jembe **ma-refu** **ya-me-** anguka
 Pref. hoes Ag.long Ag.Perf.fall
 'the long hoes fell/have fallen'

Class 9: nyumba **n-** defu **i-me-** anguka
 house Ag.tall Ag.Perf.fall
 'the tall house fell/has fallen'

Class 10: nyumba **n-** defu **m-bili** **zi-me-** anguka
 houses Ag.tall Ag.two Ag.Perf.fall
 'the two tall houses fell/have fallen'

The foregoing examples are typical with respect to all sentences in the third person, singular and plural. Class 1/2 has additional pronominal concords for the first and second

person singular and plural. Their characteristic form is as follows (Bokamba, p . 18):

(mimi) ni-li- kwenda nyumba-ni
 I Ag.Past go home- loc
 'I went home'

(wewe) u- li- kwenda nyumba-ni.
 you/sg. Ag.Past go home- loc
 'you (sg.) went home'

(sisi) tu-li- kwenda nyumba-ni-
 we Ag.past go home- loc
 'we went home'

(nyinyi) m- li- kwenda nyumba-ni
 you/pl. Ag.past go home- loc
 'you (pl.) went home'

Overall, the agreement system establishes unambiguous reference to the person, number, and class of the subject noun and makes the use of independent personal pronouns optional. However, the system of noun/verb agreement is further complicated by the fact that Swahili nouns in normal usage must be subcategorized in accordance with the semantic notion of animacy. Specifically, regardless of the morphological class to which nouns belong, as long as they denote animate entities, they follow the same verbal agreement pattern as nouns denoting humans. The following examples illustrate such an agreement between nouns which for morphological reasons belong to various noun classes and verbal agreements which are characteristic of the 1/2 (*m-/wa-*) class (Nurse and Hinnebusch, 1993, p. 355). The verbal prefix *a-* is the agreement marker for animate:

Class 3/4	mjusi 'lizard'	a-lianguka	'he/it fell down'
	mtume 'apostle'	a-lianguka	"
Class 5/6	dereva 'driver'	a-lianguka	"
	jogoo 'rooster'	a-lianguka	"

Class 7/8	kiziwi 'deaf person'	a-lianguka	"
	kifaru 'rhino'	a-lianguka	"
Class 9/10	rafiki 'friend'	a-lianguka	"
	simba 'lion'	a-lianguka	"

In sum, the "logical NP and the features person, number, animacy and noun class control [verbal agreement] in [Bantu] languages" (Bokamba, 1985, p. 19). This control is further emphasized by agreement marking between verb and object, obligatorily so if the object denotes an animate entity.

There are many other concordial interactions among the various sentential constituents, indicating that the concordial system constitutes the cement which holds sentences together. However, a more detailed illustration goes beyond the intent of this paper.

2.2 Formal assignment rules

The lack of evidence in the relevant literature that phonetic criteria (other than phonological similarities between prefixes and the initial form of loans being incorporated) are significant in noun class assignment makes the overall role of morphology even more salient and has prompted some linguists to posit that the entire noun class system can be sufficiently explained on morphological grounds (e. g., Adewole, 1986, pp. 45-48). Although such a position seems extreme, noun class assignment of many loan words and derivational processes in word formation do lend partial support to such claims. Major kinds of nominal formations accomplished by affixation and the noun classes to which they are assigned are indicated and exemplified below (based on Möhlig, 1995, pp. 73-79; Corbett, 1991, p. 47; Herms, 1989, pp. 738-744); Herms, 1995, pp. 81-88):

- (1) All verbal stems can be nominalized through the addition of the prefix *ku-* (so-called infinitives); they are allocated to noun class 15: *-imba* 'to sing' **kuimba** 'the singing'.
- (2) Double prefixation of the 1/2 class can form nomina agentis:
-lima 'to plow' + **m-** + **ku-** > **mkulima** 'farmer'.
- (3) Other nominals are formed by simply adding the prefix of a particular class to the verb stem: *-oa* 'to marry' > **ndoa** 'marriage'.
- (4) Diminutives are formed by incorporating nouns into the 7/8 *ki-/vi-* class. Depending upon the morphological make-up and/or syllabic complexity of a particular noun, three types of formation can be identified, i. e., preprefixation of *ki-*, substitution of the class prefix with *ki-* or, for nouns belonging to the 7/8 *ki-/vi-* class and others which are monosyllabic and vowel-initial, infixation of *ji-* (also used for the formation of augmentatives, see below) which for polysyllabic words is often combined with *ki-* yielding the double prefix *kiji-*. Examples are *ndege* 'bird' > **kidege** 'small bird'; *njia* 'way' > **kinjia** 'path'; *nyoka* 'snake' > **kijoka** 'tiny snake'; *kikombe* 'cup' > **kijikombe** 'small cup'.
- (5) Augmentatives (5/6 class) are generally formed with the prefix **ji-** in the singular and the double prefix **maji-** in the plural: *mtu/watu* 'human being(s)' > **jitu/majitu** 'giant(s)'; *mji/miji* 'city/cities' > **jiji/majiji** 'large city/cities'. For the many provisions and variations see Herms (1995).
- (6) Abstracta are formed by the prefixation of **u-** and assigned to class 11:

mtoto 'child' > utoto 'childhood'.

In addition to prefixation, many nouns can be formed by suffixation: -pika 'to cook' > mpishi 'cook'; -cheza 'to play' > mchezo 'play', etc.

The significance of morphological criteria in noun class assignment (as well as the various strategies of establishing concordial agreements) is particularly evident in the noun class allocation of loan words which have been incorporated into the language for centuries and continue to be a major source for the growth of the entire Swahili lexicon. According to Zawawi (1979, p. 140), "adoption [of non-Bantu words] is achieved either by appraising the original initial syllable of the non-Bantu word, or by adopting a form for it on the basis of the meaning that is being conveyed." In other words, if a borrowed item begins with a syllabic element that is compatible with existing word-initial morphology, it is incorporated/assimilated into the respective class, as long as it denotes an inanimate entity. For example, the English word 'roundabout' (> from 'keep left') has become 'kiplefiti' (plural 'viplefiti') and consequently belongs to the 7/8 (*ki-/vi-*) class in Swahili. When the initial morphology of the borrowed non-animate items cannot be easily fitted into a particular noun class, the respective loans are usually assigned to classes 9/10 or 5/6. The reason for this choice is again morphological: Nouns in these two classes have no prefix in the singular (cf. Table 12) and, therefore, do not create conflicts between incompatible word beginnings.

Animate non-Bantu nominals beginning with **m-** or **mu-** are adopted without modification; others acquire these prefixes in Swahili. Still others are incorporated by means of retaining or acquiring various initial segments, resulting in diverse noun class allocation.

Zawawi (1979, pp. 121 -127) extensively illustrates the available possibilities with numerous Arabic examples, a few of which are listed below:

Arabic 'mfarše' (mattress) > Swahili 'mfarshe' (mattress);

Arabic 'quuz' (silk) > Swahili 'uzi' (thread)

Arabic 'siima' (landmark, sign) > Swahili 'kisima' (a well)

Arabic 'wecr' (rock) > Swahili 'jiwe' (stone)

Arabic 'faxme' (high rank) > Swahili 'mfalme' (ruler)

Arabic 'anaam' (person) > Swahili 'bwana' (Mr.)

Arabic 'anaam' (person) > Swahili 'nana' (lady)

The adoption of a large number of foreign nominals into the Swahili noun class system has obviously played a tremendously important role in obscuring whatever semantic properties the earlier noun classes might have had. Therefore, the issue of foreign borrowings will be further considered in the discussion of major diachronic influences on the Bantu noun class system (section 2.4).

2.3 Semantic criteria of noun classification

Because of the pervasiveness of morphological elements in the Swahili noun class system itself, as well as in the overall agreement patterns of the language, and because of the lack of indication that the phonetic form of noun stems (i. e., with respect to indigenous vocabulary) are truly decisive, Corbett (1991, p. 47) views noun membership in all classes other than class 1/2 (examined in conjunction with animacy in section 2.3.4) as basically morphologically determined. As the only exceptions he lists augmentatives (part of class 5/6) and diminutives (part of class 7/8). He does concede, however, that

there are some "interesting subregularities ... [which] represent vestiges of an earlier semantic system" (Corbett, 1991, pp. 48-49). Actually, it seems that the presence of semantic properties is more pronounced than Corbett's assessment suggests. There is considerable evidence available indicating that semantic considerations not only had but still have bearing on the assignment of nominals to classes other than class 1/2 and the "exceptions" acknowledged by Corbett. In the following sections, after an overview of semantic concepts which have been identified in the Bantu noun class system, the results of a psycholinguistic experiment and of some recent field work will be examined. Although the findings are certainly subject to dispute and possibly outright disagreement, they open doors to new avenues of inquiry which more fully seek to take into account the seemingly limitless resourcefulness and intricacy of the mechanisms of human language production and processing.

2.3.1 Semantic content of Swahili noun classes

Aside from those linguists who view the noun class system of Bantu languages as a purely formal type of classification, the majority of scholars (e. g., Meinhof, 1948; Ashton, 1947; Givón, 1971; Zawawi, 1979; Herbert, 1985; Herms, 1986; Ochotina, 1988; and others) agree that most noun classes reflect more or less vague semantic notions. Some maintain that all noun classes, especially with respect to core vocabulary, exhibit some association with semantic notions, although the synchronic combination of very different semantic concepts in most classes is, indeed, perplexing. However, some logical explanations are possible. They will be further explored in the discussion of diachronic

processes (section 2.4).

The account below (based on Ochotina, 1988, pp. 786-789) provides a largely functional assessment of semantic content for synchronic Swahili noun classes which is similar to other customary notations found in scholarly writings and Swahili grammars.

Classes 11, 15, and locative classes are omitted.

Class 1/2:

This is the "human" class and can be divided into several semantic subgroups some of which are the following: a) humans (mtu 'human being', mwanamume 'man', mwanamke 'woman', mtoto 'child'); b) kinship terms (mume 'husband', mke 'wife'); c) profession/trade (mkereza 'turner', mwandishi 'author').

Class 3/4:

The most obvious characteristic of nouns in this class is their denotation of trees. Other members of this class are less transparent, but many of them can be interpreted as objects which surround humans and/or relate to economic activities, notably in agriculture and hunting: mtego 'mat', mshale 'arrow', mtego 'trap', 'mbamba' shovel, etc.

Class 5/6:

Nouns in this class express several recognizable semantic notions: a) names of fruits (tunda 'fruit', nyanya 'tomato') and plant parts (jani 'leaf'); b) objects which occur as pairs (bega 'shoulder', jicho 'ear'); c) objects which are roundish/oval (ziwa 'lake', jiwe 'stone'; tumbo 'stomach'); d) some terms for poultry and insects (jogoo 'rooster', jogoo 'centipede'); e) terms for relatives, as well as titles.

Class 7/8:

Nominals in this class essentially refer to things which are primarily man-made (kisu 'knife', chombo 'utensil') and body parts (kichwa 'head', kidole 'finger'). To a lesser degree other semantic categories are also represented: a) diseases (kichaa 'rabies', kipindupindu 'cholera'); b) fruits, terms for plants and parts of plants (ki-danga 'unripe fruit', kiwavi 'stinging nettle', kingune 'small tree'); c) foods made of plants or fruit (kisheti 'pastry', kitobosha 'rice ball with honey'); d) some kinship terms (esp. descending: kilembwe 'great-great-son'); e) spirits (kivuli 'ghost', kinjamkele 'evil spirit of the sea'); f) deverbatives denoting quality or condition (kinamo 'agility' < -inama 'bend, bow', kinyong'onyo 'weakness, tiredness' < -nyong'onya 'to be tired').

Diminutives also belong to this class; they will be discussed in conjunction with 'animacy'.

Class 9/10:

In general, nouns in this class denote wild and domesticated animals and some insects (simba 'lion', mbwa 'dog', mchwa 'termite'), but many other nominal groups with heterogeneous semantic content are also included: a) kinship terms, titles (mama 'mother', kaka 'older brother', rafiki 'friend', bwana 'master'); b) some human body parts (pua 'nose', ndewe 'earlobe', pumu 'lungs'); c) diseases (ndui 'pocks', skeneko 'syphilis'); d) cultural artifacts related to the home, music, foods, drinks, cultivated plants (taa 'lamp', nyumba 'house', ngoma 'drum', nguo 'clothing', lawalawa 'sweets', tembo 'palm wine'). Also included are some abstract nouns (kazi

'work'), geographic terms (kusi 'south') and terms expressing negative qualities of humans (nduli 'cruel person/murderer', ndumu 'brave person').

Zawawi (1979) uses an approach which, in form, differs substantially from Ochotina's. She rejects the traditional use of prefixes as a means of classifying nouns, maintaining that the formal aspect of prefixes has been overly emphasized, thus neglecting their semantic content and giving them secondary status to the stem (cf. Zawawi, 1979, p. 114). Grouping prefixes (or "nominal indicators", as she calls them) according to their meaning, she proposes a system of "ten related signals of meaning" (Zawawi, 1979, p. 115) which represent the three semantic areas of (1) substance, (2) size and (3) number (plurality). More specifically, she views the relationship between prefix and meaning as follows (Zawawi, 1979, pp. 116-117):

(1) *m-*, *u-* and \emptyset :

m- indicates the substance of life for both animals and plants;

u- indicates the substance of abstraction and therefore excludes life;

n- or \emptyset indicates a substance that is not marked for either and therefore may refer to both.

(2) *ki-*, *ba-* and \emptyset or *m*:

ki- indicates a specified size, non-normal and therefore small;

ba- indicates a specified size but large; and

\emptyset which is unspecified may indicate the other size (replaced by a new signal, namely the indicator *m-*).

(3) *wa-*, *mi-*, *vi-* and *ma-*:

wa- specifies nominals which indicate life in only animals.

mi- specifies nominals which indicate life but only plants
and not animals.

vi- pluralizes nominals which are specified for size.

ma- is not marked for any particular substance or size and
therefore may pluralize any nominal.

Zawawi's proposal elegantly establishes a connection between meaning and the morphological form of nominals and approaches a hitherto unsolved phenomenon in a novel way. However, some serious objections have been raised by other linguists. Adewole (1986, pp. 42-43), for example, observes that the three major notions of substance, size, and number

... cannot be exclusively used to mark distinctions in most of the nouns. The nouns *kiti* 'chair', *mtoto* 'child', *gari* 'car', *meza* 'table', *mlango* 'door' belong to five different classes and each of them can be considered in terms of substance, size and number. 'mtoto' has size, is substantial and countable like 'gari', 'kiti' and the other nouns.

For the purposes of this paper, however, it is important that Zawawi's analysis as well as the traditional analyses (exemplified by Ochotina's account) yield similar results from a semantic point of view: Several more or less transparent semantic themes are acknowledged in both approaches. The human domain is obvious, as is the animal and plant world. In addition, there is notable reference to size and shape. Thus, the two semantic concepts explored in this paper, animacy and Gestalt, are rather clearly discernible. The principle of categorization, however, is a different problem.

2.3.2 Categorization

Zawawi (1979) categorizes the nominal lexicon of Swahili by utilizing animacy, size, and number, three semantic parameters which seem universally applicable but, as noted, appear to be too general in that they leave room for too many exceptions and obviously do not capture finer distinctions of nominals. More traditional approaches, including Ochotina's (1988), typically assign identical or quasi-identical semantic concepts to several nominal classes on the basis of morphological and concordial regularities, a practice which does not allow generalizations in terms of such categorizing strategies as postulated, for instance, by Rosch, Berlin, and Kay. For example, the question arises of how one can establish superordinancy relations for entities belonging to one semantic field but distributed among several noun classes. The taxonomic structure of a certain grouping of entities assumes the existence of an all-embracing taxon (unique beginner) which may or may not be expressed linguistically and which is further divided into subcategories which, in turn, include any and all members of those subcategories (Berlin et al., 1973, pp. 214-215). In other words, taxonomic structures are hierarchical and must satisfy two axioms. According to Kay (1971, p. 869),

first, there is exactly one member of T [the set of taxa] which strictly includes every other member. This member is called the unique beginner. [For example], in a taxonomic structure of plants, 'plant' is the unique beginner; it strictly includes every other taxon, such as 'tree,' 'oak,' 'grass,' 'bamboo' etc. ... The second axiom involves the notion 'partition.' A partition is a division of a set into subsets that places each member of the original set in exactly one of the subsets.

While the above requirements can largely be and are met in a language like English, the grammatical constraints on the classification of nouns in other languages make the

reconciliation with a strict taxonomic organization extremely problematic. The difficulty of establishing a clear-cut hierarchical relation *and* trying to fit it into the grammatical context of the classificatory system of a given language is evident in the previously discussed taxonomic organization of German nominals: Regardless of the semantic parameter selected, a rigidly hierarchical approach simply leaves out many entities which for grammatical and other reasons do not fit a particular category. Although the notion of a "limited inventory dilemma" (Zubin and Köpcke, 1986, p. 173; cf. section 1.3.1) does provide a functional and plausible explanation for the recurring inclusions of unexpected terms in parts of a given hierarchy, a similar explanation with respect to Swahili is less appropriate. The noun class system is much more extensive than the tripartite system in German and presumably could more easily accommodate the semantic parameters which, no matter how obliquely, are present in the language. Obviously, the greater number of Swahili noun classes has not added any clarity to the overall system, and for good reasons. Classical categorization either presupposes a thoroughly orderly development of a language, or else the (nearly) total grammatical neutralization of nominal distinctions, as found in synchronic English. Language-internal evolutionary processes, coupled with extensive migratory patterns in the history of Bantu speaking peoples and other language-external forces, did not leave room for order, but instead subjected whatever forms of Bantu were in use historically to extraordinary pressures.

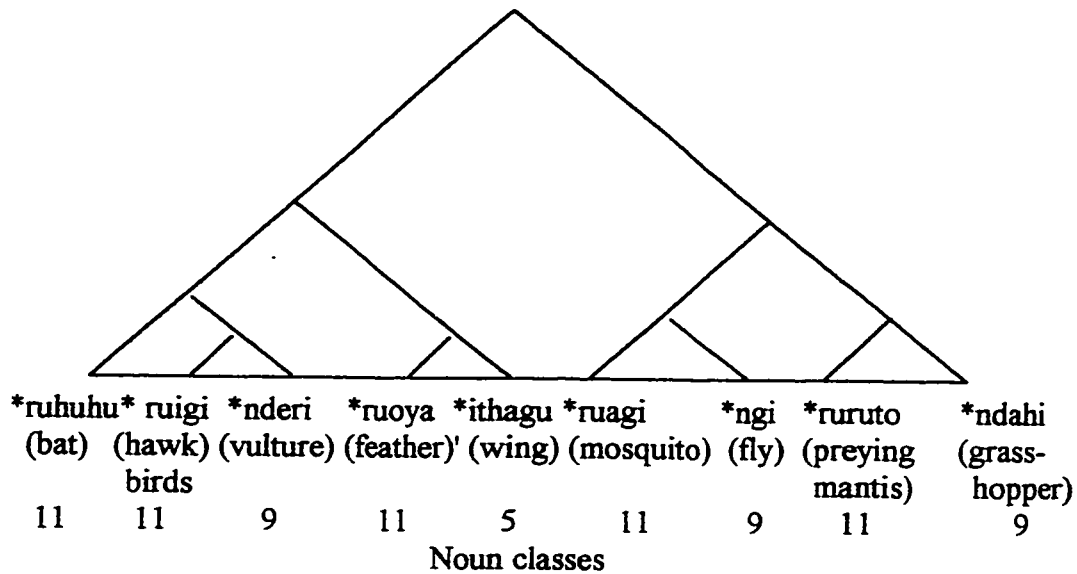
However, since all human beings are engaged in categorizing the material and spiritual world, the question arises of whether or not alternative approaches to categorization, in spite of the seemingly chaotic synchronic organization of nominals, can uncover some

of the strategies of categorization used by speakers of Bantu languages. Some research suggests that this is possible, albeit very difficult. Some positive results can be obtained if *individual* features of nominals of the same semantic domain (but occurring in more than one noun class) are pitted against each other, or if identical or nearly identical semantic concepts occurring in several noun classes are subjected to closer scrutiny. Below, two such attempts, one utilizing extensive field work and the other focusing on psycholinguistic experimentation, are examined.

Intrigued by the conflicting opinions regarding the semantic reality of noun classification in Bantu languages and its uneven distribution among noun categories, Burton and Kirk (1976) hypothesized that noun class allocation of nominals might covertly be based on semantic distinctions among members of different noun classes. To test this assumption they designed an experiment involving nouns of *one* semantic domain ("flying animals") which occur in three noun classes in Kikuyu (Kuyu), one of the Bantu languages spoken in Kenya. In order to avoid the common bias of interpreting linguistic phenomena of African languages through 'western eyes', they administered a triadic test to native speakers of Kikuyu. The test results seemed to indicate that noun class is not of primary importance within the hierarchical organization of concepts where nouns within the same noun class appear in contrastive sets, but that it *is* present in small contrasting sets of features, as illustrated in the diagram below.

The diagram reveals several contrasts. The broadest distinction is made between larger creatures (bat, birds), including their parts (feather, wing), and insects. Insects are distinguished by size. Bat is in contrast with birds, and both, as a whole, are in contrast

Hierarchical clustering of flying animal data
(Burton and Kirk, 1976, p. 165; slightly modified)



*denotes terminal categories

with parts. Members of class 11 are evenly distributed across the terminal categories (starred in the diagram). Since it was felt, however, that the diagram, although consistent with a terminal distinction according to noun class, did not sufficiently validate the initial hypothesis that allocation was done covertly on the basis of noun class membership, a further triadic test was devised in order to examine whether noun class allocation is based on subsidiary semantic criteria, i. e., minimal contrasts (cf. Burton and Kirk, 1976, p. 165). In this second test noun class was pitted against size, phylogeny, and a combination of size and phylogeny. The results are summarized below (based on Burton and Kirk, 1976, pp. 171-172). The criteria which informants used in their judgements are given in percentages:

1. Large insects vs. small insects

Noun class	size	other
38%	44%	18%

2. Large birds vs. large insects

Noun class	phylogeny	other
37%	54%	9%

3. Large birds vs. small insects

Noun class	phylogeny & size	other
27%	50%	23%

Although the choice based on noun class drops to 27% in 3, for which is no longer minimal contrast of size and phylogeny, overall Burton and Kirk determined the statistical validity of the triad choices according to which a substantial percentage of the choices were in keeping with noun class distinction (for detail, cf. Burton and Kirk, 1976, p.170). The data also seemed to support the second hypothesis; i. e., the effect of noun class on the informants' choices is subordinate to the criteria of size and phylogeny.

Therefore, Burton and Kirk (1976, p. 173) concluded:

Using a hierarchical clustering procedure, we find that the primary distinctions to which people attend (size and phylogeny) are independent of noun class. By doing an additional evaluation, however, involving examination of minimal contrast sets, we demonstrate that noun class has a statistically significant effect on triads choices when other contrasts are controlled. We conclude that Kikuyu respondents treat noun class as a tertiary feature when doing semantic classification.

Although the notion that noun classes are generally treated as a *tertiary* feature by speakers of Bantu most likely constitutes an overgeneralization, there can be little doubt that categorization is psychologically real for these speakers. Of particular interest is the significance of the perceptual property of overall size, which will be considered further at

a later point. Also, the findings undoubtedly establish a link between the classification of entities and the noun class system, but at the same time underscore the opaqueness of this relation. In addition, they seem to indicate that speakers of a language are not only able to but do, in fact, react to a host of individual features of entities, following a prototypical model of classification which, on one hand, might account for variations in categorization among individual speakers and/or groups of speakers and, on the other, allows speakers to adjust to the characteristics of their environment and to changes in this environment. Similar conclusions can be drawn from very recent field work in various East African regions which focused on the organization of ethnobotanic taxa among speakers of Swahili.

The significance of folk taxonomies in categorizing processes has been discussed previously with respect to English and German. It has been shown that at least three levels of categorization can be established, as seen in the broad division of English nouns into superordinate, basic level, and subordinate terms. However, as noted earlier, a strict taxonomic interpretation of the nominal lexicon in German is problematic. And yet, within limits, speakers of German employ particularly detailed categorization criteria in existentially important domains. The animal and plant kingdom are two conspicuous examples. Swahili is no exception to this possibly universal tendency. Leaving noun class membership aside for the moment, entries in standard Swahili dictionaries suggest that the animal and plant world of the pastoral Swahili-speaking people has found detailed linguistic expression at least partly in line with the categorization principles employed in English and German. However, since Swahili, as indicated earlier, is spoken in a vast area character-

ized by different habitats, and apparently several standards are emerging, the type of categorization that can be deduced from entries in these standard Swahili dictionaries most likely is not an embracing reflection of actual language use. Nevertheless, such entries sufficiently validate the general applicability of the categorization concept. Table 13 illustrates the ethno-zoological taxonomy of Swahili which Heine and Legère (1995) believe to be suggested in the *Kamusi ya Kiswahili Sanifu* (Dictionary of Standard Swahili). It consists of four levels: The most abstract, most inclusive term 'kiumbe' (creature, being) can be interpreted as a kind of unique beginner in the sense of Berlin, Breedlove and Raven (1973, 1974), the second level (life forms) is similar to Rosch's notion of superordinates, and the third level (generics) is comparable to the generic/basic level category. The fourth level, not included in Table 13, is typically comprised of generic terms plus attributive modifiers.

An important observation can be made with respect to Table 13: Plants are conspicuously absent, suggesting that they constitute a discrete conceptual life form which is organized in a separate ethnobotanic taxonomy. Entries in the *Kamusi* (cf. Table 14) support this assumption.

By specifically gathering data pertaining to the classification of plants among various Swahili-speaking groups from diverse geographical regions, Heine and Legère were able to validate the basic divisions found in the *Kamusi*. Furthermore, they succeeded in linking the general principles of categorization for plants to noun class membership; i. e., although obscured in many ways, underlying principles of categorization are reflected in

Table 13

Ethno-zoological taxonomy of Swahili according to *Kamusi*
 (Source: Heine et al., 1995, p. 17; translations added)

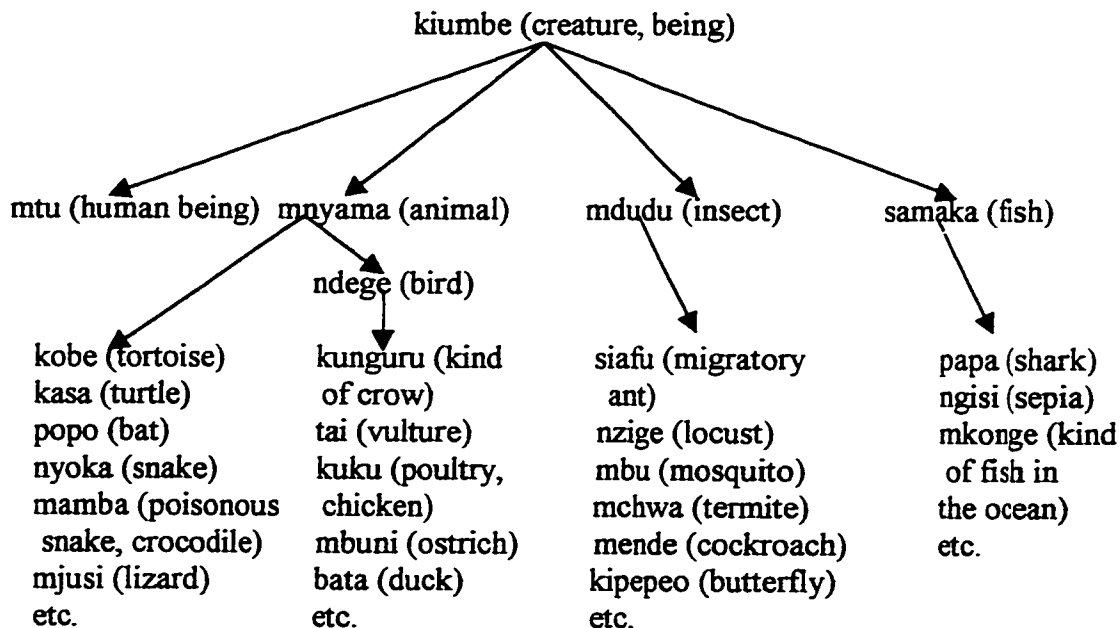
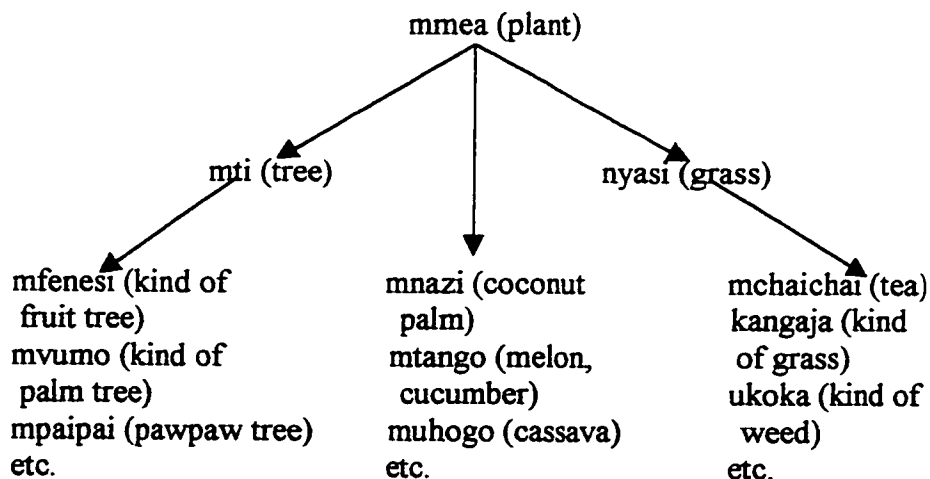


Table 14

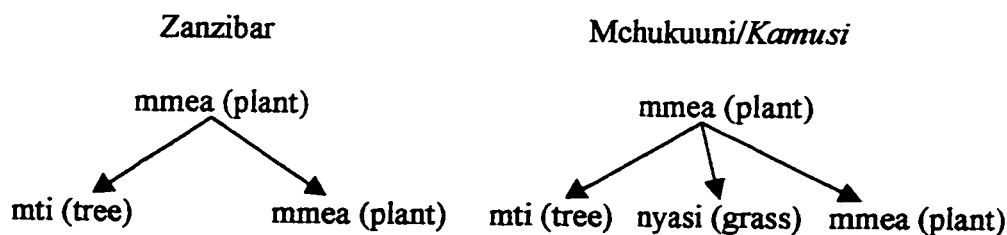
Swahili ethnobotanic taxonomy according to the *Kamusi*
 (Source: Heine and Legère, 1995, p. 25; translations/explanations added)



the synchronic allocation of the relevant nominals to particular noun classes. The major results of the field work by Heine and Legère in terms of the categorization of plants and its implications for the noun class system are outlined below.

(1) The classification of 'mmea' (plant) is least ambiguous: It is the most abstract, most inclusive and least specified taxon for all speakers and thus represents a superordinate (in the sense of 'unique beginner').

(2) At the next lower level, speakers of different areas seem to employ two different strategies in categorization. In the Zanzibar region, for example, only 'mti' (tree) is contrasted with 'mmea' (plant). All other plants are included in 'mmea', which means that 'mmea' is both a unique beginner and major life form. In other areas, the classification of plants is more in keeping with that found in the *Kamusi* (cf. Table 14): Two major life forms are in contrast with 'mmea', namely 'mti' (tree) and 'nyasi' (grass), constituting two perceptual and possibly functional extremes, each having subsets of its own. All other plants are immediately included in 'mmea' (plant), again illustrating its dual nature:



But Heine and Legère (1995) also found indications that the word 'nyasi' (grass) is more inclusive in the Mchukuuni data than in the official *Kamusi* version and should be more adequately translated as 'small and/or weak plants' because many Mchukuuni informants include numerous non-grassy plants (all herbs and most creepers) in 'nyasi'

(cf. Heine and Legère, p. 25). The foregoing seems to imply that there is no overall clear-cut distinction between the level of superordinates and that of basic terms/major life forms. Rather, the classification is fluid, possibly reflecting the different needs and priorities of different peoples occupying different regions with different habitats. The apparent flexibility in categorical membership has prompted Heine and Legère to conclude, analogous to the findings of Burton and Kirk, that a prototype model of description of ethnozoological and ethnobotanical taxa in Swahili is preferable to other types of categorization; their reasons, shared by others (cf. Taylor, 1989, pp. 51-55, for example) are convincing (Heine and Legère, p. 22):

- (a) Not every member is equally representative of its category.
- (b) Prototypical members share a maximum of attributes with other members of the same category and a minimum with members of contrasting categories.
- (c) The structure of categories takes the form of a set of clustered and overlapping attributes.
- (d) Categories are blurred at the edges.

All of the above leaves no doubt that speakers of Swahili categorize the world around them, albeit in a way that is extremely flexible and "during the course of time ... is continually adjusted to fit the changing needs of a given culture" (Györi, 1996, p. 177) and its individual members, i. e., "different peoples ... may conceptualize similar experience in alternate ways due to its different role in their lives" (Györi, 1996, p. 179). How, then, is this flexibility reflected in the noun class system? Does it help to explain membership of ethnobotanical taxa to more than one noun class? Utilizing the results of a separate but related study by Ingo Heine (n. a.), as well as the findings of their own survey, Heine and

Legère were, indeed, able to show that there seems to be a link between several noun classes and the lexical categorization of botanical taxa.

In the traditional account of semantic concepts, plants are represented in classes 3/4, 5/6, 7/8, and 9/10. When plant terms are subdivided into the customary categories of tree/shrub, climber, herb/weed and grass (cf. Brown, 1984), interesting preferences regarding noun class membership emerge. They are illustrated in Table 15:

Table 15

The relative frequency of occurrence of life forms according to noun classes in Swahili according to Ingo Heine (1989 n. a.). In percentages. Cited in Heine and Legère (1995, p. 47).

Noun class	TREE/SHRUB	LIANA/CLIMBER	HERB/WEED	GRASS	TOTAL
3/4 (<i>m-/mi-</i>)	71.3	5.4	20.8	2.5	100
5/6 (<i>ma-</i>)	18.9	5.2	62.1	13.8	100
7/8 (<i>ki-/vi-</i>)	23.1	0	74.3	2.6	100
9/10 (<i>N-/N-</i>)	55.5	0	33.3	11.1	100
11 (<i>u-</i>)	18.8	6.3	31.2	43.7	100

Several features in Table 15 stand out: a) Trees and shrubs are most prominently associated with class 3/4 and class 9/10, indicating that the traditionally used label 'tree class' (3/4) was certainly justified; i. e., terms for the prototypical tree can be *expected* to belong to the 3/4 class. Herbs and weeds b), by far, outrank other plant forms in classes 5/6 and 7/8, while c) the grass and herb/weed categories have the strongest affiliation with class 11. With respect to their own survey, Heine and Legère arrived at similar observa-

tions. Their data indicate that the life form 'mti' (tree) always belongs to class 3/4 and grass names are most strongly associated with class 11, while other plants exhibit a more varied behavior in terms of noun class membership (Heine and Legère, 1995, pp. 48-50).

Although the foregoing observations constitute generalizations, i. e., they indicate tendencies which leave room for many exceptions, there can be no question that Swahili speakers utilize finely tuned processes of categorization which most likely cannot be captured by any grammar because they, at least partly, constitute cases of "idiosyncratic adaptation of the conceptualizers to their environment" (Györi, 1996, p. 179).

2.3.3 Gestalt

Throughout the discussion of noun classification in Swahili, several semantic determinants concerning the overall perceptual form of entities with the criterion of size as a dominant feature have recurred. This fact, as noted earlier in the brief account of morphological determinants of noun class membership, is rather clearly reflected in the morphology of Swahili. Beyond morphological considerations, however, it is noteworthy that the dimension of size seems most prominently associated with the meaning of nominals in the 7/8 (*ki-/vi-*) class. Thus, the size of an object is typically expressed by one of several prefixes: *ki-* (plural */vi-*) establishes the diminutive form; *m-/ba*, or \emptyset indicates augmentatives.⁷

According to Zawawi (1979), *ki-* denotes an entity which deviates from the norm by being smaller than the expected average. By using no prefix (\emptyset), speakers express that an object is of normal size or large (examples 1-4). In the latter case, to emphasize size or indicate a size other than the 'norm', speakers will use the *m-* prefix or a different type of

concordial agreement (examples 7-8). Finally, the addition of *ba-* or its substitution of *m-* indicates extra largeness (examples 9-12)(Zawawi, 1979, pp. 111-112):

- | | |
|-------------------------------------|--------------------------------|
| (1) toto > kitoto | small child, childlike |
| (2) shamba > kishamba | small plantation, country-like |
| (3) mtoto | child, normal size |
| (4) ɔtoto | large child |
| (5) kitabū | book, normal size |
| (6) ɔtabu | large book |
| (7) mshamba huu | this large plantation |
| (8) mshamba huyu | this country-like person |
| (9) ɔsanduku | box, normal size |
| (10) msanduku | large box |
| (11) bamsanduku | very large box |
| (12) basanduku | very large box |

There is also indication that size nuances are indirectly expressed in words forming semantic fields. Although the delimitation appears difficult, Herms (1995, p. 84) cites an interesting example: *dudu* 'insect', *mdudu* 'parasite', *kidudu* 'microbe', *kijidudu* 'virus'.

Depending on the personal preferences of individual and regional speakers, the influence of the size dimension is also detectable in categorization schemes where it is not expressed morphologically but in the assignment of entities to different life forms. Thus, Heine and Legère discovered that in two of their surveys the size of botanic entities caused a number of speakers to allocate a plant either to 'mti' (tree) or 'mmea' (plant). Ap-

parently one of the determinants of 'mti' membership is height of more than six feet (Heine and Legère, 1995, p. 35). Also, lexical choices seem to be partly determined by the size of an object; i. e., speakers in at least one region near Zanzibar, where no generic term for 'grass' occurs, use different lexemes for different kinds of grasses with size (short or tall) as one major distinguishing feature (Heine and Legère, 1995, p. 35).

Another Gestalt criterion which seems to serve as a no longer very transparent means of distinction in present-day Swahili is that of shape. For example, Ochotina (1988, pp. 786-787) points out that, in spite of its overall heterogeneous content, the 5/6 class contains many terms for objects in the natural world as well as for implements used in daily activities which are rounded or oval: ziwa 'lake', jiwe 'stone', jembe 'hoe/shovel'.

There is one additional Gestalt aspect worth mentioning because it reveals the intricate relationship of physical form, function, and linguistic expression, viz. the consistency of entities which Frawley (1992) includes in his description of physical properties of entities. Heine and Legère (1995, pp. 26-27) observed that stem structure was one of the parameters for allocating a plant either to the 'mti' (tree) or 'mmea' (plant) category, a decision which, as previously indicated, does have potential bearing on noun class assignment. The rationale on which speakers base their decision is most intriguing: If the consistency of the stem structure permits its use as firewood, the plant is deemed to be a tree; otherwise, it is just a plant.⁸

2.3.4 Animacy

As mentioned on several previous occasions, membership of nouns in class 1/2 is a

clear indication of the semantic content of animacy. The 1/2 class contains almost exclusively animate beings which belong to the human domain. Humans, however, are not distinguished by biological sex. The few non-human animates in this class include the terms for 'animal' (mnyama) and 'mdudu' (insect), hinting at a connection with the 9/10 class which predominantly contains nouns denoting animals. Thus, Swahili makes a broad distinction between human and animal on one hand and between animate and inanimate on the other, exemplifying the general hierarchical organization suggested by Comrie (1989, p. 185) who finds that languages typically encode entities in the order human > animal > inanimate.

The situation in Swahili, however, is not nearly as straightforward as the above comments suggest; i. e., being human does not guarantee assignment to the 'human' 1/2 class. Terms for humans are also represented in classes 3/4, 5/6, 7/8 and 9/10. Reminiscent of the neuter designation of certain humans in German, Swahili apparently utilizes noun class allocation as a linguistic means to express degrees of familiarity and humanness as well as physical size. In this context, the 7/8 noun class is of particular interest and is more fully examined below.

Generally, all terms denoting humans can assume membership in the 7/8 class for the simple purpose of expressing diminished physical size (examples are from Herms, 1986, p. 87):

- | | |
|----------------------|--------------------------|
| kitoto: baby | (from mtoto 'child') |
| kijity: dwarf | (from mtu 'human being') |
| kizee: old man/woman | (from mzee 'old one') |

Another determinant for membership in the 7/8 noun class appears to be social interaction since the respective nominals typically refer to titles and certain kinship terms. Especially the latter seems to be finely differentiated, suggesting that relationships within the family once were of special importance and were, therefore, subtly distinguished. Although a mixture of criteria is apparently at work, one property expressed through membership in the 7/8 class seems to be the special feature of the direction of generation. Thus, Ochotina (1989, p. 788) observes that consanguinity is not sufficient to assign a term to the human 1/2 noun class. Rather, kinship terms denoting descendancy and distance or ascendancy and distance are allocated to the 7/8 class (kijukuu 'great-grandson', kilembwe 'great-great-grandson').

The semantic motivation for the 7/8 noun class membership of many other nouns which refer to humans is quite obvious: As illustrated in the examples below (Ochotina, 1989, p. 787; Wienold, 1989, p. 94), they express less desirable attributes of humanhood:

kibarua: day-laborer (low social status)

kijana: young person, teen (young age; lack of potency/influence)

kijakazi: female slave (lack of potency/influence)

kiwete: lame person (physical defect)

kilema: cripple (physical defect)

kitungale: cunning person (psychological defect)

kigeugeu: unstable person (psychological defect)

It is also of interest to note that in cases of pejorization Swahili speakers do not use class 1/2, human concordial patterns (Herms, 1986, p. 88), a practice which earlier was

pointed out as a special feature of Swahili nominal subcategorization.⁹

In the discussion of German it was noted that there seems to be a connection between size, age, and relative worth which is reflected in the grammar of the language. In part, the situation in Swahili is similar. Thus, terms for young and/or small animals (kiduku 'small antelope', kimatu 'gazelle', etc.) are also included in the 7/8 class. Cited in Herms (1986, p. 88), Gromova/Federowa (n. a.) maintain that the inclusion of young animals and young humans in the 7/8 class is motivated by their lack of biological salience, i. e., their sexual neutrality for purposes of propagation and their inability to act autonomously, in short, their lack of influence (for similar arguments with respect to German, cf. section 1.3.2.2).

Finally, again analogous to German, the more appealing aspect of endearment is expressed through diminutive forms: 'imwana' for girl (from 'mwana' meaning 'child') or 'kisura kipya' (a new pretty girl) (Herms, 1995, p. 82).

In sum, humans as well as some other nonhuman animates who, for one reason or another, deviate from the norm, are excluded from linguistic membership in the primary noun classes serving their classification and are so "marked" in the grammar. Other essentially cultural considerations, as explained below, are reflected in the unexpected noun class assignment of nominals denoting certain animals.

Traditionally class 9/10 has been termed the "animal class" because the majority of nouns referring to animals are found here. However, there are some notable exceptions; i. e., a sizable number of animal terms belong to the 3/4 class, the primary function of which is the denotation of trees and plants. Dammann (1964) draws some interesting

conclusions bearing on this peculiar class assignment, which rest on the observation that the 3/4 class also contains expressions related to the spiritual world and its interaction with the human/animal domain.

In a comparison of several Bantu languages, including Swahili, Dammann observed that allocation to the 3/4 class often concerns animals that have magical and/or religious significance in traditional African cultures. A variety of species are included in Dammann's account: Insects, snakes, birds, wild and domesticated animals, etc. Some of these animates are apparently viewed as having special powers and are considered harbingers of either ominous events or of good fortune. One example is the owl (Swahili 'mtiti') whose cawing is often interpreted as an announcement of death, while a particular kind of crab signals luck and prosperity (Dammann, 1964, p. 238). Also, because some animals are believed to be endowed with healing powers, their parts are utilized in the preparation of medicines. Several domesticated animals have special significance because traditionally they were used in sacrificial ceremonies. Chickens and sheep belong to this group (Dammann, 1964, p. 241).

Summarizing, the allocation of terms for at least some creatures to the 3/4 rather than the 9/10 noun class does not appear to be accidental or arbitrary. In fact, Dammann (1964, *passim*) lists many examples from numerous African languages which illustrate that special linguistic markings of certain animals is deeply rooted in the ancient belief systems of African peoples. These systems reflect a world view in which power carriers are not limited to the human domain but encompass all natural phenomena. In the subsequent discussion of Vietnamese, Dyrbal, and especially Ojibwa, it will be shown that the

interpretation of the universe in terms of power relations provides a significant key to an understanding of linguistic structure.

2.4 Evolution of Bantu noun classes

In spite of the fact that reflexes of the semantic categorization of the nominal lexicon of modern Swahili can be detected, Givón's observation that "the great bulk of non-human, non-derived concrete nouns in the Bantu lexicon appear to be distributed all over the noun class system in inexplicable chaos" (Givón, 1971, p. 33) still remains a succinct description of the current state of affairs. Recognizing, however, that "'syntactic' or 'morphological' classifications of the noun universe do not arise out of sheer caprice or aesthetic inventiveness" (Givón, 1971, pp. 34-35), Givón shares the belief with others that the Bantu noun class system once must have had a semantic base which somehow fell apart or perhaps remains invisible to those with a different world view. Therefore, together with two proposals on the semantic make-up of an early Bantu noun class system, the following section addresses the question of whether information gathered with respect to diachronic processes can shed some light on the "inexplicable chaos" of present-day Swahili noun classification. Because inquiries into the historical development of African noun class systems have focused on Bantu languages in general, much of the following will not apply just to Swahili but to other Bantu languages as well.

Although no longer operative in any modern Bantu language, 23 noun class prefixes have been reconstructed for Proto-Bantu (for detail, cf. Herbert, 1985, p. 175). With respect to the semantic content of these classes two proposals are briefly reviewed below.

Earlier, reference was made to 'size' as one important determinant of noun class

membership. There is diachronic evidence that 'shape' might have played a similarly significant role. Thus, Denny and Creider (1986), who examined reconstructed Proto-Bantu terms of (largely) concrete nouns, arrived at the conclusion that "the bulk of the noun prefixes were associated with configurational or shape meanings" (Denny and Creider, 1986, p. 217). By grouping nouns into two major categories (count vs. mass nouns) and subdividing the former into nominals denoting configuration and kinds, they accounted for the Proto-Bantu noun class system as shown in Table 16.

The account of semantic criteria in Table 16 is certainly plausible, but intuitively it appears to be too rigid and clear-cut. In other words, languages cannot be assumed to be that orderly at any point in their development because they are the reflection of living organisms and, consequently, are subject to constant change and are never free of (at times considerable) inconsistencies. Therefore, the Denny/Creider model is perhaps best understood as an idealized representation of the semantic distinctions encoded in the Proto-Bantu system. Nonetheless, its significance lies in its recognition of the *semantic* base of Bantu noun classification.

A similar but more general approach is used by Givón (1971). He hypothesizes that "Bantu had a *non-anthropocentric, n-nary, non-hierarchical* multigender system" (Givón, 1971, p. 37) based on the following semantic features:

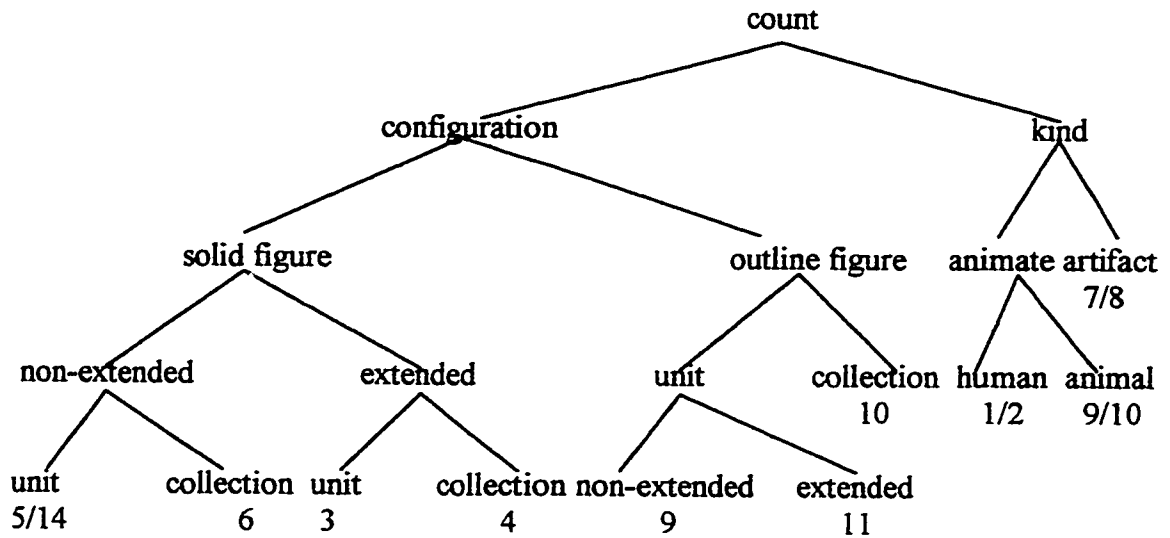
animate	paired body parts
plant	mass
small objects	liquid
elongated objects	abstract nominalization
fruits	other inanimates

Although the previous discussion of the multi-faceted make-up of the Swahili

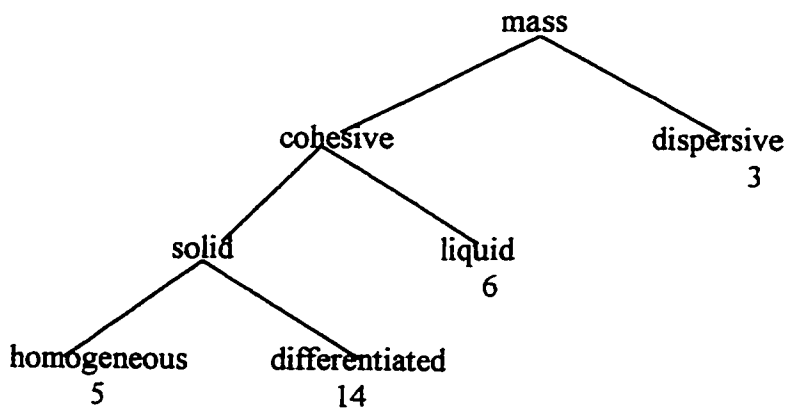
Table 16

Proto-Bantu noun class semantics
 (Source: Denny and Creider, 1986, p. 219; drawings omitted)

For count nouns:



For mass nouns:



synchronic system indicates that additional properties probably need to be included in Givón's account while others could be consolidated, his list of semantic features, no mat-

ter how minimally and/or inconsistently reflected in modern Bantu languages, underscores Denny and Creider's observation that Proto-Bantu in all probability possessed a semantically rich noun class system. Assuming that Denny and Creider and Givón are correct, the question arises if it is possible to trace subsequent developments of this system which in the course of time must have undergone tremendous changes as it moved away from its semantic origins. Not too long ago, Heine and Reh (1984, p. 90) were not very optimistic, believing that the lack of tangible information on the origin of the Bantu prefixal and concordial system of classification and its subsequent development makes it virtually impossible to trace the steps leading to the current system:

Our description of processes is based on cases where the origin of grammatical elements is "transparent", i. e. where the lexical source of such elements can be reconstructed. ... Especially in Africa, where there are hardly any earlier written records and where diachronic linguistics is still in a very elementary stage, most of the morphological structures one is faced with have to be classified as "non-transparent"; we know virtually nothing about their diachronic behavior. ... Although detailed reconstructions of the Bantu noun class systems and verbal derivative extensions exist, their origin is largely unknown.

However, a different view held by Herbert (1985) at approximately the same time quite accurately depicts the more promising results of recent research: "The actual downfall of the Proto-Bantu gender system was the result of a *complex of factors, pulling on the system in various directions*, which together precipitated the triumph of grammatical/lexical gender over natural gender" (Herbert, 1985, p. 178, emphasis added). Some of these factors have been identified. As previously speculated, they concern language-internal developments of phonological, morphological, and semantic attrition, as well as language-external influences, notably language contact. The following highlights, unless indicated otherwise, are based on Zawawi (1979, esp. pp. 121-127), Herbert (1985, pp.

179-184) and Nurse and Hinnebusch (1993, pp. 308-360).

2.4.1 Phonological factors

Erosion of phonological substance paved the way for the decrease in the number of noun classes. Thus, the merger of phonologically similar noun class markers, accompanied by simultaneous morphological and semantic merger, has been reconstructed for many of the Swahili-type languages. A clear example is the once active class 12 (*ka-*), whose role was to denote entities of very small size. Nouns belonging to this class have been combined with the 7/8 (*ki-/vi-*) class, now the only class denoting diminished size as class 12 has vanished completely. In addition to the semantic and phonological similarity of the two classes which facilitated their merger, a partially pragmatic explanation can also be offered: The need for expressing differences in the degree of smallness implied by *ka-* and *ki-* can be expressed in other ways. Thus, reduplication and especially the use of intensifiers or adjectives are becoming general tendencies. An example is 'this big stick', which is expressed by combination of noun + demonstrative + adjective: *fimbo hili kubwa* (from Herms, 1995, p. 87).

The collapse of classes 11 and 14 was also caused by phonological changes which led to partial overlapping with the 3/4 class, resulting in semantic confusion because of the very different semantic content of the two classes (thin, elongated objects in class 11 and abstracta in class 14). This fact, along with other considerations, apparently hastened their removal from class 11 and reassignment to other classes, notably class 9/10 which, in turn, had some of its nouns reassigned to class 3/4. Some of the old class 11 words,

however, did not change classes, a circumstance which has produced the co-occurrence of some nouns in three different classes, e. g., the term for 'machete': upanga (old class 11), p^hanga (new class 9/10) and mu-panga (new class 3/4).

2.4.2 Recategorization

The practice of recategorization, i. e., the transfer from one class to another for the purpose of expressing special connotations, in general, while underscoring the semantic base of classificatory systems, is also bound to threaten the semantic integrity of such systems. Swahili is no exception. Thus, as noted earlier in the overview of concordial patterns, human animates (with the exception of pejorative usage) regardless of their morphologically determined class membership, follow the agreement patterns of the "human" 1/2 class. This principle is also extended to the personification of animal names in folk tales. This disharmony between form and meaning adds an element of instability to a system and opens the door to other kinds of reallocation which, in turn, further weaken the harmony of the system. The peculiar 9/10 class membership of many nouns referring to humans could well have been one of the effects of this instability. Thus, it is claimed that an extremely large number of 'human' loan words from Arabic became too much of a burden for the 1/2 class and that this "overload" caused the transfer of numerous expressions referring to humans to the 9/10 class, although their obvious human reference required that they be recognized through agreement with class 1/2 concordial patterns.¹⁰ Furthermore, it is argued that assignment of terms denoting humans to class 9/10 seemed to be a logical choice since, traditionally, it was composed of nearly all terms for animals with the feature [+animate], needing only the neutralization of the value [+hu-

man] to establish the link with the 1/2 class. This kind of argument might also hint at another type of inherent instability; i. e., the separate classification of humans and animals might survive indefinitely under any circumstances.

Although ultimately it might be impossible to determine with certainty all the events leading to recategorization, the reference to Arabic (and other) influences is determinable (as explained below) and of special relevance here.

2.4.3 Innovation due to environmental changes and language contact

There is now widespread agreement among scholars that innovation due to migration and language contact most likely constituted one of the most decisive external factors in bringing about change. Complex migrations which apparently occurred over many centuries brought Bantu-speaking peoples in contact with other languages and entirely new habitats and new lifestyles which required linguistic adaptation, e. g., the formulation and/or adoption of terms for novel objects leading to the reorganization of the existing lexicon with ramifications for the structural patterns of the language. These linguistic and cultural influences seem to have affected particularly the people settling in the coastal areas of East Africa, whose close proximity to the Arabic world together with quickly developing trade opened the door to extensive foreign contact. It is little wonder that the most noteworthy influence on the Swahili lexicon has come from Arabic. Interaction with the Arabic world culturally (e. g., the introduction of Islam) as well as linguistically brought about the incorporation of a vast number of Arabic terms, which constitute a substantial part of the modern Swahili lexicon. The process of incorporation, however, must

have proven problematic because Arabic has characteristics which are absent in Bantu languages. For example, similar to many Indo-European languages, Arabic has two genders, masculine and feminine; Swahili, as one might recall, does not make a sex-based distinction. Also, again analogous to numerous Indo-European languages, pluralization in Arabic is achieved through affixation or ablaut. Therefore, essentially three alternate strategies for absorbing Arabic nouns and terms from other languages were applied. Although they have already been mentioned in the section on morphologically based noun class allocation, because of their importance they are reiterated here and further explained.

(1) If the initial syllable of the borrowed word coincided with a prefix in Swahili and fit the semantic content of the respective class, the item was assigned to that class. An example is the Arabic word 'muhandis' (engineer) (> muhandisi in Swahili), which not only had the desired prefix for membership in the human 1/2 class but also expressed the appropriate semantic property of human animacy and thus was a perfect candidate for membership in the 1/2 class.

(2) If only the semantic property of the human loan fit the Swahili system, it could be placed into the 5/6 or 9/10 classes because these classes are semantically sufficiently diverse and lack clear prefixation. Thus, the Arabic 'rafiq' (friend), 'rafiki' in Swahili, was added to the 9/10, class allowing the expression of the required class/number/human distinction through agreement patterns in sufficiently long utterances. The examples below are from Wald (1975, p. 283):

(a) rafiki yangu amefika 'my friend has arrived'
 9 1

(b) rafiki zangu wamefika 'my friends have arrived'

10 2

(3) The majority of nonhuman loans were allocated to noun classes on the basis of their semantic content and given the appropriate prefix: Abstracta and differentiated, solid, concrete entities joined class 11 (< older class 14): Arabic 'hurr' (free) < Swahili 'uhuru' (freedom); terms of trees and plants were allocated to the 3/4 class: Gujarati 'ka-ju' (tamarind) > Swahili 'mkwaju' (tamarind plant); animal terms were assigned to class 9/10: Arabic 'gamil' (camel) > Swahili ngamia; words for small things and artifacts were fitted into the 7/8 class: Arabic 'raqqa' (patch) > Swahili 'kiraka'.

In all other cases, nouns without a discernible prefix and without perceivable semantic content were assigned to the 5/6 or 9/10 classes because, as noted above, they could be fitted in morphologically as well as semantically because these classes have very limited homogeneous semantic content. But there was a drawback. In addition to further weakening the semantic integrity of these classes (cf. above), having a choice between two classes which are capable of serving the same function must necessarily lead to fluctuations in usage, thus threatening the autonomy of the two noun classes. Languages probably do tolerate some variation, but, unless somehow arrested, Swahili might experience a further reduction in its noun class inventory - by the collapse of 5/6 and 9/10 into one class, for example. In all, many changes in the Swahili noun class system can be explained in the more general context of grammaticalization, which is discussed next.

2.4.4 Grammaticalization

Heine and Reh (1984, pp. 16-17) posit that phonetic, morphosyntactic and functional,

i. e., desemanticizing processes are evident in the internal evolution of many African languages. Although some effects of phonetic, morphological, and functional adjustments on the Swahili noun classes have already been addressed above, they need to be more closely examined in the light of general grammaticalization principles which have been proposed for the evolution of Swahili prefixes and its simultaneous effect on the language as a whole.

There is no agreement as to the origin of prefixes in Swahili or other Bantu languages. Commonly, two linguistic elements are cited as the most likely sources, viz. pronominal and nominal.

According to Greenberg (1978, pp. 47-82), nominal class markers probably originated as demonstratives which in the Proto-language occurred either before or after the noun (for a possible explanation of this fluctuating position of the demonstrative, cf. Williamson, 1989, pp. 33-34). Through phonetic attrition, these free forms became attached to nouns, resulting in a prefixal system (e. g., Swahili) or a suffixal system which, however, could experience renewal in the opposite direction (i. e., change from prefixation to suffixation or the reverse).

Nouns are the second possible source of prefixes. Creider (1975) and Denny and Creider (1976/1986) maintain that Bantu prefixes are derived from a small set of classifiers, themselves derived from generic/class nouns with the parameters 'animate', 'rounded', 'liquid', etc. (cf. Table 16), which, through the familiar loss of phonetic substance, were reduced to affixes and attached to the nouns which they preceded. Dixon (1982, pp. 230-233) shares their view and compares the situation in Bantu with that of indigenous Aus-

tralian languages possessing a prefixal classification system of nominals. Specifically, he proposes that the sequence determiner + classifying/generic noun + specific noun eventually changed to the present order of determiner + prefix + specific noun. Heine and Reh (1984, p. 66) concur with the foregoing; i. e., they also view phonetic reduction or phonological erosion as the cause of affixation. Their main concern, however, is the loss of semantic import which affected forms experience as a result of these processes.

Heine and Reh (1984, pp. 35-36) argue that

a word has to undergo at least one functional process (i. e. Desemanticization [sic]) to become a function word. ... By this process, a lexical item receives a second, non-lexical function, which may ultimately become its only function.

The consequences of this decrease in semantic complexity of affected forms, i. e., prefixes in this case, is clearly evident in the previously discussed incorporation of loans into Swahili: New items added to the language can no longer be assigned to noun classes on purely semantic grounds because those grounds have become more and more obscure. The subsequently more random assignment of new forms necessarily adds to the opaque ness of the system. Conversely, over time, the diminished semantic role of classifying elements typically gives way to enhanced syntactic significance of these elements. A case in point is the fact that Bantu prefixes have become prominent members of the overall concordial agreement patterns. Furthermore, the enhanced grammatical status of nominal indicators, accompanied by continuing phonological changes and adjustments, has, as noted above, led to the reduction of the number of noun classes, a process which conceivably can threaten the autonomous existence of such classes as 9/10 and 5/6 in Swahili.

Other extremely subtle changes in the semantic structure of languages have only re-

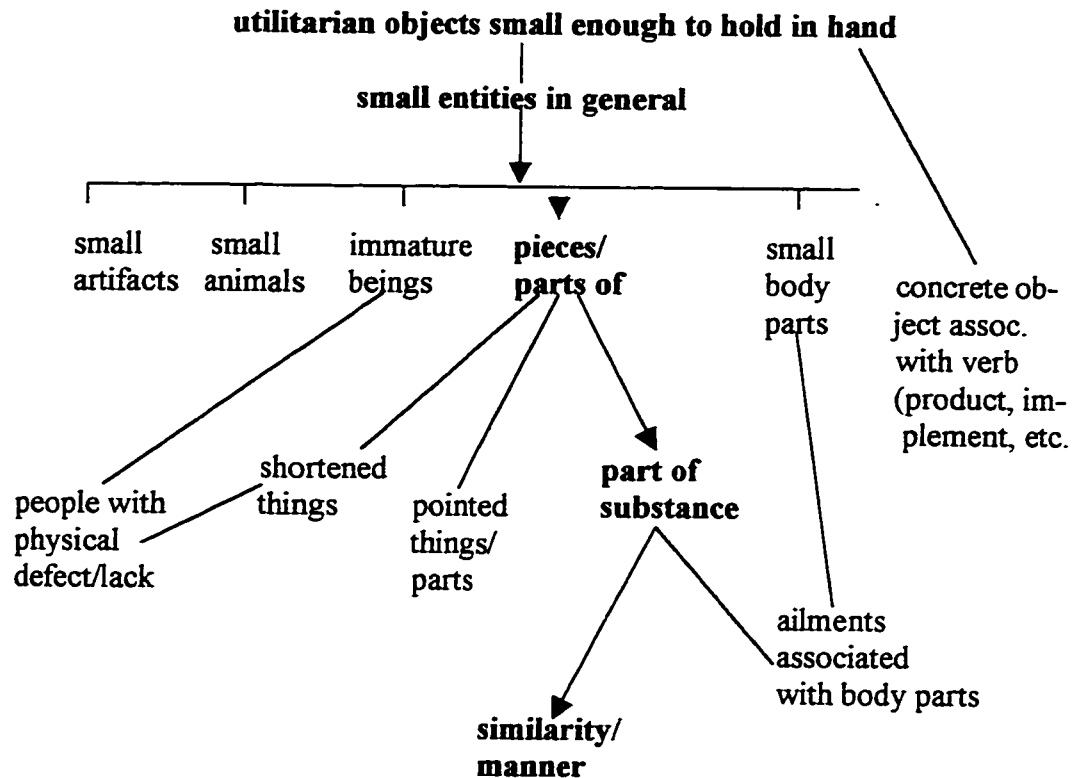
cently become the object of closer scrutiny. In contrast to traditional linguistic inquiry, new approaches to the interpretation of paths of grammaticalization recognize the speaker of a language as the crucial contributor to semantic change. In several proposals (e. g., by Heine and Reh, 1984; Heine et al., 1991; Traugott and König, 1991; among others) changes in meaning which eventually manifest themselves in overt linguistic structures are viewed as the progressive removal of meaning from the external world as the speaker's *subjective, evaluative* interpretation of external stimuli increases. With respect to Swahili, Contini-Morava (unpublished paper, cited in Jurafsky, 1996, p. 540) illustrates how such a change might have affected nominals in the 7/8 *ki-/vi-* class (cf. Table 18). This class is commonly referred to as the "class of things", a designation which is obviously insufficient to describe the modern, semantically multi-faceted *ki-/vi-* class (cf. section 2.3.1). Contini-Morava's analysis not only better accounts for the diversity of meaning in the class, it also seems to confirm that semantic changes do, indeed, tend to involve movement from the more concrete to the more abstract.

The items in bold print clearly evidence the path of increasing abstraction. It would be of great interest to see if a similar study of other semantically complex noun classes in Swahili would yield comparable results.

There are additional adjustments in modern Swahili which are most likely the direct result of the more grammaticalized status of prefixes, i. e., their predominant function as noun class markers without particular semantic import. For example, as previously mentioned, Swahili speakers make increased use of separate lexical items, such as adjectives

Table 17

Analysis of the semantic content of the modern
Swahili *ki-/vi-* class



and intensifiers, to express semantic properties and nuances of meaning which once seemed to have been the exclusive function of the prefixal system. However, a note of caution seems in order. Although the beginning preference for lexical differentiation can be construed as further evidence for the decreasing semantic association of prefixes and their simultaneously increasing grammatical/syntactic role, it can also simply mean that new techniques fulfilling an equivalent function are emerging without necessarily ousting the traditional ones (cf. Hopper, 1991, pp. 22-23). A similar functional split seems to have emerged with respect to the *ki-* prefix. On one hand, it continues to fulfill its tradi-

tional role as a class marker (class 7), on the other, it is increasingly becoming the means of expressing adverbial functions (cf. "manner" in Table 17), a fact that has prompted some linguists to posit the development of a new grammatical category, namely that of non-derived adverbs (for detail, cf. Gromova, 1988, pp. 779-783).

2.5 Current trends and future outlook

In view of the immense internal and external pressures to which the noun class system of Swahili and related languages has been subjected, its survival is testimony to the astonishing resilience, flexibility and resourcefulness of the language and its speakers. But will the system continue to flourish? Obviously, its future path is unpredictable. Certain tendencies, however, have been observed in presentday Swahili which some scholars have interpreted as possible indicators of ongoing developments in the language. These tendencies are addressed in this final section.

The future of the noun class system of Swahili and Swahili-type languages will probably depend on the relative success of at least two opposing forces. One is the present-day attempt to standardize and codify the language; the other is actual language use with its emphasis on functional necessity and ease of communication.

With respect to the first force, preservation of the national heritage, of which language is a central part, and the adoption of a standard form of the language appear to be a matter of principle and national pride as the newly independent East African nations try to establish their position in the modern world. For that purpose, language councils have been established whose goal it is to come to terms with the diversity of Swahili dialects, to "plan and regulate" the influx of foreign elements, and to devise strategies to adapt the

"standard language" to the linguistic demands of modern technology (for detail, cf. Geider, 1995, esp. pp. 335-336).

However, the second force, i. e., ease of communication which dictates the linguistic choices which speakers of Swahili make, cannot be underestimated and ultimately may well triumph over any official attempts of language control and standardization. In fact, some of the rulings made by the Swahili Committee since the 1930s which have, for instance, declared the noun class assignment of certain nominals unacceptable in standard Swahili (the membership of 'animal' and 'insect' in the "human" 1/2 class was a matter of great controversy; cf. Miede, 1991, pp. 221-223) have all been ignored by speakers. Instead, the language has continued to undergo subtle changes in the nominal as well as in the verbal paradigm. In addition to the changes addressed above there are others (for a discussion of these, cf. Miede, 1991, pp. 222-231).

The importance of communicative ease - on which speakers generally insist and which always has linguistic consequences - is also evident in other ways. Although not referred to previously, pidgin forms of Swahili are widely used as a lingua franca in all parts of East Africa. Their most notable characteristic, which is of special relevance here, is the retention of only two noun classes, class 1/2 which is used for all animates (humans and animals), and classes 7/8 or 9/10 which cover all inanimates (Nurse and Hinnebusch, 1993, p. 360). There is some indication that the bipartite distinction between animate and inanimate entities is also gaining momentum in standard Swahili, a trend which apparently has been ongoing for some time. Wald (1975, pp. 283-285) notes, for example, that animate concord must be a more recent development in Swahili (cf. also Givón's, 1971,

contention¹⁰) because the oldest available texts (from the middle of the 18th century) show variation between class concord and animate concord. To substantiate his claim, he points out vestiges of this variation which are still retained in attributive possessive constructions in present-day Swahili: Nouns referring to humans outside the 1/2 class still exhibit class (i. e., nonhuman) concord in the possessive but otherwise are consistently governed by animate concord in the modern language.

Further evidence for the ever increasing role of animacy, especially with reference to humans, comes from Brauner (1979, pp. 427-428) who notes that nouns tend to be treated in terms of animate concordial agreement as long as they can at all be associated with the notion of animacy, for example (wa- indicates animate concord):

Biafra na Lagos wanashindana
'Biafra and Lagos are fighting with each other'

Alliance na Makoko wagawana kombe baada ya kwenda sare
'Alliance and Makoko (two soccer teams), after a tie game, share the trophy'

Polisi, Ushirika na Magereza wameombwa wafanye mpango...
'The police, the co-operative and the prisons were asked to develop a plan...'

An analogous bipartite classification of the nominal lexicon is apparently developing in other Bantu languages. Herbert (1985, pp. 188-189) uses data from some varieties of Lingala pidgin which point to the possibility that the diminished significance of noun classes is beginning to be counterbalanced by the resemanticization of the nominal system:

If one accepts concordial patterns as reliable indicators of gender, then it is possible to claim that the [Lingala] data support an interpretation of certain Bantu gen-

der systems developing a semantic opposition Animate: Inanimate. The form of the class prefix is, on the whole, irrelevant to gender in this new system since it does not determine concord. That is, noun class prefixes in these languages are no longer gender markers since they are syntactically irrelevant. ... nominal marking ... is determined by an alternative system of categorization (Herbert, 1985, p. 190).

Demuth, Faraclas and Marchese (1986) examined several Niger-Congo languages, including Bantu, and came to similar conclusions: A number of languages seem to be in the process of losing noun class distinctions and collapsing plural markers; distinctions which are retained correspond to the human 1/2 and the inanimate 9/10 classes; the lesser degree of noun class distinction is accompanied by the tendency to decrease concordial agreement although the latter still appears to be fundamentally intact. Corbett (1991, pp. 252-255) also notes that there is a general trend toward simplification and movement toward a more consistent animate-inanimate dichotomy in various Bantu languages; for Swahili he posits that the remnants of disharmony between morphological agreement patterns and semantic assignment in possessive constructions involving animates might progress to the point where complete class 1/2 concord will become obligatory in all constructions.

Whether or not all Bantu languages will be affected in an analogous fashion remains to be seen. An interesting case of an alternative course of development is examined by Stucky (1978) in which she describes the loss of the noun class and concordial system of Kituba, a Bantu lingua franca spoken in Zaire. However, except for ongoing minute changes, the present noun class and concordial system of Swahili and many other Bantu languages seems to be remarkably stable. Therefore, until further diachronic and synchronic data become available, judgement on the future course of Swahili must be sus-

pended. However, the examination of past and present data provides sufficient substantiation for the major claim in this paper: Nominal classification in Swahili is not arbitrary although, analogous to German, it is obscured by extremely complex, intertwined forces which have acted and continue to act upon the language.

3. Noun classification in Vietnamese

3.0 Introduction

Vietnamese is one of the world's languages whose classification of the nominal lexicon is achieved by the use of so-called numeral classifiers. Because the overt manifestations of this type of classification differs considerably from that of noun class systems, it seems appropriate to outline its general characteristics and some major theoretical deliberations before proceeding with the discussion of noun classification in Vietnamese. Unless specified otherwise, the information concerning general features is based on Dixon (1982, pp. 211-218) and Adams (1986, pp. 241-246). The points made below will be further elaborated and illustrated at a later point with Vietnamese examples in the appropriate sections.

Numeral classifier systems are an areal feature of South-East Asia, Australia, Oceania, and the Americas and are especially associated with such isolating languages as Burmese, Thai, Mandarin, and Vietnamese. Nominals in these languages are invariable in form and consequently lack morphological devices to signal such features as case relations or number (plurality) because, with respect to the latter, "nouns do not in themselves contain any notion of number or amount" (Thompson, 1965, p. 193).¹¹ It is also Greenberg's (1972) contention that it is this number neutrality of nouns which mainly necessitates the use of classifiers when he states that

classifiable nouns in their isolated form, that is when not accompanied by a classifier or a plural marker, are like collectives in their semantic non-specification of number and in their avoidance of a direct number construction. The classifier is an individualizer which performs the same function as a singulative/derivational affix in languages with the collective/

singulative opposition (Greenberg, 1972, p. 26).

Quantitative individuation is accomplished by the presence of an independent morpheme which accompanies "most ... expressions of quantity, whether the quantity is expressed by means of a specific quantitative numeral or by less specific quantitative expressions ..." (Downing, 1996, p. 2). Nonspecific quantifying morphemes are often explained in terms of measure terms found in non-classifier languages. Examples in English are the italicized forms in such expressions as two *sheets* of paper, a *bunch* of bananas, five *sticks* of chalk, etc. However, the referents of the bulk of nouns in non-classifier languages can be enumerated without the use of such classifier-like forms (e. g., two cats, three tables, etc.). This is not possible in classifier languages. With only certain exceptions, a separate *classifying* morpheme must co-occur with a numeral and a noun. Therefore, it seems advantageous to make an initial distinction between those morphemes in classifier constructions which primarily indicate "a quantitative measurement of the denotatum of the noun classified" (Benton, 1968, p. 116), i. e., quantifiers, as opposed to those which express some inherent feature of the noun which they qualify. The latter are "lexical items which count nouns and the objects they refer to as individuals distinguished according to features such as animacy, shape and function" (Adams, 1991, p. 62). It is this "true" type of classifier on which the discussion of Vietnamese classifiers will focus.

The identification of classifiers is often problematic. First, in contrast to the relatively small number of noun classes in non-classifier languages whose number is defined, classifiers typically come in large sets; e. g., some languages are reputed to have several hun-

dred classifiers. For instance, if one includes so-called "action" classifiers which are part of the verbal paradigm, 528 classifiers have been identified in Tzeltal (Berlin, 1968). Secondly, while determinants of noun classes constitute a closed category, classifiers are a fairly open set. Consequently, it is difficult, if not impossible, to give an exhaustive list of the number of classifiers in a particular language. The prime reason for the impossibility of stating explicitly the number of classifiers in a given language is the fact that there is no clear-cut demarcation between classifiers and nouns. In other words, while there are "pure" forms of each, some can function as both. A further complication arises from the possibility of employing forms as classifiers on a temporary basis. Finally, the actual use of classifiers can differ significantly with respect to speech situations, special usage, and/or the register employed by the speaker.

Many linguists have addressed the question of what it is that nouns and classifiers represent with respect to real objects in the material world. Hundius and Kölver (1983, p. 182), for example, argue that nouns in numeral classifier systems are

purely *conceptual labels* which, in order to be appropriately related to objects of the non-linguistic world, always and in principle stand in need of interpretation which has to be inferred from both linguistic and non-linguistic context.

Thus, while the quantificative role of classifiers is one linguistic means of interpretation by creating a link between the uncountable conceptual level of nouns to "the level of reference to individual countable *objects*" (Hundius and Kölver, 1983, p. 182), classifiers also fulfill a semantic function. This does not come as a surprise since classifiers in most cases are said to be recruited from the nominal lexicon of the respective languages. Adams (1986, p. 242), for example, maintains and provides cross-linguistic evidence that

classifiers can be manipulated to say different things about the object in question [because] *the noun as a symbol is imprecise* and its physical referents can have different enough characteristics that different classifiers are appropriate for them (emphasis added).

While one classifier, for instance, might single out the physical property of size of an object, a different one might emphasize its dimension of length. This means that classifiers and nouns together share the burden of conveying meaning by establishing meaning compositionally as in *wad of paper* where "*wad* attributes a more specific property to the atemporal region denoted by *paper*" (Frawley, 1992, p. 68).

The notion that classifiers and nouns together establish the semantic representation of a noun phrase is also supported by Allan (1977, p. 285), who posits that "[classifiers] have meaning, in the sense that a classifier denotes some salient perceived or imputed characteristic of the entity to which an associated noun refers (or may refer)." He employs seven categories of semantic classification. These categories are *material*, with the subcategories of *animate*, *inanimate* and *abstract/verbal* nouns; *shape*, with the dimensional subcategories of *length*, *flatness* and *roundness*; *consistency* with the subcategories of *flexibility*, *rigidity* and *non-discreteness*; *size*; *location*; *arrangement*, and *quanta* (Allan, 1977, p. 297).

From a *functional* perspective, Denny (1976) uses three broad criteria for grouping the salient semantic properties of classifiers and their accompanying nominals:

Three main kinds of human interactions seem to be conveyed by noun classifiers, *physical interaction* such as handling, *functional interaction* such as using an object as a vehicle, and *social interaction* such as interacting appropriately with a human compared to an animal, or a high status person compared to a low status one (Denny, 1976, p. 125).

With the criterion of physical interaction Denny refers to the spatial configuration and

the material essence of entities, i. e., their Gestalt features (e. g., one flat object of the blanket kind 'a blanket'); functional interaction primarily depicts objects in terms of use (e. g., one transportation object of the boat kind 'a boat'); social interaction mainly concerns the relative ranking of individuals within a given society (e. g., one honorable object of the person kind 'honorable person').

Most, if not all, of the classificational criteria proposed by the above linguists are discernible in Vietnamese. Since Denny's (1976) interactional approach, in particular, takes into account some major points pursued in the context of this project, it will be especially useful in the examination of the Vietnamese classification system.

3.1 Structure of the Vietnamese noun phrase

Vietnamese nouns are typical exemplars of classifier languages: They are invariable and appear in single form or in conjunction with other independent elements (quantifiers, adjectives, possessives, demonstratives, interrogatives) which establish number, possession, and, through some two hundred classifiers, reference. These components of noun phrases form a close syntactic unit and occur in a fixed order which in Vietnamese consists of the sequence quantifier + CLF + noun + modifiers. However, with only certain exceptions, all elements other than the noun (including the numerator 'one' which is the unmarked case and can be omitted) are optional in a sentence containing singular nouns. Thus, the overall structure of the Vietnamese noun phrase is as indicated below. The examples were elicited from one of the three informants who assisted in the compilation of data:

(QU) + (CLF) + Noun + (Adj.) + (Dem.) + (Poss.)

Examples: (1) Noun:

giấy
'paper'

(2) (QU) + CLF + Noun:

(một) cái bàn
(one) CLF table
'a table'

(3) QU + CLF + Noun:

một trăm cái hộp
(one 100 CLF box)
'one hundred boxes'

(4) (Qu) + CLF + Noun + Adj.:

(một) cái bàn lớn
(one) CLF table big
'a big table'

(5) CLF + Noun + Adj. + Poss.:

cái bàn lớn của thầy
(CLF table big poss. teacher)
'(any) teacher's big table'

(6) CLF + Noun + Adj. + Dem. + Poss.:

cuốn sách màu xanh này của tôi
(CLF book color blue this poss. I)
'this blue book is mine'

3.2 Organization of the nominal lexicon

It could not be discovered if an examination of the lexical organization of Vietnamese nouns has been conducted to date. However, based on information elicited from two informants, it can be concluded that Vietnamese nominals are structured in accordance with general taxonomic principles: There is steady progression from words denoting specific

concrete items to more inclusive, less specific words as one ascends the hierarchy. Superordinates are the most abstract terms but vary in semantic transparency; i. e., if they are single morphemes, they tend to be semantically more obscure than compounds, which often consist of a lexically unanalyzable head (e. g., *đồ* in Table 18 vaguely refers to 'stuff') followed by a semantically more transparent morpheme (cf. *đùng* 'use' in Table 18). In fact, the head of compound nouns can frequently be used in conjunction with a variety of expressions; i. e., it very much functions like a classifier (further discussed below). In contrast, basic and subordinate terms, regardless of their morphological structure, typically consist of meaningful lexical nouns which often are accompanied by various combinations of other nouns, verbs, and adjectives. For example, the subordinate 'dental chair' in Table 18 is composed of 'chair' (*ghế*), 'tooth' (*nha*) and 'dentist' (*sĩ*).

3.3 General description of Vietnamese classifiers

As previously stated, nouns and classifiers do not form discrete categories. Rather, a fair number of forms serving as classifiers also function as the head of compounds and as nouns denoting entire groupings which implies that they are nouns with a higher level of abstraction than regular nouns. These nominals will be referred to as 'class nouns' from here on. A good example in Vietnamese is the word '*máy*' (machine), which comprises a range of items and can occur as a classifier, as an autonomous noun, and as part of compounds without a discernible change in its basic (i. e., 'machine') meaning:

Class noun: *máy* 'machine'

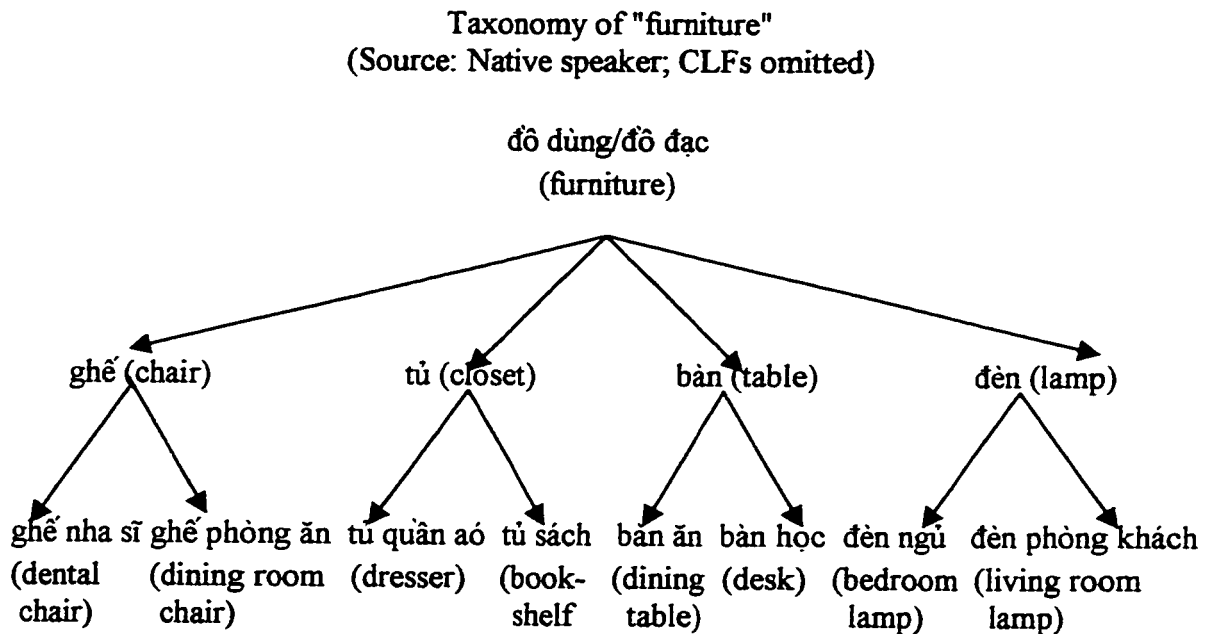
CLF: *máy may* 'sewing machine'
máy hát 'record player, cassette, CD, etc.'

Noun: máy (CLF) máy 'machine'

Compound: máy cắt cỏ 'lawn mower'

Thus, as noted above, there is "a continuum from pure noun to pure classifier, according to the amount of semantic and syntactic noun and/or classifier behavior which various [forms] manifest" (Delancey, 1986, p. 439).

Table 18



In addition to nouns with variant behavior, there are nouns which are always used as class nouns and consequently do not require a classifier. They include such subgroups as nominals denoting color, smell, taste, noise, substance matter, geographical areas, etc.

One informant provided the following examples:

Color: Tôi thích màu xanh
(I likePres. color blue)

'I like blue'

Smell: Tôi thích **mùi** nước hoa Chanel
(I likePres. **smell** parfum Chanel)
'I like the smell of Chanel'

Taste: Tôi thích **vị** cay của Salsa.
(I likePres. **taste** hot poss. Salsa)
'I like the hot taste of Salsa'

Noise: Cha tôi ghét **tiếng động** ồn ào.
(father I hatePres. **noise** loud)
'My father hates loud noise'

Substance: Cái bàn này được làm bằng **gỗ**.
(CL table this Pass. make by **wood**)
'This table is made of wood'

Geographical area: **Việt Nam** rất đẹp.
(**Vietnam** very beautiful)
'Vietnam is very beautiful'

In contrast to some forms, whose variable character does not affect meaning, in many cases the use of a particular classifier is the only means of determining semantic content. This is clearly evident in the case of nouns related to plants, as illustrated in the following examples (from Nguyen, 1957, p. 127):

chè	'tea'
cây chè	'tea shrub'
lá chè	'tea leaf'
nụ chè	'tea bud'
búp chè	'unfolded tea leaf'
nương chè	'tea grove'
bã chè	'tea dregs'
ấm chè	'teapot'

In other cases, as noted earlier, ordinary nouns can assume the role of a classifier tem-

porarily, a fact that emphasizes once more the fluidity between classifiers and nouns and is apparently characteristic of classifier languages in general. For instance, Berlin (1968, pp. 174-180) found it necessary to make a distinction between "inherent state" and "temporary state" classifiers to account for the classifier inventory of Tzeltal. Nguyen (1957, p. 128) cites these Vietnamese examples:

- một cái **bàn** 'a table'
- một **bàn** tiệc 'a tableful of food (at a banquet)

- một cái **nhà** 'a house'
- một **nhà** rác 'a houseful of refuse or wastepaper'

A final aspect of Vietnamese classifiers concerns the co-occurrence of two kinds of classifiers which might be termed "general" and "specific", respectively. The former includes 'cái' (denoting inanimate entities) and 'con' (basically used to refer to animate entities); the latter comprise all those classifiers which refer to more specific features of entities. Special classifiers are more fully explored in the Gestalt and animacy sections.

3.4 Criteria for classification

Classification of the nominal lexicon of Vietnamese is essentially determined by semantic criteria because the form of words is invariable and, therefore, cannot include such formal elements as morphological determinants. This applies to the entire lexicon and also holds for compound nouns which, as illustrated in Table 18, are frequently formed by the addition of a verbal element to a noun or by adding a noun which acts as a modifier. In these cases the classifier of the initial nominal is often retained, or it functions as a classifier for the second noun:

(cái) bàn	'table'
(cái) bàn ăn (eat)	'dining table'
(cái) nhà	'building'
nhà (building) vệ sinh (hygiene)	'bathroom'

The choice of classifiers for loans, in general, seems to follow the semantic rules applicable to indigenous nouns. For example, the French loan 'cà rốt' (carrot) is classified with 'củ', the special classifier denoting *tuber/root*.

3.4.1 Classifiers

It has been pointed out previously that the application of traditional taxonomic techniques of categorization does not seem well suited for the classifier systems of such languages as Swahili because many Swahili nominals with the same semantic content are scattered across several noun classes. In German, a hierarchical organization often coerces semantically incompatible expressions into one of the three grammatical genders of the closed tripartite classification system. The problems are more pronounced in a classifier system because its set of (partly unstable) classifiers not only embraces a vast number of referents with heterogeneous semantic content, but it is also subject to situational and idiosyncratic variation. Downing addresses the problems of taxonomic organization of Japanese classifiers and provides numerous examples which underscore her overall conclusion

... that the taxonomic hierarchy may not be the optimal means of representing the [classifier] system, since its primary emphasis is on superordinacy relations, which do not appear to figure significantly in relating the various members of the field to one another (Downing, 1996, p. 127).

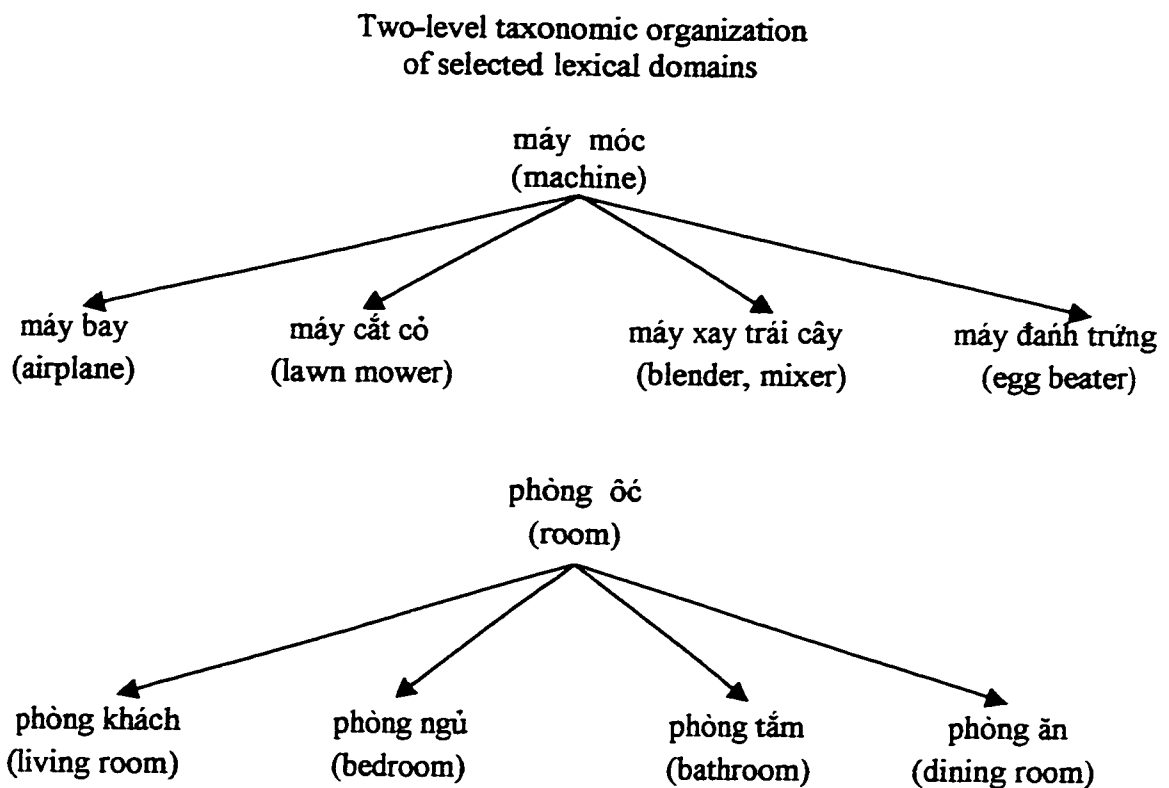
The situation is similar in other classifier languages. For example, the complexity of classes denoted by classifiers in Thai cannot be represented in terms of a hierarchical organization, "rather ... they form a rhizome-like network, branching into multiple overlapping bundles" (Hundius and Kölver, 1983, p. 192). Even less encouraging were Berlin's (1968) findings with respect to Tzeltal; i. e., Berlin found it impossible to formulate a "statement of the structural principles which hold for the total inventory of classifiers ... [because] a neat, multi-leveled, folk-taxonomic structure is not present in the data" (Berlin, 1968, p. 182).

The complications accompanying attempts to establish taxonomic hierarchies for Japanese, Thai, and Tzeltal classifiers apply to Vietnamese classifiers equally well. Although it is possible to establish superordinate categories, referents of potential subcategories will have conflicting and/or partial loyalties to a particular superordinate because, as in the languages mentioned above, classifiers typically encode disparate semantic features of the nouns which they classify. An example is the word for 'river' (*sông*) which may alternately be classified with 'con', the general animate classifier, or with 'giông' which refers to the *flow* of a river.

Although it seems impossible to set up a hierarchical organization of the entire Vietnamese classifier inventory, the establishment of taxonomies within the scope of one classifier - typically a class noun - in numerous lexical domains posed no problems for the informants. The following examples (Table 19 below) were all provided by one informant. In each case the superordinate consists of a compound the first part of which serves as a classifier for basic level expressions. This type of "shallow" taxonomy seems to be

productive on only two levels. The establishment of more complex taxonomies is apparently possible in semantic fields involving certain kinds of concrete, inanimate objects which are classified with *cái*, a kind of default classifier whose wide semantic scope is somewhat reminiscent of the German articles. For instance, all words denoting pieces of furniture at the basic and subordinate level in Table 18 are classified with *cái*.

Table 19

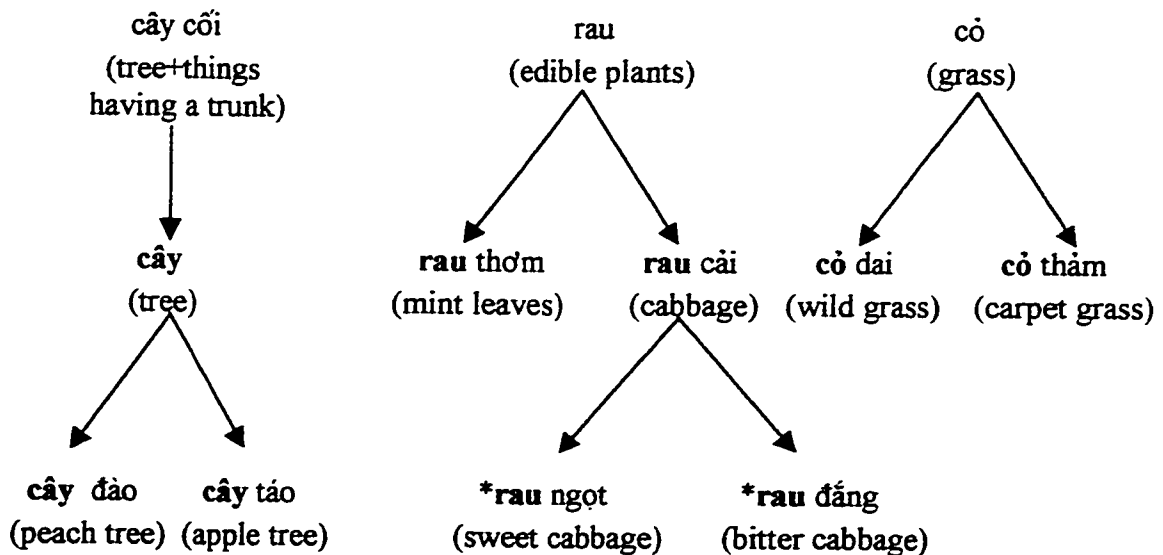


Unfortunately, the systematic classification in the two-level taxonomies above does not give a realistic impression of the extraordinary complexity of the system. Thus, subordinates often have separate classifiers whose selection is motivated by *one* special defining feature. To cite just one example, the superordinate 'xe cộ' (land vehicle with two

or four wheels) comprises several basic level terms for which 'xe' functions as classifier (xe hơi 'car', xe đạp 'bike', etc.). However, other terms are not classified with 'xe' (ba bánh 'tricycle', for instance) because the number of wheels makes a decisive difference. Therefore, in a strict sense, three-wheeled land vehicles form a subtaxonomy of their own where a basic level term actually functions as a superordinate which, although narrower in scope than the highest taxon, is still superordinate to more basic terms. Similar mixed patterns occur in other semantic fields. As further illustration, three simplified taxonomies of botanical taxa are given in Table 20. Classifiers are in bold print. According to the informants, there is no single taxon that includes plants of *all sizes*.

Table 20

Diversity of botanical classifiers



*Optional in discourse

Although full of irregularities, i. e., typically not all members of a referent class are

systematically covered by a restricted number of classifiers in taxonomic structures, the informants' responses indicated the existence of additional general superordinate - subordinate relations. These include such diverse domains as articles of clothing, toys, written literary works, literary works or works of art which are performed/recited/exhibited (plays, songs, poems, dances, paintings, etc.). It is likely that more concentrated, systematic research would allow the identification of other semantic fields which are taxonomically organized.

In sum, the elicitation sessions had some positive results but, overall, confirmed Downing's (1996) general observations with regard to classifiers, viz. that they cannot be integrated into an all-embracing system of categorization. Again and again, the informants indicated that inclusion or exclusion of a particular classifier in a given referent class is often either a matter of personal preference, register, context, or emphasis on a certain semantic quality associated with a referent. However, while in the case of inanimate entities certain classifying labels may or may not be employed by individual speakers, the usage of classifiers in the animate domain appears to be at least more obligatory. Classifiers with animate referents will be further explored in the section on animacy (3.4.3).

3.4.2 Gestalt

In the overview of Vietnamese classifiers, it was noted that the terms for color, smell, taste and sound are not classified. The nonclassification of sense-related properties is of particular interest from a more global perspective because comparative studies have shown evidence that this phenomenon is apparently a common characteristic of classifier

languages prompting scholars to postulate that vision is of primary significance in the categorization process of percepts. Adams and Conklin (1973, p. 8) offer the following explanation:

One of the most fascinating facts of numeral classification is its dependence on the visual feature of form. There are no metaphors based on sound, feel, taste, or smell ... [which are] less useful because the impressions gained from them are more time based and transitory. Also the visual impression requires less intimacy with or closeness to the object concerned.

Vietnamese shape-based classifiers provide extensive evidence for the salience of shape. The visual form of objects is amply represented and semantically transparent in the Vietnamese classifier system; i. e., numerous classifiers highlight perceptually salient properties of nouns, most notably, as proposed by Allan (1977), the property of shape/dimensionality which, in simple terms, includes the values of *long*, *flat* and *round* to which the value of *angular* and the non-dimensional shape of *curvature* (as in a heap or roll of material) could be added. However, similar to the variability of general categorization principles, these values are not neatly separated but cut across different geometric dimensions and frequently overlap or combine with parameters other than shape in its strict sense. An example is size; e. g., an object may be a) flat and small, or b) flat and large:

a) tấm thảm 'a (small) piece of carpet'

b) tấm chiếu 'a piece of mat (large enough to sleep on)'

Table 21 alphabetically lists and exemplifies a selection of special classifiers which are associated with the various Gestalt features mentioned above. Those forms which also

unambiguously function as class nouns are starred.

Table 21

Vietnamese classifiers denoting Gestalt features
(Source: Emeneau, 1951; Nguyen, 1957; and informants)

CLF	Denotation	Examples
bãi	flat expanse, stretch	bãi cỏ 'stretch of grass' bãi cát 'stretch of sand' bãi biển 'beach'
bức	flat, rectangular objects	bức màn 'curtain, window shade' bức tường 'wall of brick/stone' bức tranh 'painting'
*cây	tree or plant; stick-shaped/plantlike object	cây cam 'orange tree' cây sen 'lotus plant' cây sáp 'candle'
cuốn	roll of material	cuốn giấy 'paper roll' cuốn vải 'roll of cloth' cuốn phim 'roll of film'
đám	objects covering large areas	đám đất 'piece of land' đám vườn 'garden' đám rừng 'forest, jungle'
đống	heap, pile	đống rác 'heap of refuse' đống cát 'pile of sand' đống rơm 'stack of straw'
góc	angle, corner	góc nhà 'corner of the house' góc bàn 'corner of the table' góc phòng 'corner of the room'
hòn	stone, stone-shaped objects, islands	hòn đá 'stone' hòn cù lao 'island (river/lake)'

		hòn kim cương 'diamond'
*lá	leaf; leaf-shaped objects	lá trà 'tea leaf' lá bài 'card (in games)' lá gan 'liver'
nét	stroke, line, feature	nét bút 'pen stroke' nét mặt 'facial line'
ngọn	peak-shaped objects	ngọn núi 'mountain' ngọn cây 'treetop' ngọn đèn 'flame'
rặng	line, row (not necessarily totally straight)	rặng cây 'row (of trees)' rặng dừa 'row of coconut trees' rặng núi 'mountain range'
sợi	elongated flexible objects	sợi râu 'facial hair' sợi dây lưng 'belt' sợi dây thun 'rubberband'
tấm	rectangular flat piece of material; somewhat smaller than 'bức'	tấm lụa 'bolt/piece of silk' tấm kính 'pane of glass' tấm hình 'photograph'
thanh	long, thin piece of rigid material	thanh giáo 'lance' thanh củi 'thin stick of wood' thanh kiếm 'sword'
*trái	fruit; round, globular objects	trái cam 'orange' trái banh 'ball' trái đất 'globe, earth'
viên	artificially created regular (round/rectangular)shaped things	viên thuốc 'pill' viên gạch 'brick' viên đạn 'bullet'

3.4.3 Animacy

Overall, Vietnamese makes a clear distinction in the denotation of animate and inanimate entities. There are, however, some interesting exceptions which can be explained best (and perhaps only) in terms of cultural values and beliefs. These exceptions will be examined more closely at the appropriate places. Within the animate domain, there are two major subdivisions, viz. the classification of non-human animates vs. that of humans. While the categorization of the animal world is relatively straightforward, the classification of humans, which excellently illustrates Denny's criterion of social interaction, is as prominent as it is complex and involves numerous culture-specific parameters. Both the animal and human aspects of animacy are discussed in the following two sections.

3.4.3.1 Classification of non-human animates

The general classifier for non-humans is 'con'. According to two informants, 'con' denotes all animals without differentiation; i. e., no distinction is made between wild and domesticated animals, including pets (con vật 'living being/creature'/unspecified; một con cọp 'a tiger'; một con bò 'a cow, bull, ox'; một con chó 'a dog'). One informant maintains that finer differentiation can be applied to add emphasis or to express elevated linguistic style. In these cases, speakers prefer to use 'con' for domestic animals while 'thú' is the preferred classifier for wild animals. However, neither of the foregoing patterns of animal classification is absolute. Thus, the general classifier for inanimate entities 'cái', instead of 'con', can be utilized for small insects (e. g., cái kiến 'ant'; cái ong 'bee'), perhaps suggesting that diminished size affords them lesser value. Furthermore, while the primary

reference of 'con' is unquestionably to animals, it can be metaphorically extended to objects with animal-like characteristics and to non-living entities which are vital enough to be distinguished from inanimate objects. As already noted, these extensions often reflect cultural values and the (ancient) belief system of Vietnamese speakers. The latter is particularly evident in proverbs, folk literature, such as tales for children, and other popular sayings. In these cases, personified or deified animals are elevated in status by the usage of the kinship term/classifier 'bác' or the honorific classifier 'ông', both of which are normally reserved for humans. In addition to the elephant (ông voi), this holds especially for the tiger, traditionally the most venerated animal, which is variously referred to as 'ông ba mươi', 'ông cọp', 'ông hổ', 'ông hùm', all meaning 'the Lord Tiger' (Nguyen, 1957, pp. 136-143). The special treatment of elephants and tigers is possibly the result of special powers (based on a mixture of the dimensions of size, agility, elusiveness, danger, and physical strength) which once were attributed to them. Especially the element of danger is of interest here because it seems to recur universally with astonishing regularity; i. e., many languages treat dangerous things as grammatically animate or, as in Vietnamese, give them special status in the animacy hierarchy (cf. Corbett, 1991, pp. 23-24).

The inclusion of ghosts (con ma) and spirits (con quý) in the animate domain is not surprising because they are universally imagined as nonphysical and, therefore, invisible manifestations of human-like entities that help or haunt human beings. Since most human classifiers inherently distinguish between male and female sex, 'con' is also employed for expressions denoting humans whose sex is not specified (Nguyen, 1957, p. 143):

con bạc	'gambler'
con buôn	'merchant'
con hát	'actor, actress'
con tin	'hostage'

The most peculiar occurrence of 'con' concerns a limited number of nouns which clearly denote inanimate objects. Based on Nguyen (1957, pp. 142-143) and information supplied by informants, the following list (Table 22) could be compiled:

Table 22

Animate classification of inanimate objects

1. con bài	'playing card'	14. con nước	'tide'
2. con chèo	'oar'	15. con người	'pupil (of eye)'
3. con chip	'computer chip'	16. con quay	'(spinning) top'
4. con cò/tem	'postage stamp'	17. con sào	'pole (for punting)'
5. con cờ	'pawn (chess)'	18. con số	'digit, number'
6. con dao	'knife'	19. con sông	'river'
7. con dấu	'seal, stamp'	20. con súc sắc	'dice'
8. con đê/đập	'dike, dam'	21. con tàu	'boat, ship'
9. con đò	'small raft'	22. con thò lò	'teetotum'
10. con đường	'road, street'	23. con thuyền	'boat (row or sail)'
11. con kênh	'canal'	24. con thoi	'shuttle'
12. con mắt	'eye'	25. con tơ	'hand/skein of silk'
13. con mực	'stick of Chinese ink' (archaic)		

While at first glance there appears to be no basis for the animate classification of these items, closer scrutiny reveals that the majority of these nouns is indirectly linked to the concept of life and/or human activities. Thus, the animate status of the term for 'knife' can be explained by the fact that it once was an essential survival tool. Other words denote entities which are of general existential importance (both negatively and positively), and

still others depict activities which are carried out by humans. Notable examples are the nominals connected with 'water', which, on one hand, is clearly a life-sustaining element and, on the other, a life-threatening force (e. g., 8, 14, 19). Also, since Vietnam has been essentially a rural society in which people earned their livelihood as farmers, the significance of 'water' becomes clear and might explain the fact that the words for 'river', 'canal', and 'dam' were elevated to animate status. Similarly, the animate designation of entities such as 'skein of silk' can be explained on the basis of their economic value.

Human activities of a playful nature are exemplified by the nominals for 'playing cards', 'pawn', 'dice', and 'teetotum' and, therefore, are indirectly related to the human domain. The significance of words connected with transportation (e. g., 2, 9, 21) is less transparent. However, roads and waterways are important economically and, in earlier times, were the only avenues of communication among people. Therefore, economic value and possibly communicative needs might have been considered vital enough to include these terms in the animate category.

Comments made by one informant greatly aided in the tentative interpretation of such words as 'postage stamp', 'seal, stamp', 'stick of Chinese ink', and 'computer chip', which are all of foreign origin (e. g., 'tem' < French 'timbre'; 'chip' < English 'chip'). The common denominators that connect these items are the aura of officialdom, control and political/economic power. According to the informant, Vietnamese people have always made special efforts not to affront those who controlled them. Since China and France were, historically, the two dominant foreign powers, it might be plausible to posit that, for purposes of self-preservation, the Vietnamese included borrowings from Chinese and

French in the animate domain to show 'respect', generally a dominant and pervasive notion in Vietnamese culture. In contrast, the inclusion of the English 'computer chip' as an animate term might reflect the growing influence and significance of modern technology in Vietnam. However, neither one of the informants was able to support the foregoing assumption. Particularly one of them insisted that 'con' in this case is nothing more than an indicator of "some thing". In other words, no special significance whatsoever was attached to the usage of 'con' in conjunction with 'computer chip'. Some thoughts pertaining to this informant's reaction will be offered at a later point.

A thoroughly intriguing instance of animate classification concerns the term for 'pupil (of the eye)' (#15), the only body part thus classified and the final example discussed here. In western thought, "eye" is often interpreted as a "mirror of the soul", representing not just the physical aspect of the term but, more comprehensively, symbolizing the totality of the human essence, which consists of body and spiritual qualities. The interpretation in Vietnamese appears to be similar. As one informant explained, "there is nothing more alive than eyes."

3.4.3.2 Classification of humans

The most complex area of animacy, as noted earlier, concerns expressions with human referents whose general classification can be best described, as alluded to earlier, in terms of Denny's (1976) notion of social interaction, which is, furthermore, highly culture-specific. Both aspects are the focus of the following overview.

More general terms for humans and those referring to certain other "humans" (dis-

cussed below) occur with the animate classifier 'con' (con người 'human being', con trai 'son', etc.). In these instances, 'người' functions as a class noun rather than as a classifier. Most prominent, however, is the usage of 'người' as a classifier. In this role it commonly occurs in three ways: (1) It precedes kinship terms, (2) it gives some indication of a person's occupation, and (3) if followed attributively by stative or functive verbs, it indicates such additional features as age, social status, and physical characteristics. Examples for each are given below (based on Nguyen, 1957, p. 133, and Emeneau, 1951, p. 101):

- | | |
|---------------|-----------------|
| (1) người cha | 'father' |
| người bà | 'grandmother' |
| người vợ | 'wife' |
|
 | |
| (2) người thợ | 'worker' |
| người bếp | 'cook' |
| người phụ xe | 'rickshaw man' |
|
 | |
| (3) người già | 'an old person' |
| người điếc | 'deaf man' |
| người nghèo | 'poor man' |

More specific classifiers for humans reflect status and degrees of intimacy or familiarity in intricate detail. Many, but not all, of these classifiers are homonymous with kinship terms. They typically occur with terms for non-consanguineal relatives, but not consistently; e. g., the nouns denoting uncles and aunts can be alternatively classified with 'người' or, to express respect, with 'ông' or 'bà' (Nguyen, 1957, p. 135):

- | | |
|---------------|---|
| người/ông bác | 'uncle, paternal, older than one's father' |
|
 | |
| người/bà di | 'aunt, maternal, younger than one's mother' |

The two classifiers, 'ông' (grandfather; respected male person) and 'bà' (grandmother; respected female person) are of particular importance in human interaction and, as mentioned in conjunction with unusual classifications of animals, have tremendous social implications. Thus, most human terms alternatively can be classified with 'ông' or 'bà'. In these cases they express the highest degree of respect for the official position and age of a person. In some instances, they are obligatory (Emeneau, 1951, p. 102):

ông sư	'Buddhist monk, priest'
ông giáo sư	'professor'
ông tổ	'male ancestor'
bà tổ	'female ancestor'
ông thần	'deity, divine being (non-Christian/Buddhist)'
ông vua	'king'
bà hoàng-hậu	'queen'

Special notice must be taken of the fact that high social rank alone does not necessarily call for the usage of the two honorifics. Higher age, regardless of social status, is the most significant criterion for respect in the family and in the society as a whole. Even beggars (Nguyen, 1957, p. 139; informants) are respectfully referred to as 'ông lão ăn mày' (the old beggar) and 'bà lão ăn mày' (the old woman beggar). In fact, age is so important that another special classifier exists: The kinship term 'cụ' (maternal or paternal great-grandparent) functions as a classifier when it is added to 'ông' or 'bà' to denote very old people (Nguyen, 1957, pp. 138-139). Thus, there is linguistic ranking which reflects a gradual increase of respect as a person grows older. Examples provided by one informant clearly illustrate the gradient nature of the "age/respect" phenomenon:

thầy		'teacher (general)'
(nam)	giáo viên	'young male teacher'
(male/little respect	teach little)	(below 30 years of age)
thầy	giáo viên	'older male teacher'
(teacher/more respect	teach/some-	(30 to 55 yrs. of age)
one who works for someone)		
ông	thầy	'old male teacher'
(oldest/highest respect/male teacher)		
(nữ)	giáo viên	'young female teacher'
(female/little respect	teach little)	
cô	giáo	'older female teacher'
(paternal aunt/more respect	teach)	
bà	thầy	'old female teacher'
(oldest/highest respect/fem.teacher)		

The behavior of 'thầy' is similar to that of 'người' in that it also occurs as a full noun, meaning 'master, teacher', and as a classifier. In the latter role, it is used as an honorific classifier for *young* but *educated* men in elevated social positions as well as for the names of older (and presumably) wiser persons. The fact that a special classifier is used in such instances suggests that educational level or, perhaps more precisely, knowledge is a close second to the criterion of age in the determination of social importance. The informants agreed with this interpretation and repeatedly stressed the significance of education in Vietnamese society. The examples are from Nguyen (1957, p. 138):

thầy đồ	'scholar (versed in Sino-Vietnamese letters)'
thầy thông	'interpreter'
thầy lý	'village mayor'

thầy kiện 'lawyer'
thầy Trang-tử 'Tseng Tze'

There are several other "human" classifiers reserved for special denotations, but for the sake of brevity they will not be considered here (for further details, cf. Nguyen, 1957, pp. 133-142). However, there remains one aspect of human classification which cannot be omitted because it invariably surfaces in languages and is expressed linguistically in one way or another: This is the classification of the less fortunate and less powerful members of the human race and of all those whom societies consider undesirable elements. Similar to the pejorative utilization of the neuter article in German and the 7/8 noun class in Swahili, Vietnamese possesses several classifiers which have derogatory meaning, none of which is a kinship term.

Especially the treatment of young children is startlingly similar to some aspects of classification in German where, as one might recall, the offspring of humans and animals alike are delegated to the neuter gender, presumably because they lack sexual salience and influence. In Vietnamese boys and girls are linguistically separated from each other, from older members of the family, as well as from other humans by the animal classifier 'con' (con trai 'son', con gái 'daughter'). According to one informant, an even lower position appears to be indicated by the alternate use of 'đứa' for children under eight years of age. Additionally, the social status of a young person is a criterion for special classification. For example, a mandarin's son was once referred as 'cậu ấm'. The special classifier 'cậu' literally means 'uncle', and the entire term 'cậu ấm' has survived as an expression denoting the (oldest) spoiled little boy. Older boys and girls in subservient positions are

singled out by 'thằng' and 'con' (Nguyen, 1957, p. 139):

thằng chăn trâu	'the buffalo boy'
thằng mõ	'the village crier'
con sen	'maid'
con ở	'maid servant'

Yet another set of special classifiers singles out those males and females whose behavior is morally unacceptable because it deviates from social norms (e. g., **đồ du-côn** 'thug'; **mụ tú bà** 'madam'; **tên tù** 'convict', etc.). Included in the set are also classifiers which denote those unfortunate ones who have some physical or mental defects and even some which refer to abstracta depicting undesirable economic conditions. Cases in point are the previously mentioned classifier 'thằng', which denotes young persons in low social positions, and the animal classifier 'con', used, for example, for non-adult family members, both of which assume an even stronger derogatory sense in the following examples (Nguyen, 1957, p. 139). It is noteworthy that derogatory terms for males are not classified with 'con', a fact that possibly, analogous to German, makes the denotation of females the marked construction.

thằng hề	'clown, farceur'
thằng lùn	'dwarf'
thằng bần	'poverty'
thằng móc túi	'pickpocket'
con đĩ	'harlot'
con điên	'mad wench'

In sum, the system as a whole shows evidence of a finely differentiated scalar classifi-

cation of the human domain, marking the extreme points of humanhood and providing an array of additional classifiers which cover the many degrees of humanhood allotted to intermediate levels. Therefore, the initial animacy hierarchy suggested by Comrie (1989, p. 185), human > animal > inanimate, seems insufficient for the purpose of generalizing the situation in Vietnamese. The data suggest an ordering which recognizes several additional focal points on the animacy continuum, as shown below. The ordering includes the most frequently occurring classifiers and also tries to convey the fact that there is no clear-cut boundary between the world of the living and the realm of the non-living:

elevated human > human > lesser human > animal > lesser animal
 ông/bà người con con cái

Obviously, the above illustration is extremely simplified and does not reflect the complexity and/or variety of parameters present in the classification; e. g., it is not unidirectional and, furthermore, subject to constant modifications in line with changes in the life style and social conditions of Vietnamese speakers, as well as to the unique requirements of seemingly all speech situations. Luong's (1990) detailed description of Vietnamese discourse practices relating to the numerous alternatives and fine nuances in classifier usage permits glimpses of a social structure which - for all practical purposes - is incomprehensible to a non-native observer. Thus, "the overall pattern [of the classification of animate entities in Vietnamese] is one of a complex intertwining rather than of a single, linear hierarchy" (Comrie, 1989, p. 199).

There remain two last questions with respect to the classification of humans which

were not addressed at all in available sources: How and when did social parameters attain their synchronic level of complexity? Was there originally a more unitary human category without social gender distinctions? If more relevant historical data could be uncovered, perhaps more insight could be gained into the influence of social dimensions in other more grammaticalized classificatory systems.

3.5 Aspects of diachronic development and grammaticalization

Some scholars assume that classifier systems in general developed after the languages in question lost their old morphology (presumably initiated by familiar processes of phonological erosion), with polysyllabic words becoming monosyllabic, which, in some cases, became again polysyllabic (primarily disyllabic) (Solntseva, 1990, p. 139). The most far-reaching effects of these changes were in the area of syntactic relations which had been formerly expressed by morphological devices; i. e., once the morphology of a language had disappeared, other elements had to be recruited to take over the functions of the lost morphological markers. Similar processes have been discussed previously with respect to German and Swahili. As illustrated in some recent theories regarding the German nominal paradigm, if crucially important elements of reference and definiteness/indefiniteness are lost in processes of morphological attrition, they must be replaced by other devices which, among other alternatives, can be classifiers, as is the case in Vietnamese and similar languages. But what is the source of classifiers? Dixon (1982, p. 170-173) speculates that they have evolved from (generic) nouns, a view shared by others. Mithun (1986, p. 388) cites the Cayugu (Iroquoian) generic term for 'domestic animal' and the Muduruku (Tupi stock, Brazil) generic word for 'meat' as examples of expres-

sions retaining their generic sense when used as classifiers, but points out that classifiers more frequently originate from concrete nouns with initially narrow scope. Erbaugh (1986, pp. 428-430) gives a fascinating account of the history of several general classifiers in modern Mandarin which emerged from very specific nouns. For example, 'gè' had a single referent, bamboo, some 3400 years ago. In the course of time its meaning became more and more generalized (bamboo > the lengths of bamboo > arrows > arrows, candles, dogs, chickens, horses > fruit, birds, people), and it finally emerged as the general classifier for people and unclassified objects, a role it has retained to this day. For the seemingly odd combination of *bamboo* and *humans* Erbaugh (1986, p. 430) offers the following explanation:

Chinese has never had a separate classifier for either humans or animates; the *vertical, individual, upright quality* of bamboo, as well as its widespread but crucial value, apparently reinforced the generalization of gè from bamboo to human beings (emphasis added).¹²

Similarly, Bisang (1993, pp. 3-7), who investigated the nominal paradigm of White Hmong, maintains that in the course of grammaticalization, nouns, earlier referred to as "class nouns", are especially vulnerable to losing semantic import while simultaneously assuming a gradually increasing operational load in terms of the classification and individualization of accompanying specific nouns, with referentialization as a possible by-product of the first two operations. He posits the following developmental steps:

Noun > Class Noun > Quantifier > Classifier

The lexical organization of Vietnamese nominals generally seems to support the applicability of such an evolutionary path although nothing is known about specific proc-

esses because, as far as could be ascertained, no attempts have been made to reconstruct earlier classifier sets. Nonetheless, the structure of lexical taxonomies does suggest that classifiers do indeed evolve from certain concrete nouns which, particularly when juxtaposed with other lexical items, undergo semantic and morphological attrition and gradually assume more general characteristics which initially draw related words into their widened semantic scope and eventually might permit their extension to domains far removed from their semantic origin. The two "general" classifiers *con* and *cái* are cases in point.

The data also suggest that classifiers evolve in a wave-like fashion producing forms of diverse semantic transparency, thus generating a continuum from noun to most generalized classifier and confirming observations made by various linguists (cf. introductory remarks) that classifier status is not an either/or question.

3.6 Current tendencies

The most significant generalization which emerged from the elicitation sessions concerns the obligatoriness of classifier usage, i. e., the use of the general classifiers '*cái*' and '*con*', at the expense of the more specific ones, is steadily increasing, notably among young speakers. Furthermore, even the utilization of '*con*' and '*cái*' appears to be losing prominence in everyday discourse situations. However, when used, the general demarcation between the animate and inanimate domains is often blurred; i. e., '*con*' is no longer strictly interpreted as a marker of animacy. This was illustrated, for example, in the usage of *con* in conjunction with the word for 'computer chip' (cf. section 3.4.3.1). This fact

might suggest that the language is moving in the direction of a classificatory system that relies more heavily on a *semantically* based bi-partite (animate vs. inanimate) division of the nominal lexicon. In all, however, the present-day semantic transparency of many remaining Vietnamese classifiers is in stark contrast to the previously examined classification systems of German and Swahili. Consequently, claims of arbitrariness in nominal classification do not apply to Vietnamese.

4. Noun classification in Dyirbal

4.0 Introduction

Dyirbal is one of approximately 200 Aboriginal languages which have been identified on the Australian continent. About 50 of these indigenous languages have died out; Dyirbal is another dying language although both native councils and governmental agencies have recently begun to expend efforts to save the language from certain extinction. These efforts, however, may have come too late because fluent speakers of Dyirbal have nearly died out. As sad as the loss of yet another Aboriginal language must make anyone who takes an interest in language, the final stages of Dyirbal paradoxically allow close observation of changes which a language nearing extinction undergoes. In appropriate places of the following discussion, specific reference will be made to modifications in Dyirbal that might shed some light on changes occurring in other languages, thus enabling scholars to gain a better understanding of the nature of linguistic change in general.

Until the 1960's or so, little was known about Australian languages. This disinterest was apparently based on the prevailing conception that the languages of the Aborigines were the tongues of savages which did not warrant serious linguistic examination. This notion has been dispelled especially by the investigative work of Dixon who, probably more than any other linguist, has provided invaluable insights into the cultural and linguistic world of native Australians.

While Dixon's work encompasses aspects of all Aboriginal languages in Australia, its focus is on Dyirbal, a name used by Dixon for a group of closely related dialects (Girramay, Dyirbal, Mamu, Ngajan, and two other dialects which are linguistically

between Mamu and Dyirbal and are probably extinct by now) spoken in an area of North Queensland in the north-eastern corner of Australia. Since Dixon has given the most authoritative account of the language itself in his grammar of Dyirbal (1972) and provided insightful descriptions of the culture of the Aborigines and its profound ramifications for the language in other works (Dixon, 1980, 1982, 1984), the discussion of the lexical structure and the noun classification system of Dyirbal (including examples) is primarily based on data from his publications.

4.1 Brief overview of the Dyirbal noun phrase

Nouns constitute one of the major open word classes in Dyirbal and form the nucleus of noun phrases which can occur in virtually any sentential position without causing ambiguity. This is due to the rich inflectional case marking system, which is supplemented by extensive cross-referencing of core noun phrases in the verb. Dyirbal possesses a split case marking system; i. e., while pronouns have the nominative-accusative morphology which is commonly found in European languages, almost all nouns follow an ergative-absolutive pattern: The base form of nouns with zero inflectional realization is used as intransitive subject and transitive object, referred to as the absolutive case (Abs). Nouns occurring as transitive subjects (ergative case, Erg) and in other syntactic functions (genitive, dative, allative, ablative, instrumental) require inflectional suffixes. Modifying adjectives behave exactly like nouns (for detail, cf. Dixon, 1972, p. 42). The example below is from Dixon, 1980, p. 303. The forms of the ergative and instrumental coincide.

bala yugu bangul yara+ŋgu gunba+n bangu bari+ŋgu
it+Abs tree+Abs he+Erg man+Erg cut+Pres it+Inst axe+Inst
'The man is cutting the tree with an axe.'

The grammatical classification of nouns is discussed in section 4.3.

4.2 Structure of the nominal lexicon

Although only very sketchy information is available on the lexical organization of Dyirbal nouns, since no comprehensive vocabulary inventory has been compiled for any of the Australian languages let alone examined in terms of semantic organization, comments in relevant sources indicate the general presence of lexical taxonomies which, however, lack the equivalent of "unique beginner" and whose complexity depends on the semantic field. The absence of a more complete and rigid hierarchical organization in some areas might be related to the fact that "some of the most important lexemes in an Australian language can have a very wide range of meaning" (Dixon, 1980, p. 105). For instance, the word '*mija*' can be glossed as 'camp' or 'hut', 'group of people camped at a particular site', 'any past or potential camping site', 'any place of any nature', 'any parcel of land', 'the world', 'lair of any animal', or 'the sky above' (when referring to a place) (Dixon, 1980, p. 105). Perhaps this example suggests that '*mija*' should be interpreted as a general spatial concept which, without further elaboration, has remained functionally adequate for the small-scale Dyirbal communities where speakers are familiar with each other, "share a large background of pragmatic presuppositions, ... [and] the topic or referents involved in a communication are often at hand or at least visible" (Perkins, 1992, p. 92).

Yet another phenomenon could explain why generics are missing in some lexical ar-

eas. Dyrbal possesses two distinct sets of vocabulary, one for Guwal, the everyday language, and one for Jalḡuy, the avoidance style known as "mother-in-law language" (more fully explained at a later point). While Guwal has only basic expressions for certain species (e. g., lizards and possums), the Jalḡuy vocabulary contains only the corresponding generic terms (cf. Dixon, 1980, p. 61). Thus, some parts of the two vocabularies are in complementary distribution. It would be of interest to know whether or not this curious phenomenon also applies to mammals, for which Dyrbal has no generic terms.

Other irregularities concern generic terms which Dyrbal does possess; i. e., in some semantic fields a generic word does not cover all other members of the species. Some stinging trees, for example, are not in the scope of *yugu* 'tree'. In Dixon's (1972, p. 304) view, these gaps in lexical taxonomies are motivated by two factors, the first of which is functional and the second of which is related to Dyrbal mythology:

(1) There exist only those generic expressions which are needed to avoid vagueness. For example, Dyrbal possesses the generic *bayi wadam* 'snake' because the clear identification of the kind of snake might be impossible in certain situations. In contrast, because of distinct differences in size, no confusion can arise with respect to a kangaroo and a wallaby. Consequently, a generic term to cover the two is not needed and does not exist (Dixon, 1972, p. 304).

(2) Basic level nouns are frequently not covered by generic terms because their "semantic organization ... is related on many points to the mythological beliefs of the Dyrbalḡan" (Dixon, 1972, p. 303). The classification of birds provides particularly salient ex-

amples: Since the satin bird *balan badindila* is believed to have seized fire from the rainbow snake, its name, along with that of several other "mythological birds", is not covered under the generic *balan dundu* 'bird'.

The most highly structured and finely differentiated lexical system seems to exist in the human domain, especially with respect to the apparently rich basic kinship terminology which is governed by the distinction of established social roles and principles of politeness which are age-dependent and take into account "the relationship involved, the identity of the speaker, ... the identity of the addressee ... [and] socially determined contexts" (Dixon, 1980, pg. 109). For instance, if two brothers who are speaking between themselves refer to a sister, they will use *malgarra*. If the brothers' parents speak to them about the sister, they will use *yayin* if she is older than the brothers and *jaman* if she is younger. Yet a fourth term, *jurgay*, is employed if the brothers refer to the sister outside the immediate family. Levels of politeness are illustrated by different words referring to 'father' and 'father's brother(s)': *ɟuma* is the general term; to express a higher level of politeness, *bimu* refers to 'father's elder brother(s)' while *ɟuma* refers to 'father' and 'father's younger brother(s)' (Dixon, 1980, p. 109).

Body parts constitute another area in which an elaborate set of basic lexemes is found. Dixon's (cf. 1980, pp. 104-105) examples indicate an astounding array of very specific anatomical terms which is unparalleled in English and other European languages. The apparent preoccupation with the human body has had some interesting linguistic consequences in that many words denoting body parts have been metaphorically extended to refer to parts of trees, man-made objects, and geographical phenomena. For example,

binda means 'shoulder' and 'waterfall'; *julu* (anatomical rump) refers to 'butt of a tree' or 'spur, sticking out from the bank into a river', etc. (Dixon, 1980, pp. 109-110).

In summary, the Dyirbal nominal lexicon mirrors most distinctly areas which are of immediate concern to humans, namely their body, their existential welfare, and their social interaction.

4.3 Grammatical classification of nominals

The nominal lexicon of Dyirbal is divided into four distinct classes, and each noun has fixed membership in one of the classes. The only exceptions are a few kinship terms and words related to age groups which, depending on biological sex, are assigned to one of two classes (class I or class II) containing all nouns denoting humans. Examples are 'dada' (baby) and 'bimu' (father's elder brother or sister) (Dixon, 1972, p. 47).

Nouns are not marked directly for class membership. Instead the head noun of each noun phrase as a rule occurs with one, and only one, of four noun markers: *bayi*, *balan*, *balam*, or *bala*. These markers fulfill two important functions. (1) Their first element indicates location and visibility of the referent (Dixon, 1972, p. 45-46) as in:

- (a) *bala*- referent of noun is visible and THERE;
- (b) *yala*- referent of noun is visible and HERE;
- (c) *ɲala*- referent of noun is NOT VISIBLE.

The following sentence exemplifies two of the above possibilities (Dixon, 1982, p. 161; apparently the *-la* of *yala* is deleted in the ergative/instrumental case, cf. Dixon, 1972, pg. 45):

bala **diban** **ya-ŋgu-n** **yibi-ŋgu** **buran**
 (there-Abs.IV stone-Abs. here-Erg.II woman-Erg. look at)
 'The woman here is looking at the stone there.'

(2) The suffix of each noun marker specifies the class to which a particular noun belongs, i. e., it classifies it, and agrees with it in case. Class membership and nominative case are shown and exemplified below (for the full paradigm, cf. Dixon, 1972, pp. 42-46). The nominative of class I is irregular; i. e., the form is *bayi* instead of the expected **balal*; *-l* occurs in the ergative/instrumental *bangul*, the dative *bagul* and the simple genitive *bagul*:

Suffixes	Examples	
Class I: -l	bayi yaɾa	'man'
Class II: -n	balan dugumbil	'woman'
Class III: -m	balam wudu	'vegetable food'
Class IV: -∅	bala mala	'hand'

4.4 Principles of noun class assignment

As noted above, nouns in Dyirbal are divided into four grammatical categories, each of which is accompanied by a noun class marker which identifies class membership. But there is no evidence that formal criteria, i. e., phonetic or morphological elements of nouns, are decisive determinants in noun class allocation. Although there exists the kinship-determined affix *-dir* which is employed in kinship duals (Dixon, 1972, p. 234), this morphological device does not affect the "grammatical" categorization of humans. The absence of formal means of classification might partially be the result of extensive inter-language borrowing which is largely caused by a pervasive taboo system in Australian languages. That is, the usage of common terms for nominals is suspended, sometimes for

many years, if the name of a person who has died is in the slightest way reminiscent of such terms. In the interim, words from other languages are used instead. If one adds normal processes of language change to the foregoing, phonetic and/or morphological homogeneity of the nominal lexicon can hardly be expected.

Scholars are in agreement that it is the semantic content of nominals which determines to which of the four classes nouns are assigned, thus supporting Corbett's (1991) inclusion of Dyirbal in his account of predominantly semantic gender systems. One piece of evidence for the essentially semantic basis of the Dyirbal nominal lexicon is provided by the method of loan incorporation: Borrowed words are typically assigned to classes whose semantic content (cf. Table 23) fits that of the loan. For example, terms for white men are allocated to class I along with all other males; words denoting white women, like females generally and objects associated with fire (matches, pipes), are assigned to class II, consumable non-flesh items (fruit, flower, cake, wine) to class III, and the remainder to class IV (Dixon, 1982, p. 182).

4.4.1 Semantic criteria of noun class assignment

Trying to uncover the motivation for the existence of the four-part noun class system of Dyirbal is, again, a most difficult endeavor; in fact, the odd collection of nouns in the four classes had even Dixon (1982, p. 179) near despair and initially had made him wonder if Bloomfield's (1933, p. 280) judgment of gender assignment in German, i. e., that it lacks any discernible rational and/or practical basis, should also be applied to Dyirbal. The curious semantic make-up of the four noun classes is given in Table 23.

In spite of its heterogeneous content, Table 23 allows several generalizations with re-

spect to certain fundamental characteristics of each class (some were already noted with

Table 23

Semantic content of noun classes in Dyirbal
(Source: Dixon, 1982, p. 178)

I (bayi)	II (balan)	III (balam)	IV (bala)
men	women		parts of the body
kangaroos	bandicoots		meat
possums	dog		
bats	platypus, echidna		
most snakes	some snakes		
most fishes	some fishes		
some birds	most birds		
most insects	firefly, scorpion	honey	bees
	crickets		
	hairy mary grub		
	anything connected with fire or water		
moon	sun and stars		
storms, rainbow			wind
boomerangs	shields		yamsticks
some spears	some spears		some spears
(for fishing)	some trees		most trees and vines
etc.	etc.	all edible fruit and vegetables and plants that bear them	
			grass, mud, stones, noises and language, etc.

regard to loan incorporation): Humans dominate the first two classes; males are in class I, females are in class II. Non-human animates comprise a sizable number of nominals in class I. In addition to female humans, objects connected with fire, water, fighting (like all

entities related to danger) prevail in class II; non-flesh foods are in class III; everything else belongs to class IV. In sum, certain basic concepts are apparent in at least the first three classes. Dixon (1972, p. 308) provides the following assessment of important semantic notions of each class:

- Class I (bayi): animateness; (human) masculinity
- II (balan): (human) femininity; water, fire; fighting
- III (balam): edible vegetables and fruit
- IV (bala): a residue class, dealing with everything else

Especially the first two classes are further examined in the section on animacy (4.4.4).

4.4.2 Categorization

The four Dyirbal noun classes, in terms of their formal markers, constitute (nearly) discrete categories and disallow the establishment of a connection among them by means of superordinancy relations. In other words, there is no indication that these groups as a whole are structured along taxonomic principles of organization which have been shown to be applicable in German where, although not consistent, there is a definite link between the hierarchical ordering of German nominals and their gender assignment. Rather, their organization is loose; i. e., the grouping of certain nouns cuts across noun class boundaries; it is semantically determined and reflects a variety of pragmatic and culture-specific aspects. This can be exemplified by the linguistic treatment of various tree species. While trees are typically members of class IV (*bala*), the classification of some seems to be related to their physical height and/or the notion of harmfulness. For example, the words *balam gubungara* 'palm' and *balam daguru* 'umbrella palm' are members of class III (*balam*) and, at the lexical level, are not covered by the generic *bala yugu*

'tree' which, as expected, belongs to class IV. Trees which have the potential of inflicting injury on humans, e. g., *balan giyara* 'big softwood stinging tree' and *balan darjali* 'small stinging tree', are members of the *balan* (II) class, but only the big softwood stinging tree is covered by the generic *yugu* (Dixon, 1972, p. 303).¹³

Similar mythological and pragmatic, as well as other associative principles of categorization, become evident when one considers the range of curious objects prevalent in classes I and II. Assuming that these two classes primarily function as classificatory tools for humans and the "unmarked male" class I for other animates (animals, snakes and lizards, insects, fishes, etc.) which are unmarked for gender, one cannot help wonder about the pairing of such things as water, fire, and other dangerous things with women. What, if anything, do they have in common? Equally, at first sight there seems to be little reason in co-classifying human males with such implements as 'fishing line' or 'fish spear'. And yet, Dixon has been able to uncover a basis for the unexpected co-occurrence of certain nouns in certain classes. He, along with Schmidt (1985) and Lakoff (1987), among others, recognizes three basic types of associations which serve to relate members of class I and II to each other. The first, and by far the most conspicuous, is the association with myths and beliefs which apparently play a truly astonishing role in the world of the Dyirbal. Their obvious impact on nominal classification has prompted Dixon (1982, p. 179) to formulate the following rule:

If some noun has characteristic X (on the basis of which its class membership would be expected to be decided) but is, through belief or myth, connected with characteristic Y, then generally it will belong to the class corresponding to Y and not that corresponding to X.

This rule nicely explains the assignment of many exceptional nominals to the *bayi* (I)

and *balan* (II) classes; only in the case of some birds do class assignment and mythological classification coincide. This is illustrated in Table 24. *Expected* class membership is indicated in parentheses.

Table 24

Mythologically based noun classification in Dyirbal
(Source: Dixon, 1972, pp. 306-311)

Entity	Class	Rational for class membership
moon	I(IV)	Husband of the sun; perceived as male
storms, rainbow	I(IV)	Believed to be mythical men
sun	II(IV)	Wife of the moon; perceived as female
most birds	II(I)	Believed to be the spirits of dead human females; bird as bringer of fire, etc.
some birds (3 species of willy wagtails)	I(I)	Believed to be mythical men
crickets	II(I)	'Old ladies' in myths
some snakes (death adder)	II(I)	Possible mythical connection to 'seven sisters', believed to be a 'death adder in the sky'

The second, also powerful, association identifiable in the system is the marking of harmful and other important properties, for which Dixon (1982, p. 179) posits a second rule:

If a subset of nouns has some particular important property that the rest of the set do not have, then the members of the subset may be assigned to a

different class from the rest of the set, to 'mark' this property; the important property is most often 'harmfulness'.

Table 25 exemplifies the general applicability of the second rule to the *balan* (II) class. Expected class membership is again provided in parentheses. Some speculations concerning the inclusion of women in class II will be discussed in the section on animacy.

Table 25

Marking of important properties in Dyirbal classification
(Source: Dixon, 1972, pp. 306-311)

Entity	Class	Important property
some fish (stonefish, garfish)	II (I)	Said to be particularly harmful
some trees and vines	II (IV)	Stinging and thus harmful
hairy mary grub	II (I)	Stinging and thus harmful
anything con- nected with fire	II (IV)	Destructive and thus harmful
fighting	II (IV)	Destructive and thus harmful

The notion of *concept association* constitutes a likely third criterion for unusual classification. If the first rule above is stated in more general terms, i. e., if the reference to myths and beliefs is omitted, it can be said that nouns are attracted to the class to which they are most strongly linked. Thus, 'fishing line' and 'fish spear' are assigned to the *bayi* (I) class because of their close association with 'fish'. Reinforcing the link to class I, one could also argue that both implements have *functional* importance for men.

Lakoff (1987) expands the principle of concept association beyond the one-to-one relationship between an entity and a noun class by offering an idealized cognitive model which could explain the co-occurrence of several seemingly unrelated nominals or groups of nominals in one category. He argues that categories typically have both central and peripheral members; i. e., the individual members of a category are not necessarily equally representative of a particular category. Using Dyrbal as one of his examples, he postulates that men form the core or prototype of the *bayi* (I) class, that women do the same for the *balan* (II) class, and that both these central members can be linked to all other more peripheral members of these classes by various *domain-of-experience* principles which connect seemingly disparate members in a chain-like fashion and may be limited to specific cultures:

Complex categories are structured by chaining: central members are linked to other members, which are linked to other members, and so on. ... There are basic domains of experience, which may be culture-specific. These can categorize links in category chains. ... There are idealized models of the world - myths and beliefs among them - that can characterize links in category chains (Lakoff, 1987, pp. 95-96).

When one applies the principle of chaining to Dyrbal, some interesting and arguable category chains radiating from the central member 'women' can be constructed. The following examples are partly suggested by Lakoff (1987, p. 100), augmented by Mylne (1995, p. 384), and extended for illustrative purposes:

Class II:

(1) women (via myth) \Rightarrow sun (via relevant domain of experience)
 \Rightarrow fire (via property of being dangerous) \Rightarrow fighting spears

(2) women (via myth) ⇒ sun (via relevant domain of experience)

⇒ fire (via relevant domain of experience) ⇒ fireflies (via relevant domain of experience) ⇒ hairy mary grub (its sting feels like sunburn)

(3) women (via myth) ⇒ sun (via relevant domain of experience)

⇒ fire (via relevant domain of experience) ⇒ water (extinguishes fire)

Although there are still some interesting exceptions which include such terms as 'dog', 'platypus'¹⁴ and 'echidna' (porcupine), overall Dixon's observations and Lakoff's model do provide explanations for the classification of the majority of Dyirbal nominals. Both scholars, however, use caution by pointing out that some of their explanations might be mere speculations from outsiders who do not have and perhaps cannot have full understanding of the Dyirbal world. Yet their approaches are well within the realm of plausibility because they incorporate observations which seem to have at least some universal relevance: (1) Heavenly bodies play an important role in the belief systems of cultures world-wide and generally seem to be given special treatment in languages. Levinson (1995), for example, notes that

the solar system or at least some of its components are recognized in all cultures around the world. Across cultures, the sun and the moon are the components that draw the most attention because of their proximity to earth. ... Across cultures, people perceive stars ... in ways that are consistent with their social and cultural environments and their belief system (Levinson, 1995, p. 199-202).

(2) The element of danger is also frequently encoded linguistically. For example, in Ojibwa, the language to be considered next, danger is of such significance that it is not

only marked in the language, but permeates all aspects of social and verbal behavior. (3) Functional interaction between humans and important implements is often expressed through special grammatical coding. (4) Finally and perhaps most importantly, there is more than ample evidence that the human mind, through its capacity to use such "mechanisms of imagination ... as metaphor and mental imagery" (Lakoff, 1987, p. 7) establishes associations between entities which appear unrelated on the surface.

Lakoff's interpretation of the classificatory system of Dyirbal, however, has not remained unchallenged. Mylne (1995) vigorously opposes several of his basic tenets, charging that Lakoff's view is clouded by traditional explanations of the type of classification that is allegedly characteristic of many Indo-European languages, namely encoding of the bipolar opposition male vs. female, making men and women prototypical representatives of the systems. Specifically, Mylne (1995, p. 380) argues that

... Lakoff proposed a human sex-based categorization for Dyirbal, not because it best fits the data, but because as a speaker of a European language he is the possessor of an idealized cognitive model in which the noun class systems of European languages are (a) assumed to be based on sex, and (b) regarded as prototypical of noun class systems in general.

Mylne offers an alternate approach to Dyirbal noun categorization which, - he feels and attempts to justify, - not only accounts more adequately for the "exceptions" in the system, but also might provide a more realistic assessment of the Dyirbal world view. He proposes to interpret the Dyirbal system as a means of dealing with two significant concepts in the Dyirbal experience, viz. "potency" and "trouble", and suggests the following criteria for the assignment of nouns to the four classes (Mylne, 1995, p. 387):

(Class IV) *bala*: Non-potent things which contribute to, or at least do not disturb, harmony of living.

- (Class III) *balam*: Non-potent things which contribute specifically and importantly to harmony of living by serving as food.
- (Class I) *bayi*: Potent and ingenious beings and things which contribute to, or at least do not disturb, harmony of living.
- (Class II) *balan*: All things which are set apart as being associated with the disruption of harmony of living (and which are consequently regarded as potent).

Resorting to Aboriginal myths describing the advent of humans, animals, water, and fire on earth, Mylne (1995, pp. 389-390, p. 400) speculates that the *bala* class (IV) represents all those entities that were already in existence ("pre-creation infrastructure") when humans arrived, that the class lacks the potency of the new arrivals but that it is clearly beneficial to human existence. Similarly, he views the *balam* (III) class ("what of the pre-creation infrastructure can be safely eaten") and the *bayi* (I) class ("potent and generally benevolent creations") as essentially benign. That leaves the *balan* (II) class as the only class containing things that spell "trouble" as opposed to the desired state of harmony which "... is the norm, the standard, the ordinary, the goal; trouble is the "other", the nonstandard, the extraordinary, to be *avoided*" (Mylne, 1995, p. 387, emphasis added). Various kinds of avoidance behavior are recruited for explanatory purposes. For example, bandicoots and echidnas, whose *balan* classification is left unexplained in Lakoff's model, are to be avoided because a young person would violate social norms if he/she caught and ate them; they are reserved for old people (Dixon, 1984, p. 157; Mylne, 1995, pp. 393-394). Since these creatures are easy to catch, the pragmatic, socially motivated need to ensure the survival of the old and feeble might indeed be a better explanation for this peculiar taboo than the fact that the echidna can inflict wounds with

its sharp quills. Thus, it is its "non-obvious capacity to cause trouble" (Mylne, 1995, p. 394) which, in a cultural sense, accounts for its inclusion in the *balan* (II) class rather than just its dangerous quality. In this context, Mylne (1995, p. 394) also points out the interesting fact that the obviously dangerous alligator is found in the *bayi* (I) class instead of the *balan* (II) class. He believes this is so because the actual source of trouble is not the alligator itself but *water*, the alligator's habitat; it is water, where alligators happen to lurk, that needs to be avoided. Hence, water is found in the "trouble" *balan* (II) class, not the alligator.

In sum, while leaving room for the element of danger as a criterion of classification, Mylne does not view it as primary or decisive in all cases. In some instances, however, the primacy of "danger" is acknowledged. For example, we are reminded of the fact that 'dog' and 'dingo' (apparently wild dogs occasionally attack humans) are both classified with *balan* (Mylne, 1995, p. 388), suggesting that in the Dyirbal world the dog is not man's best friend, hence its inclusion in the *balan* (II) instead of the *bayi* (I) class.

Through various other examples involving all noun classes, Mylne attempts to show that the basis of the Dyirbal classificatory system is probably more subtle and more extensively influenced by cultural notions, notably avoidance behaviors, than (especially) Lakoff's model suggests. Ultimately, it just might not be possible to know, in its fullest sense, the intricate relationships among formal, mythical, social, and functional interactions which lie at the heart of the Dyirbal noun classification system (and, by extension, of any classificatory system). Most importantly, however, the proposals offered by all scholars clearly permit the conclusion that Dyirbal speakers carve up their physical and

cultural world into digestible portions that are functionally adequate for them. And this, after all, is the primary motivation for categorization.

4.4.3 Gestalt

Except for the possible distinction on the basis of relative size (the height of trees could be a factor in noun class allocation), there is no indication in available sources that the physical shape of entities plays a discernible role in the present-day nominal classification system of Dyirbal. However, even if the synchronic form of nouns does not exhibit any explicit signs of the encoding of Gestalt features as determinants of grammatical categorization, it might have played a role in evolutionary stages of Dyirbal which are no longer recoverable. The present-day division of Dyirbal nouns into a very small number of grammatical classes, accompanied by the lack of obvious categorizing in accordance with perceptual properties is in keeping with what seems to be a general tendency of more highly grammaticalized languages, viz. to exhibit fewer traces of Gestalt properties. This point is further pursued in the final discussion (cf. section 7.2.1).

4.4.4 Animacy

As noted before, two noun classes in Dyirbal, the *bayi* (I) class and *balan* (II) class, primarily serve the purpose of classifying animate entities. As indicated above, Dixon and Lakoff maintain that the *bayi* class comprises as its core members all human males and the majority of nonanimates while the *balan* class contains all female humans and only selected animals. For unknown reasons the isolated 'bee' is found in class IV; class III contains no animates. Therefore, for all practical purposes, a discussion of the linguis-

tic treatment of the concept of animacy can safely exclude the two latter classes.

Generally, there is consensus (Dixon, 1972; Schmidt, 1985; Lakoff, 1987; Corbett, 1991) that the division of terms referring to humans seems to be based on biological sex because, in normal usage, males and females are strictly confined to one class each, i. e., class I and II respectively. Only for special effects does transfer between class I and class II occur. For example, Dixon (1984, p. 83) notes that occasionally 'balan yara' (feminine marker plus 'man') is used to describe a hermaphrodite.

In contrast to humans, there is no categorical sex-based division for animals although Dyirbal speakers can elect to emphasize the biological sex of an animal by employing the respective noun class marker. Of course, this raises an interesting question: Why does the language not make a categorical male/female distinction in the case of animals? As briefly mentioned before, it is Mylne (1995, pp. 381-385) who challenges the traditional sex-based interpretation of the two animate noun classes in Dyirbal, alleging that Lakoff's interpretation of human males and females as prototypical representatives of the *bayi* and *balan* classes constitutes the orientation of someone who views the world of the Dyirbal through European eyes. Mylne argues that cross-linguistically there is little support for categorization based on biological sex. While he does not refer to the fact that the male/female opposition in the respective European languages is now commonly regarded as a more recent development, he cites several languages (Swahili, Japanese, Chinese, Indonesian) which do not differentiate members of the human domain on the basis of sex but use animacy in general and other dimensions, e. g., social status, for classification. He also wonders why Dyirbal speakers normally do not use a sex-based distinction for ani-

mals although the noun class system clearly has the potential to do so.

Mylne offers a subtle approach to human classification which is in keeping with his overall theory that the concept of "trouble (to be avoided)" is one of the fundamental notions in the Dyrbal world. To put it simply: He equates women with trouble in the sense that one could describe them as "the other, the extra-ordinary, that which is set apart as being associated with the potential to disrupt harmony" (Mylne, 1995, p. 392). Comments made by a native semi-speaker provide interesting evidence in favor of Mylne's view (but coming from a semi-speaker might, in fact, not have much to do with the traditional interpretation of womanhood):

... buni [fire] is a lady. Ban buni [class II fire]. You never say bayi buni [class I fire]. It's a lady. Woman is a destroyer. 'e destroys anything. A woman is a fire ... Water is still a woman" (quoted in Schmidt, 1985, p. 166).

Based on his "trouble (to be avoided)" hypothesis, Mylne (1995, p. 390) constructs the following four links between females and "otherness" in which he reverses Lakoff's prototypical argument and adds another cultural dimension to the mythical one:

- (a) The sun is a (prototypical) woman and wife, and it belongs to the balan class by the association with fire and hence trouble; therefore the same classifier is used for women....
- (b) It is not simply physical dangers which must be "flagged" linguistically; the many social avoidance behaviors demanded by Dyrbal culture require a similar linguistic response. The fact that it is women who are marked as troublesome indicates that these behaviors are seen as resulting primarily from the need for men to avoid women and/or femininity.
- (c) Women are regarded as intrinsically (by nature) troublesome. (Mylne reminds the reader of the fact that such a view of women is also typical of western cultures and reflected, for example, in the biblical story of the Garden of Eden.)
- (d) Women are regarded as the "other" human beings; the cognitive basis for the

balan class is a more subtle notion than simply trouble, being a notion of asymmetric otherness which includes both trouble (the "other" type of experience and/or potency) and female (the "other" type of person).

The second link above is of special interest here because it addresses a unique phenomenon of Aboriginal culture. Dixon (1980, pp. 58-65) describes in some detail the linguistic avoidance style (Jalquy 'mother-in-law language') which was obligatorily used in the presence of taboo relatives, who included: "(1) a ... parent-in-law of the opposite sex; and, by the symmetry rule, a child-in-law of the opposite sex; (2) a cross-cousin of the opposite sex - that is, father's sister's or mother's brother's child" (Dixon, 1982, p. 68). Violations of the linguistic avoidance style apparently could have severe consequences, as "anyone who persistently or deliberately flaunted avoidance conventions might well be speared" (Dixon, 1980, p. 60). Dixon assumes that the prevention of sexual contact between certain kin (those not eligible for marriage) was the primary motivation for this type of avoidance behavior. Mylne (1995, p. 392) prefers to believe that the custom put a social burden on men, who consequently placed women into the linguistic "trouble" class.

Aboriginal culture possesses another avoidance strategy which, although not used by Mylne in his argumentation, seems to add strength to his view: In some tribes men - and only men - had a secret language which was spoken exclusively by initiated men, used for ceremonial purposes, and never shared with women (cf. Dixon, 1980, pp. 65-68). Feeling compelled to create a special language could be interpreted as a social burden for men.

In all sources consulted, there is a conspicuous absence of any explicit statements regarding the general principle of influence as a prime determinant of animate status. Could

it be that Mylne's notion of "otherness", i. e., disruptive and/or dangerous forces in the Dyirbal universe which need to be avoided, constitutes the (hidden) dimension of influence? Part of his definition of the *balan* class (e. g., the reference to the ability to disrupt "harmony") seems to suggest that being potent equals being influential.

Leaving aside the ultimate motivation for the allocation of terms denoting males and females to separate noun classes, for the purposes of this paper it is important to note that traditional Dyirbal speakers have recognized the principle of animacy in their universe and have found it significant enough to encode it dominantly in their language. As a matter of fact, the male/female distinction is one of the major characteristics of the present final stages of Dyirbal and is especially transparent in the linguistic changes that have been recorded during the last few decades.

4.5 Evolution of the Dyirbal noun class system

The origin of the Dyirbal noun class system is uncertain. However, Dixon (1980, pp. 272-273; 1982, pp. 170-173) offers a tentative scenario for its development. He notes that many Australian languages have sets of generic nouns which accompany specific nouns in any noun phrase and, for all practical purposes, function as classifiers. For example, the sentence 'The old man speared a wallaby' literally translated into some of these languages would yield 'The *person* old man speared an *animal* wallaby'. Therefore, Dixon believes that the grammatical system of noun classes in some northern languages developed out of the inclusion of generic nouns/classifiers and specific nouns in the same noun phrase and, in the modern form of these languages, became the syntactic pattern *prefix* (derived from the generic noun/classifier) plus specific noun. Although the developmen-

tal path of Dyrirbal must have been different because noun classes are indicated by a *suffix* to a determiner which accompanies a noun, Dixon still considers it a distinct possibility that the previously mentioned pre-Dyrirbal syntactic pattern of *determiner + generic noun + specific noun* has developed into the sequence *determiner + noun-class-suffix + specific noun* and believes that a reflex of such a development is retained in the *balam* (III) class which contains mainly terms for edible non-flesh food, including the word for 'honey' (*mayi*). Referring to Dyrirbal's neighboring languages and others in the Northern Territory and Western Australia which have not developed noun classes but show the generic 'mayi', Dixon speculates that this word could have been the origin of the *-m* suffix in *balam*. He states:

Both the Yidiny [a classifier language spoken north of the Dyrirbal territory] and Dyrirbal phenomena may well have developed from an original situation of the same type ... [because] Yidiny classifiers and Dyrirbal noun classes appear to do roughly equal work. They both systematise important information about cultural attitudes - that certain things are considered edible, that such-and-such is thought dangerous, but this would have been simpler than that shown by either modern language. We can suggest that earlier stages of both languages may have had smallish sets of a half-a-dozen or so classifiers, used fairly optionally and haphazardly in the first place. The small set of classifiers in pre-Yidiny has increased in size and semantic complexity to yield the modern set.... The small set of classifiers in pre-Dyrirbal evolved in a quite different direction, and developed into an obligatory morphological category, a closed grammatical system (similar, in grammatical status, to systems of tense, case, etc.) (Dixon, 1982, pp. 204-205).

Support for Dixon's assumption is provided by the evolution of other languages; e. g., as noted in the discussion of Swahili, the noun class system of Bantu languages is widely believed to have evolved along a similar route.

4.5.1 Grammaticalization and recent language changes

Earlier, reference has been made to the fact that the survival of Dyirbal is highly questionable because only a few fluent speakers of the language are left. But since there remain sufficient semi-speakers and others with varying degrees of linguistic competence, Schmidt (1985, 1991) was able to conduct an in-depth investigation of the developmental stages of Dyirbal which sheds not only some light on the course of a language driven to extinction but also on the possible evolutionary path of other languages, as well as on general grammaticalization patterns.

Schmidt's findings show remarkable consistency in the accelerated changes which Dyirbal is undergoing. These changes affect the entire structure and semantic make-up of the language and have profound consequences for the nominal paradigm. The following account of Schmidt's (1985, pp. 45-125) findings summarizes some of the general structural and semantic changes in Dyirbal grammar. Effects on the noun class system are given special consideration:

(1) Most notably, there is dramatic but systematic reduction in the scope and function of the Dyirbal case system, which is accompanied by the loss of agreement rules and simultaneous gradual rigidification of word order. Schmidt (1985, p. 111) sketches the stages in word order change the following way (the summary below serves as a key for the subsequent generalizations; A indicates "agent/transitive subject" while O denotes "object" and is in bold print):

- (a) A-O-V for pronominal A NPs
- (b) **O**-A-V for nominal A NPs
- (c) A-**O**-V for all A NPs

(d) A-V-O = English word order

1. Speakers of traditional Dyirbal employ free word order but show evidence of preferences (a, b).
2. Fluent young Dyirbal speakers show an intermediate stage of change (c).
3. Less fluent young Dyirbal speakers use English word order (d).

Ergative - absolutive case marking undergoes gradual allomorphic reduction and eventually is replaced by a nominative - accusative type system in which syntactic function is indicated by strict word order (analogous to English). The difference between the traditional and new structures is evident in the following examples (from Schmidt, 1985, p. 49 and p. 52):

Traditional Dyirbal: guga-ru baja-n jugumbil
(goanna-ERG bite-NONFUT woman)
'The goanna bit the woman'

Present-day Dyirbal: gugar baja-n ban jugumbil
(goanna bite-NONFUT she woman)
 A V O
'The goanna bit the woman'

(2) Peripheral case forms (ablative, dative-allative, locative-aversive, instrumental, genitive) are either collapsed, i. e., are marked by a single affix or cease to be marked by suffixation. In many cases English prepositions have taken over case functions; another alternative is no marking. Apparently, the kind of confusion which can be assumed to be the inevitable result of this massive simplification has not materialized. Schmidt (1985, p. 59) reports an intriguing incident which might be indicative of very subtle shifting of the informative load from case roles to other sentential elements. In the sentences below, one of her informants used the locative affix for instrumental, dative-allative, and ablative

functions:

Instrumental: η aja balga-n yara yugu- η ga
(I hit-NONFUT man stick-LOC)
'I hit the man with a stick'

Allative: balan mu η an-da waymba-nyu
(she mountain-LOC walkabout-NONFUT)
'she walked to the mountain'

Ablative: η aja yanu-n mija- η ga
(I no-NONFUT house-LOC)
'she went from the house'

The native speaker insisted that the sentences were not confusing because the underlying case function was clarified by the *semantic content of the verb*. For example, 'walk to' signals motion away from the speaker and takes an allative noun phrase in traditional Dyirbal. Since, in the modern speaker's mind, the verb alone sufficiently describes the event (i. e., movement *toward/away* is part of the semantics of *hit, walk, go*), the speaker apparently feels that no special case is necessary.

Although thoroughly speculative, the infusion of semantic properties (e. g., expanding the scope of verbal semantics in the examples above) into the grammar of a changing language does seem to constitute one way in which speakers, confronted with the need for unambiguous communication, compensate for the reduction and/or loss of other usually formal features of their language. As one might recall, processes of resemanticization have been postulated for the affective lexicon of German and for the classification of some Swahili nouns.

(3) Semantic changes in the nominal classification are as dramatic as structural changes. The system of traditional distinctions, as outlined previously, has been reduced

to a tripartite division of the nominal lexicon into male, female, and "all else" categories; i. e., the system is simply based on the opposition of inanimate and animate, the latter of which is further subcategorized on the basis of biological sex. It is interesting to note that this tripartite organization of nominals is identical to that in German and seems to decide the Lakoff/Mylne dispute in favor of Lakoff. The response of one informant, shared by others, adds some validation to the foregoing generalization (Schmidt, 1985, p. 165):

I don't know why we're doin' all this. It's jus' simple. If it's male it's bayi [Class I] an' female is ban [Class II], an' things - jus' bala [Class IV].

Although English contact cannot be discounted as a contributor to the establishment of the animate vs. inanimate classification, it is also plausible to posit that in cases of language change involving considerable reduction in the number of nominal categories, the parameter of animacy - at the expense of other semantic criteria - can gain significantly in salience (cf. also the discussion of Swahili in section 2.5), "thus suggesting that animacy is a universal conceptual category that exists independently of its realization in any particular language" (Comrie, 1989, p. 186).

(4) Simplifications in the semantic base of Dyirbal have led to substantial recategorization and loss of traditional associations (Schmidt, 1985, esp. p. 161 and p. 168):

1. Classes III and IV are neutralized; i. e., class III, which in traditional Dyirbal marked edible non-flesh food, is lost.
2. The class transfer rule marking harmfulness (traditionally class II) is weakened and reduced (by young Dyirbal speakers) to one concept, femininity. The transference rule marking mythological associations is retained by fluent speakers (underscoring its still powerful influence) but eliminated by less-fluent (i. e., younger) speakers.
3. The fire category is reassigned from class II to class IV by less-fluent speakers

but retained by fluent ones. The fighting category is reassigned from class II to class IV.

4. Class assignment by concept association is dropped. Such items as 'fish spear' and 'fishing line' (traditionally class I) are reassigned to class IV.
5. By analogy previously "unexplained" exceptions of the traditional class II are reassigned to either class I or class IV (e. g., 'dog' - new class I; 'stinging nettle' - new class IV).

In sum, although the influence of English most likely plays a significant role in the linguistic changes which have occurred in Dyirbal over the last 25 years or so, it seems fair to say that these changes also mirror the stages of normal language changes in accelerated form: The formal and semantically rich traditional grammar has undergone radical simplification and reshuffling accompanied by innovation and fossilization (for detail of the latter, cf. Schmidt, 1985, p. 49, p. 117, p. 179), aspects which are especially reminiscent of diachronic processes observed in German and Swahili.

4.5.2 The current state of affairs

While some of the changes in present-day Dyirbal can be considered "normal" processes of evolution and/or grammaticalization, i. e., simplification, rigidification, and the introduction of periphrastic constructions, etc., the magnitude of changes within a very small time frame undoubtedly goes beyond what could be considered "normal". Instead, it seems reasonable to posit that language-external factors have brought about the relatively sudden restructuring of the Dyirbal language. They most likely include but might not be limited to the following: (1) Since the arrival of western settlers, Dyirbal culture, which evidently constitutes the underpinning of the language, *and* the language itself have been ruthlessly ridiculed which has caused Dyirbal speakers to develop such a pro-

found sense of inferiority that younger speakers no longer identify with their cultural and linguistic heritage. This fact is reflected in the disappearance of the linguistic expression of mythical associations in the Dyirbal noun system and the reluctance of young speakers to use Dyirbal even in the privacy of the home. (2) The language of education which has become accessible to Dyirbal children is almost exclusively English, as is the language used in the news media and all other types of communication (Schmidt, 1991, pp. 117-120). (3) Additionally, the language has developed elements which might be related to processes of pidginization. A good case in point is the *non*-marking of peripheral cases.

In spite of this large-scale restructuring process, Dyirbal cannot be claimed to be an example of catastrophic language change. Rather, it has undergone adjustments which might seem extreme but are a necessary response to overwhelming external pressures.¹⁵ From a linguistic point of view, Dyirbal could continue to be active because it is functionally adequate. Although the continuing replacement of its pragmatic range by English and its low prestige seem to ensure its demise, its survival is still in the realm of possibility. After all, its speakers have demonstrated the resilience of their language which, although exposed to massive attempts at extinguishing it along with its speakers, went through an astonishing process of adaptation, which is a monumental accomplishment by those who have survived, language and speakers alike. Therefore, the ultimate fate of Dyirbal will not be decided by outside forces but "rests with the attitudes of the speakers and their estimation of its [Dyirbal's] social and political value" (Schmidt, 1985, p. 233).

In the general context of this paper, the examination of the traditional and current noun classification system of Dyirbal substantiates the postulated non-arbitrariness of lin-

guistic categorization. However, the traditional system, in particular, also clearly indicates that an understanding of such systems can only be approximated if language is understood as the total expression of all human experiences.

5. Noun classification in Ojibwa

5.0 Introduction

Ojibwa, a member of the Algonquian language group, is one of the three largest indigenous American languages. It has many local varieties and is spoken by approximately 50,000 speakers in Minnesota, Wisconsin, North Dakota, Montana, and in several Canadian provinces. Since in many cases the relevant literature contains information applicable to Algonquian in general, reference to other members of this language family (e. g., Cree, Fox, Shawnee, Delaware, and Blackfoot, among others) will be made whenever it helps to illuminate the discussion of Ojibwa.

A cursory inspection of Ojibwa immediately reveals that the language is structured differently from those discussed previously. Instead of clearly separated constituents, an entire sentence often consists of a single form which is made up of word stems plus a variety of inflections. For example, the sentence 'we don't look at them' corresponds to the expression 'giganawaabamaasiwaanaanig' (Nichols and Nyholm, 1995). Therefore, applying the principles of morphological typology, Ojibwa is customarily classified as a polysynthetic (or incorporating) language which also has elements of agglutination; these facts must be taken into account in the discussion of its nominal lexicon.

5.1 Overview of Ojibwa nouns

Because Ojibwa is a largely polysynthetic language with many highly complex structural features, the following discussion of its nominal lexicon is limited to a few important highlights.

Ojibwa has a distinct noun class system which is comprised of two gender classes, viz. animate and inanimate, but many typical characteristics of nominal classes in European-type languages are absent. Instead, much of the information expressed by the nominal morphology of European languages is part of the verbal complex, a structural peculiarity of polysynthetic languages. It is characteristic of these languages, many of which are found in North America, to share "the tendency to develop their morphological complexity primarily within their verbs" (Mithun, 1988, p. 442). Although this generalization also applies to Ojibwa, it exhibits some major European-type aspects of nominal marking by means of suffixation: Number, i. e., plural, is expressed directly on the noun, simultaneously revealing its gender. Thus, plurals ending in *-g* are animate (e. g., *ininiwag* 'men'), while those ending in *-n* are inanimate (e. g., *mookomaanan* 'knives'). In addition, Ojibwa expresses the diminutive through nominal affixation. Other noun forms have no equivalent in European-type languages. (1) Locative expressions are indicated by nominal affixes; they constitute the adverbial form of a noun stem indicating location (in, at, to, from, etc.) or comparison. (2) Special morphological devices are used in the case of so-called dependent nouns. These are obligatorily possessed nouns which always have a personal prefix before the stem. The following examples illustrate the morphological possibilities of autonomous nouns (from Nichols and Nyholm, 1995). Affixes are in bold print.

(1) Animate noun:

Singular: *igwe* 'woman, queen (card)'

Plural: *igwewag* 'women'

Diminutive: **ikwens** 'little woman'

(2) Inanimate noun:

Singular: **oodena** 'town'

Plural: **oodenawan** 'towns'

Diminutive: **oodenawens, oodenaans** 'small town'

Locative: **oodenaang** 'in, to, from, etc. town'

(3) Animate dependent (possessed) noun:

Singular: **nijikwe** 'my (female's) female friend'

Plural: **nijikweg** 'my (female's) female friends'

Diminutive: Not indicated in source

(4) Inanimate dependent (possessed) noun:

Singular: **nininj** 'my hand, my finger'

Plural: **nininjiin** 'my hands/fingers'

Diminutive: **nininjiins** 'my small hands/fingers'

Locative: **nininjiing** 'in, from, etc. my hands/fingers'

Besides the functions expressed in the nominal morphology, the Ojibwa noun, in keeping with the above general statement concerning polysynthetic languages, is intimately connected with the verbal paradigm. In fact, the overall role of verbs by far outweighs that of independent sentential elements; i. e., by forming intricate complexes, verbs are able to perform the functions of a variety of entire phrases in other languages. Therefore, it is not surprising that the number of verbs in the Ojibwa lexicon is much greater than that of nouns. For example, Nichols and Nyholm (1995) list 74 different

verbs denoting specific actions of specific participants, aspects which in English are expressed by the basic verb 'go' plus additional constituents.

In the context of this paper it is of crucial significance that parts of the verb complex serve as the fundamental organizing and classificatory tools in the language. Thus, in most cases, person, number and class/gender of both the subject and object are sufficiently expressed by affixes attached to the stem of the verb, making the use of independent nouns and pronouns optional when the context of their use is clear. For example, the subject of simple declarative sentences is obligatorily expressed by a series of verbal prefixes which indicate first person singular subjects (*in(d)-/ni-*), second person singular subjects (*gi(d)-*), and third person singular subjects (\emptyset). Therefore, separate nouns or pronouns are only necessary for purposes of discourse-related specification or emphasis. The illustrations below (from Freund, 1980, p. 49) are for intransitive verbs. In the plural and with transitive verbs additional suffixes co-occur with the prefixes indicated above; word order is relatively free:

Prefix only: (\emptyset)anoki 'he is working'

Dem. + noun + prefix: a^vaw inini (\emptyset)anoki 'that man is working'

Pronoun + prefix: ni:n ind-anoki 'me, I am working'

An additional special phenomenon of the verb complex with relevance to animate nouns is the so-called obviative, which obligatorily occurs in transitive sentences and possessive constructions which contain more than one third person animate argument. Because of the complexity of obviation, only two simple examples are given below. The sentences contain the direct obviation marker *-an* plus the verbal suffix *-ikōn*, which

designates the logical subject (from Dunnigan, O'Malley and Schwartz, 1978, p. 10):

(1) wākoss- **an** o- wāpam- **ikōn** pisiw
(fox obv. 3pers. see obv.subj. lynx)
'the fox sees the lynx'

(2) pisiw-**an** o- wāpam- **ikōn** wākoss
(lynx obv. 3pers. see obv.subj. fox)
'the lynx sees the fox'

The intricate relationship between nouns and verbs exemplified above is further enhanced by another crucially important classificatory aspect of the Ojibwa verbal lexicon: Verbs are divided into several classes which directly partake in the overall animate/inanimate classification of nouns in all of their syntactic functions. The most important classes are (based on Nichols and Nyholm, 1995):

- (1) Animate intransitive verbs: Two kinds of verbs with an intransitive stem, an animate subject, and either an object or no object; e.g., anokii 'work/he is working'.
- (2) Inanimate intransitive verbs: Verbs with an intransitive stem, an inanimate subject (always third person), and no object; e. g., niizhinon 'they are two'.
- (3) Transitive animate verbs: Verbs with a transitive stem and an animate object; e. g., inganawaabamaa 'I look at someone/something (animate entity)'.
- (4) Transitive inanimate verbs: Verbs with a transitive stem, an inanimate object and a characteristic set of inflections (two subsets of this class have different sets of inflections); e. g., inganawaabandon 'I look at something'.

Thus, verbal *stems* directly participate in the fundamental classification of entities in the Ojibwa linguistic system while the remaining requirements of the language are fulfilled by their morphological extensions. As the verb classes above suggest, it is the whole verb stem which serves as the primary means of assigning animate and inanimate nouns to verbs which are compatible with the inherent potential of nouns to assume the role of actor and/or patient. In other words,

the basic system consists of an opposition between participants that perform, effect, instigate or control the situation denoted by the predicate, and participants that do not perform, initiate or control the situation denoted by the predicate, and participants that do not perform, initiate or control any situation but rather are affected by it in some way. The former type of participant we refer to as an *Actor* and the latter as an *Undergoer* (Van Valin and Foley, 1980, p. 335).

But the classificatory function of the verb stem does not end here. A secondary classification of nominals is accomplished by certain *components* of the verb stem, as illustrated in the following sketch of the basic stem structure (based on an overview by Rhodes, 1981, p. 47).

The typical Ojibwa verb stem is comprised of three important morphemes, viz. initials, optional medials, and finals. Initials and finals are illustrated in sentences (1) and (2); a medial is added to sentence (3):

(1) bmose
 /bim ose w/
 along walk 3
initial final
 'he walks'

(2) dkonjge
 /dakw am-d ig-e w/
 grasp with mouth indef.obj. 3
initial final
 'he bites'

(3) **gī-bōknikešin**
 /gī bōkw nik-e s-īn w/
 past break arm fall 3
 preverb **initial medial final**
 'he fell and broke his arm'

Initials, medials and finals constitute the semantic core of the verb. Although other possibilities exist, one major pattern of semantic contribution of these three morphemes to the overall semantic content of the verb is as follows:

- (1) Initials: Lexical information
- (2) Medials:
 - a) body parts
 - b) classifiers
 - c) adverbials
- (3) Finals: Morphemic complexes
 - a) means of instrumentality
 - b) agreement with the logical absolutive in gender
 - c) membership in abstract semantic verb classes
 (e. g. stative, process, event, etc., locative,
 non-locative, degree of control)

Although the three morphemes are intimately intertwined, this overview indicates that, in a narrow sense, medials are the decisive morphemes with respect to the perceptual properties of entities, which frequently originate from terms referring to body parts. Denny (1976, pp. 127-128) describes the crosslinguistic role of these morphemes as follows:

Two things seem to be true of this class of morphemes so widely found among the world's languages: 1) they are dependent nominals, i. e., they attach to other words such as verbs as in Algonquian, numerals as in Mayan, demonstratives as in Chinese and even nouns themselves as in the case of the Bantu noun prefixes, and 2) they express noun predicates, i. e., they place the nominal referent in a class, e. g., Ojibway [sic] *āpikk* 'mineral solid'. [In other cases] they place objects into shape-defined categories, [i. e.] one-dimensional ... , two-dimensional ... , and three-dimensional ... objects, which would be exemplified by a string, a piece of bark, and a berry respectively.

It appears that Denny's description adequately captures the situation in Ojibwa. The linguistic treatment of medials, which pertain to aspects of shape, will be elaborated in the discussion of Gestalt features, and some thoughts on the origin of these elements will be included in the section on diachronic developments (5.3).

5.2 Principles of gender assignment

As noted, Ojibwa gender assignment rules exhibit a clear dichotomy between animate and inanimate entities (as defined by the Ojibwa). Therefore, formal, i. e., phonetic and/or morphological criteria for gender determination as in German, for example, appear to be absent in the language. In other words, gender allotment has a purely semantic basis and always reflects the animate/inanimate distinction. However, within these two categories general principles of categorization, which have been discussed previously, are as much part of Ojibwa as they are of most other systems discussed in this paper. Below the categorization of animate entities is briefly examined.

5.2.1 Categorization

On prior occasions it has been pointed out that some taxonomic systems are much less (if at all) hierarchically organized than the English system (e. g., Vietnamese), or that

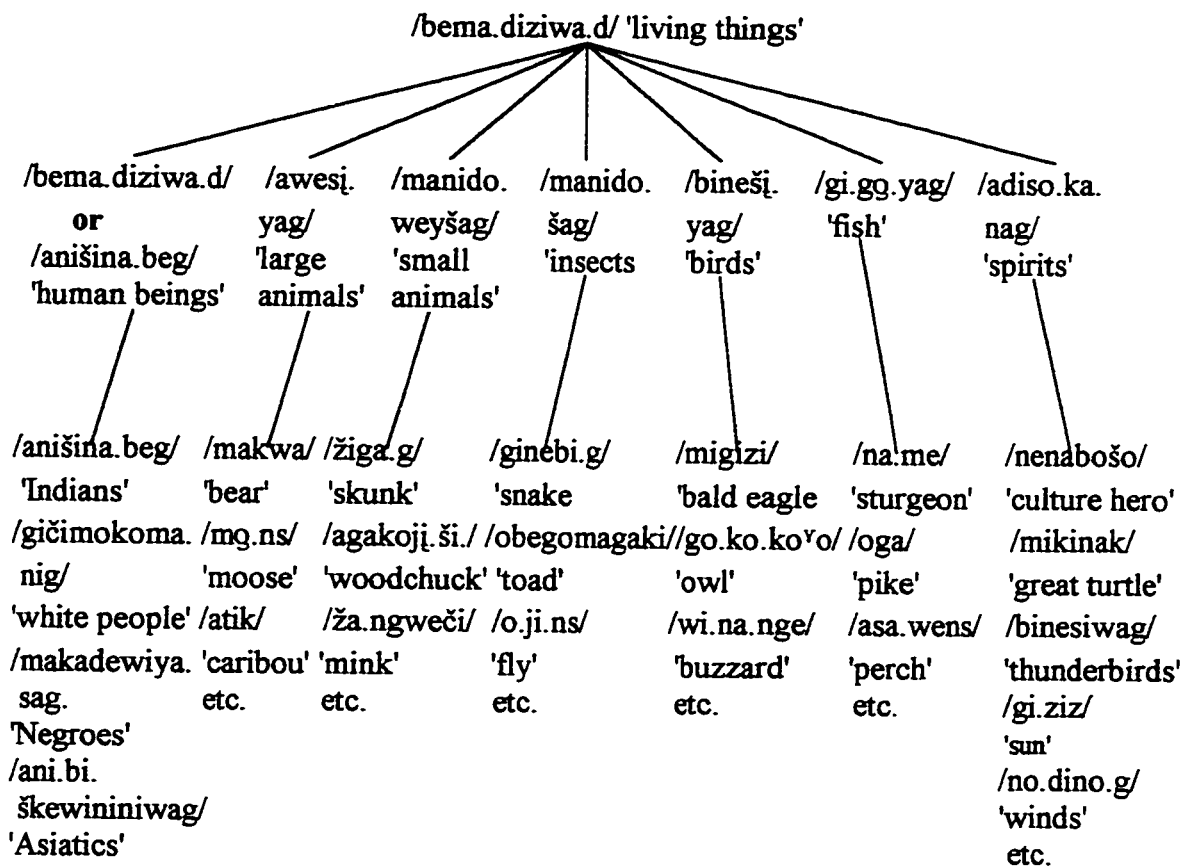
they are subject to extensive variation and overlapping which makes a hierarchical organization nearly irreconcilable with the grammatical distribution of category members (e. g., Swahili). The Ojibwa folk taxonomy of 'living things' can be represented in hierarchical form, but investigators discovered a peculiar problem which seems to be caused by (1) the individual Ojibwa speaker's interpretation of a superordinate term for 'human being(s)' and (2) by ambiguities in the informants' understanding of 'living things' in general. For instance, the term /anišina.beg/ simultaneously denotes 'Indians' when contrasted with 'white people', 'Asians', etc. and humans in general when contrasted with members of the animal world ('large animals', 'small animals', etc.). In other words, in some instances /anišina.beg/ excludes specific terms for some humans ('white people', 'Negroes' and 'Asians'), while in others it encompasses all humans and excludes all other entities considered 'living' (Black, 1969b, p. 175).

These observations once more substantiate the repeatedly mentioned inadequacy of traditional categorization schemes. That is, the carving up of the world and the things in it is not a matter of strictly defined attributes but subject to variations for which prototype theories of class membership provide a better explanation. In the above case, however, the variability in exclusion/inclusion of entities in category membership suggests that a better yet account is provided by the so-called competition model, according to which categorization "involves a continual decision-making process in which there are many possible candidates competing for each categorization decision and the language user must be able to evaluate the candidacy of each alternative in terms of the cues that support it" (MacWhinney, 1989, p. 197).

Aware of the shortcomings of the classical categorization approach, Black (1969b, p. 177) proposes the taxonomy presented in Table 26 as one that, in her opinion, best captures the Ojibwa categorization of 'living things' by providing more than one label for the concept of 'people' or 'human beings'. Black's phonemic transcription of Ojibwa terms is retained.

Table 26

Taxonomy of animate beings in Ojibwa
(Source: Black, 1969, p. 177)



This categorization scheme in the domain of 'living beings' exhibits the familiar tripar-

tite features of a typical taxonomic structure: One general, all inclusive taxon, a limited number of generic taxa, and various basic level categories. While this hierarchical organization underscores the human need for partitioning the world into more manageable portions, the inclusion of "spirits" as a prominent basic level member of the animate category indicates that the Ojibwa speakers' understanding of "living" is different from the western view of "animate"; i. e., that it is closely associated with certain beliefs and cultural attitudes. These will be addressed in the discussion of animacy (section 5.2.3).

5.2.2 Gestalt

Gestalt properties are a clear parameter in the Ojibwa categorization of inanimate nominals. Perceptual properties of entities are expressed in two ways: (1) Diminished size is realized morphologically in the form of a noun suffix (e. g., *nininjiins* 'my small hands/fingers'); (2) quality, including configurational variables, and kind are realized as medials which, as noted above, are an integral part of the verbal complex. While all classifying morphemes specify the class of which the thing referred to by the noun is a member, it is the quality classifiers - as opposed to 'kinds' which are typically artifacts, e. g., *ōnak* 'boot', *kamik* 'dwelling' - that specifically deal with Gestalt features. Both classificatory devices denoting Gestalt properties are considered below.

Diminutives, as expected, express the notion of physical smallness of any concrete Ojibwa noun when the affix *-(e)ns* is added. However, the language possesses a significant number of words which only occur in diminutive form and, upon casual inspection, seem to contradict the above notion. For example, the 13" long *gaawnzigoons* 'Hooded Merganser' is diminutive, while the 7" long *baapaase* 'Red-headed Woodpecker' is not

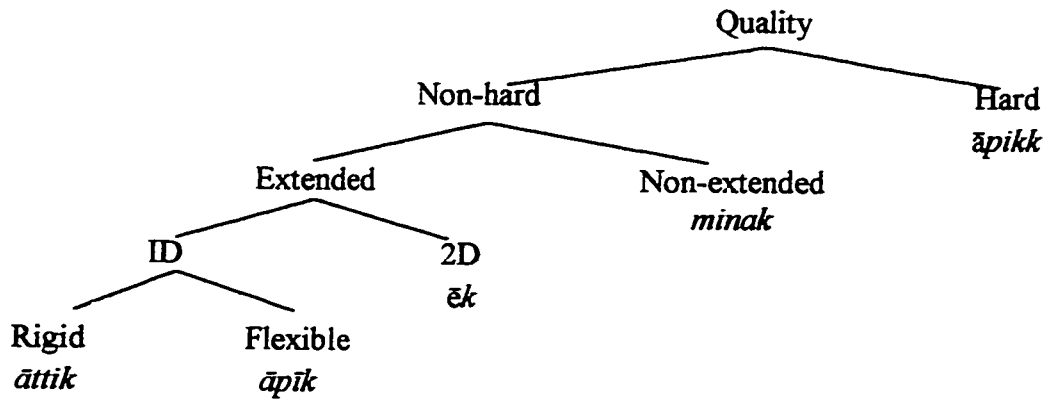
(Rhodes, 1990, p. 154). Pointing out that predicates like 'small' have a covert, comparative argument, Rhodes (1990, pp. 155-157) gives an explanation which emphasizes the intricacy of lexical structure in Ojibwa: Diminutives can refer to the position of a word in a lexical hierarchy and fulfill an indirect classificatory function: The 'Hooded Merganser' is diminutive because it is "the smallest species in the generic taxon *gaawnzig* 'merganser'" (Rhodes, 1990, p. 155). Classifying medials are of similar complexity.

Along with Cree, Ojibwa possesses five classificatory indicators which refer to the qualities of single concrete objects. Table 27 sketches the qualities of objects in Ojibwa as analyzed by Denny (1979, p. 105). 1D and 2D refer to one-dimensional and two-dimensional, respectively. Initially, objects are contrasted in terms of hardness and non-hardness; the latter is further divided into non-extended and extended. Denny views the additional variables in the extended category, i. e., two-dimensional and one-dimensional with the subvariables 'rigid' and 'flexible', as the decisive elements in establishing finely tuned distinctions in the classification (cf. comments below):

Analogous to Friedrich (1970), Denny (1979, p. 98) argues that the features "saliently one-dimensional, ... saliently two-dimensional ... and saliently three-dimensional" more appropriately describe objects in many languages than the more traditional notions of "longish, flattish, and roundish." With respect to Ojibwa (and other related languages), he notes that shape and extendedness are lexicalized separately; i. e., verbal *roots* denote the shapes of length, flatness, and roundness while the classifier morphemes express extendedness in various ways, allowing multiple combinations of shape and classifier. For example, the morpheme *kinw-* (long) in Cree can occur either with one- or two-dimensional

Table 27

Ojibway classifying morphemes
(Source: Denny, 1979, p. 105)



classifying morphemes; *napak-* (flat) in Ojibwa can combine with one- or three-dimensional classifiers. The following sentences exemplify these options (from Denny, 1979, p. 99):

Cree: **kinw-āpēk** -an
(long-1 dimensional and flexible -it is)
'It is long' (e. g., rope)

kinw-ēk -an
(long-2 dimensional -it is)
'It is long' (e. g. cloth)

Ojibwa: **napak-āpik** -at
(flat -1 dimensional and flexible -it is)
'It is flat' (e. g., ribbon)

napak-(i) minak -isi
(flat -3 dimensional -it is)
'It is a flat 'roundish' thing'

Another aspect of shape/dimensionality in Ojibwa illustrates the intricate relationship

between these two features and the type of verb employed in an expression: The classification of concrete objects is "imbedded in verbs of handling and position in which the focus is on the manipulation of objects, i. e., proximal interaction with them" (Denny, 1979, p. 107; cf. also Barron and Serzisko's, 1982, analysis of Siouan languages). Thus, Ojibwa, like other Algonquian languages, permits classification in four types of verbs, namely: (1) verbs involving an agent controlling the movement of a classified object, (2) verbs designating the position of the object resulting from such movement (often referred to as "goal"), (3) verbs indicating partial control of an agent over the movement of objects, and finally (4) verbs describing movement without the influence of a controlling agent. These four situations are illustrated in the sentences below (from Denny, 1979, p. 107):

(1) movement under control	sak- <i>īk</i> -inān (ext 2D flex)	(to hold on to something sheetlike)
(2) position	sakit- <i>āpī</i> -ssin (ext 1D flex)	(be sticking out [string-like object])
(3) movement under partial control	kotako- <i>minak</i> -ipitōn (non-ext)	(to roll over something roundlike)
(4) movement without controlling agent	kotako- <i>minak</i> -issē (non-ext)	(something roundlike rolls over)

Comparing Algonquian with other languages (e. g., Eskimo), Denny arrives at some interesting conclusions concerning the preference of semantic differentiation in the linguistic treatment of the extendedness variable, which he links to different existential needs of speakers in dissimilar habitats. Thus, it is more important to the Eskimo speaker to encode extended properties relating to distance (out there) which are in view than to

proximity, while the Algonquian speaker, a forest dweller and hunter, is more concerned with the manipulation of objects which are in close range. Therefore, linguistic coding of distance is bound to locative expressions in Eskimo while in Algonquian the subvariable of extendedness, i. e., flexibility, which is absent in Eskimo, is of prime significance (cf. Denny, 1979, esp. pp. 112-113).

5.2.3 Animacy

As noted earlier, all nouns in Ojibwa are divided into grammatically 'animate' and 'inanimate' categories. A distinction based on biological sex, however, is not made. The classification of the human domain seems straightforward: All humans are classed as animate (inini 'man', abinoojinh 'child', ogimaa 'chief', etc.), as are all animals (animosh 'dog', gookoosh 'pig', moose 'worm', etc.). This makes sense to the outside observer. But in numerous cases grammatical gender marking does not match the semantic content of the noun (according to Schwartz, 1993, ca. 40% of Ojibwa nouns are affected), and, therefore, it is as incomprehensible and seems as arbitrary as the exceptional cases noted throughout the discussion of nominal classification in the languages previously examined. To give one particularly curious example, Bloomfield (1946, p. 94) notes that the raspberry (mikomin) is animate while the strawberry (ode'imin) is not. Table 28 lists further exceptionally marked nouns.

As observed in all the other languages considered, it is again the unusual gender assignment of certain Ojibwa nominals that makes it necessary - and worthwhile - to look for alternative means of interpretation precisely because seemingly aberrant linguistic

phenomena in a given language are like windows of opportunity which allow a glimpse

Table 28

Exceptional gender marking of selected Ojibwa nouns
Non-living things with animate gender
(Source: Nichols and Nyholm, 1995; Schwartz, 1993, p. 37)

akik 'kettle, pail'	mandaamin 'corn, kernel of corn'
anag 'star'	manidoo 'God, spirit'
aniib 'elm'	manidoomins 'bead'
asab 'net'	miigwan 'feather'
asemaa 'tobacco'	mikwan 'ice'
asin 'stone'	mitig 'tree'
azaadi 'poplar'	mitigwab 'bow'
bagaan 'nut'	mooshwe 'shawl'
bakwezhigan 'bread'	odaaban 'car, sled, sleigh'
biiwanag 'flint'	opwaaganisin 'pipestone'
dewe'igan 'drum'	waabigan 'clay'
dibik-giizis 'moon, celestial body, time unit'	waaginaak 'canoe rib'
eshkan' (animal) horn'	wazhashkwedons 'mushroom'
giizhig 'day'	wewaagazid 'banana'
goon 'snow'	wiisagi-desadinigaazod 'pizza'
injichaag 'soul'	windigo 'winter cannibal monster'
makwasaagim 'bearpaw snowshoe'	zesab 'nettle'
	zhigaagawanzh 'onion'

of the perceived reality of the speakers of that language, their general world view, their values and priorities, their concerns, and their social organization, in short, their culture as it is reflected in their language. Thus, in the previous discussion of Dyirbal noun classification, the significance of the belief system of its speakers provided the only meaningful basis for the interpretation of most exceptionally classified nominals. The situation in Ojibwa is similar; i. e., several items in Table 28 can be readily identified as being economically and culturally important (e. g., objects with clear ceremonial significance, such as 'tobacco'). Also the tendency to encode spiritual entities (God, spirits, monsters, etc.)

as animate is widespread cross-linguistically. In contrast, the motivation for the animate coding of other words is much less accessible. Although some semantic fields are quite extensively represented (e. g., trees, natural phenomena, food products, etc.), other terms denoting existentially important objects with similar semantic content are classed as inanimate. Notable examples are 'manoomin' (wild rice), 'wadikwan' (branch), and the previously mentioned 'ode'imin' (strawberry) (Schwartz, 1993, p. 38). Of course, it could be argued that the concept of animacy is a continuum without clear cut-off points which, furthermore, is often subject to culturally determined variation. However, with respect to Ojibwa, alternate means of interpretation seem equally applicable, although some scholars (e. g., Black, 1982) have implied that the Ojibwa's understanding of animacy may never be fully understood. Nonetheless, before further considering the unusual gender marking of certain nominals, a brief excursion into the world view and interpretation of the universe of the Ojibwa speaker might aid in the establishment of a tentative basis for at least a partial understanding of the concept of animacy as understood by the Ojibwa. Hallowell (1954, p. 109), who studied Ojibwa culture extensively, underscores the necessity of including special cultural aspects in the discussion of the Ojibwa concept of animacy:

It has been said that the grammatical distinction between animate and inanimate gender in Ojibwa speech is arbitrary and hard to master. It only appears so to the outsider. Actually, it is precisely these distinctions which give the Ojibwa individual the necessary linguistic cues to the various classes of other selves that he must take account of in his behavioral environment. It is also significant that he is not an "animist" in the classical sense. There are objects - an axe, a mountain, a canoe, a rainbow - that fall within the inanimate class. In addition to human beings ... all animals and most plants are classified as animate. So are Thunder, the Winds, Snow, Sun-Moon ... certain shells, stones, etc. I once asked an old man whether all stones were alive. His

reply was "Some are." Another old man is said to have addressed a stone; another thought that a Thunder Bird spoke to him.

In the western mind, a "person" is distinctly set apart from all other non-person entities, i. e., those that are without an "anima" or soul. Of course, the personification of inanimates is commonly found in folk tales and other stories and the appropriate linguistic form expressing animacy is frequently used in these cases, but it is always clear that in real life a stone is always a stone, even if in fairy tales it might reveal itself as a prince. Stories of this sort are stuff for children; they have no reality for objective rational adults. The Ojibwa think otherwise. Their cosmos is radically different from the western view in which humans stand out and are set apart from everything else the world might contain. For the Ojibwa, humans "stand *in* the world as particular types or instantiations of a transcendental personhood characterized, in part, by the potential for animation and volition" (Smith, 1995, p. 51), and other members of the universe share this potential. In other words, the Ojibwa make no categorical differentiation between things which are alive and things which are not; i. e., their notion of personhood is much more inclusive than that of western interpretations of "person". Thus, in addition to humans and power beings (manitouk), it includes a great variety of "other-than-human persons as well" (Smith, 1995, p. 51): Animals, plants, stones, shells, etc. are fundamentally *not different from human beings*. The myths of the Ojibwa are full of tales giving testimony to the reality of their "peopled" universe. They are sacred, ritualized stories whose characters are not considered fictitious. Rather, they are "regarded as living entities who have existed from time immemorial. ... Whether human or animal in form or name, the major characters in the myths behave like people, though many of their activities are depicted in a spatio-tempo-

ral framework of cosmic, rather than mundane, dimensions" (Hallowell, 1975, p. 150).

The intimate relationship and interaction between humans and mythical entities is exemplified by the synonymy of these characters and "our grandfathers" (Hallowell, p. 150). A few specific examples will be given at a later point.

However, in spite of the powerful influence of their mythical heritage the Ojibwa do not naively perceive concrete objects as generally animate. Although they possess the potential for animacy, it is necessary for such entities to be validated as animate. According to Hallowell (1975, p. 148), "the crucial test is experience"; i. e., some empirical sources of knowledge and authority are the necessary prerequisites for such validation. They include (1) the observation of certain seemingly ordinary as well as extraordinary natural phenomena, (2) dreams and dream-like states and (3) reliable witnesses who can verify experiences pertaining to natural phenomena and those occurring in dreams and dream-like states. Once these criteria are met, occurrences of even the most unusual kind become indisputable reality for the Ojibwa.

One crucially important basis for the Ojibwa's animate interpretation of objects which in the western view are unquestionably inanimate is apparently their unshakable belief in the ability, i. e., power, of entities to change from one physical form to another, particularly as is perceived in myths and dreams or dream-like states (visions). In other words, it is the notion of *metamorphosis* on which the Ojibwa's reification of other-than-human personae rests. Metamorphosis is "one of the generic properties manifested by beings of the person class" (Hallowell, 1975, p. 163).

In most mythical cases of metamorphosis animals assume the form of humans and

vice-versa. For example, in one narrative by William Jones (cited in Smith, 1995, pp. 52-53), one woman turns into a wolf; another becomes a raven; still others assume the appearance of a porcupine, a Canada jay and a beaver. In other stories, the landscape changes as mountains appear and fires spring up. One of the mythical heroes, Nanabush, is a special master of disguise: He most often appears either as a man or a rabbit, but he is also said to assume the form of other animals, trees and rocks (Smith, 1995, p. 55).

Humans are included in metaphorical processes although they are not believed to metamorphose under normal circumstances. Instead, they "transform themselves through altered states of consciousness, in vision, or in dreams" (Smith, 1995, p. 55). And it is through these altered states of consciousness, induced by fasting and isolation, that young persons in Ojibwa traditional society sought the help and friendship of a particular manitou, i. e., a powerful other-than-human person who would assist and guide them during their earthly journey.

Returning to the issue of the linguistic coding of animacy in Ojibwa, the question arises of what information one can glean from the above (obviously extremely sketchy) remarks about the belief system of the Ojibwa. The following generalization seem in order:

- (1) Animacy in Ojibwa constitutes a fluid concept; i. e., in a strict sense, one cannot speak of two separate categories representing entities which are living as opposed to those which do not possess (at least the potential of) life.
- (2) The Ojibwa's notion of animacy is anchored in the thorough conviction that entities have the power to undergo transformation and thus to change from in-

animate to animate. Linguistically this conviction is typically expressed through animate gender marking once the necessary validation of the "animate" status of an entity has been made.

- (3) Animacy is linked to the possession of power thus indirectly equating animacy - or life - with power. However, the degree of power varies; "other-than-human persons" seem to possess the greatest amount some of which they can bestow on humans whose guardians they have become.

A succinct summary is given by Hallowell (1975, p. 163):

Within the category of persons there is a gradation of power. Other-than-human persons occupy the top rank in the power hierarchy of animate beings. Human beings do not differ from them in kind, but in power. Hence, it is taken for granted that all the atiso'kanak [manitouk] can assume a variety of forms. In the case of human beings, while the potentiality for metamorphosis exists and may even be experienced, any outward manifestation is inextricably associated with unusual power, for good or evil.

How then does the Ojibwa's understanding of animacy compare with Frawley's definition of this concept? In an earlier brief discussion of his interpretation of animacy, it was pointed out that, in addition to locomotion and volition, he considers "influence" (cf. Frawley, 1992, p. 89) as the overriding principle in the classification of entities as either animate or inanimate. In all other languages previously discussed, ample evidence was found that, indeed, influence over the actions of others, the ability or power to control other entities appears to be one of the most decisive yet often hidden parameters in the general definition of animacy. One must also remember that its significance seems to be even more crucial because the Ojibwas' belief system eliminates the commonly recognized barrier between living and non-living things which is customarily found in western,

scientifically oriented cultures: In the unified cosmos of the Ojibwa, *all* beings have a potential share in the power to control the actions of other beings. Therefore, the behavior of the sun, for example, is not beyond the control of humans; under the right circumstances, it can be induced to rise and go down (cf. Hallowell, 1975, p. 152).

If one accepts the notion of "power" as the general underlying motivation of animate gender marking, reasonable interpretations can be advanced with respect to the other "unexplained, exceptionally marked nominals" in Table 28. The following examples are based on Table 28 and drawn from Darnell and Vanek (1976, pp. 167-176), who evaluated Cree data whose classification is strikingly similar to that of Ojibwa; i. e., in both languages things with habitual power association are classed as animate. Cree terms are adjusted to Ojibwa in accordance with entries in Nichols and Nyholm (1995) *A concise dictionary of Minnesota Ojibwe*:

(1) While the gender designation of shrubs and bushes is somewhat ambiguous with regard to animacy, those with thorns can be said to have the ability/power to protect themselves. Hence 'mikomin' (raspberry) is labeled animate while 'ode'imin' (strawberry) is not. The animate designation of 'nettle' (zesab) is based on its inherent "power" to heal.

(2) As already mentioned, any entity with ritual significance is classed as animate: 'to bacco' (asemaa), 'pipestone' (opwaaganisin), 'feather' (miigwan), 'bead' (manidoomins), 'drum' (dewe'igan) and 'clay' (waabigan).

(3) Some objects can be interpreted as devices augmenting physical power. Thus, 'mitigwab' (bow), which enhances the strength of the human arm, is animate while 'bikwak' (arrow) is not.

(4) Some utensils have container features; i. e., they have the ability to hold something which itself has no form or shape

(e. g., soup). Their power association is also enhanced if they are fire resistant. Consequently, 'akik' (kettle, pail) is in the animate category. (5) Since 'dibik-giizis' (moon, celestial body) and 'anag' (star) are considered spiritual entities which constitute the archetype of power holders, they are labeled animate. The power to provide light might also account for the inclusion of the term for day 'giizhig' in Table 28. However, as noted above, their power is not considered absolute because their behavior can be influenced by the right kind of social interaction with human power holders. (6) While Darnell and Vanek stress the power association of 'flint' (biiwanag), there is also a strong mythical connection in which 'flint' has anthropomorphic characteristics without being considered human *per se*: The Four Winds and Flint are quintuplets who were born of one mother, whom Flint tore apart during birth. As penalty he was later reduced in size (Hallowell, 1975, p. 153). Considering this mythical event, it would be unthinkable for the Ojibwa to assign 'biiwanag' to any other than the animate category.

Darnell and Vanek (1976) provide interesting explanations for numerous other exceptionally marked nominals in Cree many of which have counterparts in Ojibwa. The few examples given above, however, suffice for the present purposes, whose aim it is to show that claims of largely arbitrary gender assignment can be effectively dispelled if sufficient time and effort is invested not only to examine overt linguistic manifestations but also to uncover underlying forces which give rise to superficial aberrations.

Although cultural criteria provide a plausible basis for seemingly anomalous gender marking, additional factors in the Ojibwa gender system need to be considered: First, native speakers show variation in their gender assignment of the same word, thus adding an

element of instability and increased arbitrariness to the system. Secondly, there remains a fair number of nouns in the animate gender which have eluded any kind of explanation.

In several studies, Black (1967, 1969a, 1969b, 1977, among others) investigated Ojibwa noun allocation in detail and came to the conclusion that problems indicated above remained although the general semantic link to concepts of power could be clearly established and was endorsed by other scholars. After additional research, Black (1982), echoing observations made by Hockett (1966) for Algonquian in general, concluded that such variation in gender marking is related to the particular circumstances of the situation in which the Ojibwa finds himself. Traditionally, if he had any reason to believe - and most often he did because "the old people used to think that nearly all things are alive' and 'in old days, people had to show respect for everything living" (Black, 1967, p. 163) - that a given person, animal, plant or object had power, he must behave accordingly; i. e., he must show proper respect and never offend "any living thing since all may have potential power to affect or control one's life" (Black, 1982, p. 61). Since the identification and assessment of the power carrier was difficult or impossible in most situations, the safest conduct was one of caution which could manifest itself in two ways: Either the speaker elected not to speak at all, or the speaker temporarily shifted gender. But in what direction? Apparently, as a rule of thumb, it was always safest to use the animate gender. However, as Black (1982, p. 70) points out, there are other ambiguities in the system which further obscure the reason(s) for gender assignment. As illustration she cites another tactic, employed in certain contexts, that was perhaps aimed at neutralizing the power of dangerous winds, for example. In one particular case one of her informants

shifted 'wind' (interpreted as animate by others) to inanimate; he might have been willing to take such a risk because of his role as medicine man.

While temporary gender shift most likely has effects on the Ojibwa gender system, a complete understanding of this phenomenon is probably not possible because it is often related to situations which the Ojibwa are not willing to discuss. Cultural taboos and a pervasive distrust might forever prevent the outsider from gaining full insight into this type of gender manipulation which holds not only for Ojibwa but has also been observed in other Algonquian languages. Thus, it seems that in Cree the animacy of an actor is frequently kept *intentionally* ambiguous, providing "an individual a way to speak of his or others' experiences without presuming to know all of what is indicated" (Craik, 1982, pp. 34-35).

There are several other occurrences of animacy in Ojibwa which are of interest. One is particularly striking. Black (1969a, p. 185) reports one case in which the classification of young animals was discussed. Although all terms for animals are unambiguously members of the animate category, newborns can be treated as linguistically inanimate during the first day of their life. Once they are able to move about, usually on the second day, the gender designation is changed to animate. This occurrence suggests that locomotion (and volition) is probably a vital part of the overall animacy concept and is perhaps understood as one of the features of power.¹⁶ Other occurrences of gender shift seem to support this assumption. Several cases of gender shift correlate with different ranges of referents. For example, the animate 'tree' (mitig) becomes the inanimate 'wood', as does the animate term for 'beings that fly' (bemisewaad): When it denotes 'things that fly'

(=airplanes) it is the inanimate 'bemisewmagakin'.

Although gender shift, which, as noted repeatedly, is not fully understood, explains some additional cases of anomalous gender marking, there is still a residue of nouns whose animate designation in modern Ojibwa remains obscure. These cases will be briefly considered in the section on diachronic processes.

As mentioned earlier, Ojibwa also makes use of the diminutive, which is indicated by a long nasalized vowel followed by *-s* and suffixed directly to the noun. The diminutive denotes diminished size and, as noted earlier, is used freely with most nouns (other than abstracta). Whether or not derogatory notions are linked to lesser size could not be discovered with certainty although Bloomfield (1957, p. 70) does list several items (e. g., *nentayišš* 'my dog', *enimošš* 'dog') in which the diminutive form is claimed to have "pejorative flavor." This interpretation is supported by Rhodes (1990, p. 151) who cites the additional morpheme *-(e)nh* which is said to denote 'contempt'.

There also exists the possibility that the diminutive serves endearing functions because it appears in dependent nouns denoting relationships (e. g., *neni·ca·niss* 'my child') (Bloomfield, 1957, p. 70). It is not clear if and how pejorative connotations are expressed in the verbal complex. This probability is indicated by the fact that Goddard (1979, pp. 42-43) briefly mentions the pejorative affix */-ši:/* in his examination of Delaware verbal morphology. Goddard also refers to pejorative affixes and affective connotations of the diminutive in other Algonquian languages (cf. Goddard, 1979, pp. 90-91) and suggests that the diachronic development of these forms might be shared by such languages as Delaware, Fox, and Ojibwa. However, he also clearly states that "the diminutive forma-

tions in Algonquian are in need of a full-length study" (Goddard, 1979, p. 91).

5.3 Aspects of diachronic development

As described earlier, classificatory morphemes derived from common, concrete, non-animate noun stems are attached to the verb in Algonquian languages: Verbs and nouns are compounded, forming a single unit and expressing either kinds (e. g., kind of building) or qualities. The latter represent classes or categories of entities which, as previously exemplified, are often distinguished by perceptual properties such as shape/dimensionality and consistency. The question arises of why this linguistic strategy, commonly known as noun incorporation and especially characteristic of American Indian languages,¹⁷ is adopted by languages in the first place. One tentative explanation is based on word order typology. Although this area seems to be in need of much further work, Miner (1982, p. 37), noting that medials or incorporated elements, *follow* the verb root, argues that Algonquian languages were once verb-initial (VOS) and, therefore, favored incorporation of verbal arguments because "major constituents do not intervene between V and the argument to be incorporated, and ... incorporation as movement process is unidirectional" (Miner, 1982, p. 36).

Mithun (1984) emphasizes the general process of noun incorporation for which she outlines several stages:

(1) Brought about by the need for creating expressions for new concepts, a noun and compatible verb are combined and function as a unified concept (Mithun, 1986, p. 380). While not all verbs are affected equally, noun incorporation seems to involve a good por-

tion of the verbal inventory. Below are a few examples (based on Denny, 1978a, pp. 153-154). Incorporated nominal elements are given in parentheses:

Ojibwa: (āpikk 'mineral solid'):

miskw āpikk it ē
 (be red mineral heat PROCESS)
 'it [mineral] is red hot'

Cree: (nisk 'arm'):

sak inisk ē n ē w
 (connect arm PROCESS by hand PROCESS he)
 'he seizes him by the arm'

Cree: (astimw 'horse'):

wanih astimw ē w
 (lose someone horse PROCESS he)
 'he loses his horse'

(2) Since the incorporated noun leaves an empty syntactic slot behind, another argument within the clause can assume the vacated position, which makes noun incorporation "a lexical device for manipulating case relations within clauses" (Mithun, 1984, p. 859). This is shown by the following sentences from Blackfoot, another Algonquian language (from Mithun, 1984, p. 858), where 'ball-acquiring' in (a) constitutes a unitary activity analogous to the examples above, but in (b) is more concerned with the object 'child' than with the ball:

(a) lihpokōn-sskaawa nóko'sa.
 (ball-acquire.he my.child)
 'My child got a ball.'

(b) Nit-ohpokón-sskoawa nóko'sa.
 (I-ball-acquire.him my.child)
 'I provided my child with a ball.'

(3) Noun incorporation has also been shown to have an important discourse function

(at least in many languages) by evolving into a mechanism for backgrounding known information. Normally, the identification of discourse participants is expressed through obligatory pronominal affixes on the verb. This makes the usage of separate nominal constituents unnecessary in most cases. However, Mithun (1984, p. 859) argues that pronouns are insufficient to qualify verbs of wide scope, and, therefore, separate noun phrases would be needed to re-identify the entity, a practice which could conceivably sidetrack the listener's attention. Incorporated nouns are claimed to solve this problem because they "are not salient constituents in themselves whose presence might obstruct the flow of information" (Mithun, 1984, p. 859). The discourse function of noun incorporation is especially emphasized by Hopper and Thompson (1984), who directly associate the selection of nouns which become incorporated with their diminished discourse salience because they express "typical or habitual objects" (Hooper and Thompson, 1984, p. 723) that in normal speech situations do not need to be foregrounded.

All of these arguments appear to have bearing on Ojibwa. As noted in the discussion of Ojibwa nouns, the sole use of pronominal affixes on the verb is the norm; separate noun phrases seem to be reserved for the introduction of new information as well as for emphatic purposes (cf. section 5.1). The discourse function of incorporation is particularly evident in the incorporation of body parts, considered inalienable possessions which are tied to their possessor and therefore are not subject to individuation:

Since they are physically undifferentiated from their 'possessors', body parts are treated in grammar and discourse as dependent, non-individuated entities. Typically they are not participants in the discourse as distinct from their 'owners'. ... The typical discourse role is reflected in a lower degree of categoriality [here 'nounhood']; where a salient, individuated discourse role for body parts is none-

theless called for, the nominal trappings characteristic of a higher degree of categoriality tend to appear (Hopper and Thompson, 1984, p. 726).

While word order might have set the stage for incorporation and given it its original impetus, the still productive process of temporary incorporation lends support to the notion that the functional need of individuation in discourse was one of the prime reasons for the language to follow this course of development.

5.4 Grammaticalization

Various processes of grammaticalization, e. g., fossilization, attrition, etc., can be deduced from this brief account of noun incorporation, as well as from observations in other sections of the paper. Thus, it was noted earlier that there is a residue of inanimate nominals in the animate category which has eluded any kind of plausible explanation. Black (1982) believes that the curious coding of the nouns in question has its origin in the kind of gender shift described in the section on animacy. She maintains:

that the heretofore ... apparently arbitrary A[gender]-gender nouns (including those about whom the 'power' association has been lost) probably were victims of a crystallization of gender shift, such that they became stuck in that gender at some point and thereafter were customarily assigned to them qualities of power or life (Black, 1982, pp. 67-68).

This explanation seems not only tenable but is also particularly attractive because it permits a language to possess inconsistent forms, a fact that more realistically reflects actual language use than any purist would have it. Furthermore, Black's explanation takes into account the now generally accepted view that frequently used forms, in particular, can become conventionalized to such an extent that the meaning which was obvious becomes frozen into the surface form of a word. Although the original motivation - in this

case for animate marking - is no longer transparent, speakers of Ojibwa apparently have no problem learning these fossilized forms and using them appropriately.

From a more general perspective, the retention of animate coding for inanimate entities could also be viewed as a byproduct of general grammaticalization processes which the language as a whole has undergone. Specifically, it can be argued that animate reference expressed in the entire sentence provides sufficiently powerful grammatical cues for the speaker who might no longer consciously associate the nouns in question with the original motivation for their animate coding. This implies that the meaning of animacy has become generalized and *can* be extended to nominals without the need for motivation. The necessity of interpreting meaning in terms of the entirety of a sentence is, for example, stressed by Bybee et al. (1994) who maintain and show evidence that "we must attend to the syntax and morphology of the source construction and not simply to the referential meaning of its lexical items" (Bybee et al., 1994, p. 11).

The phenomenon of noun incorporation is an especially clear indicator of the (advanced) degree of grammaticalization of Ojibwa in that it evidences a well-known developmental path whose mechanism Heine and Reh (1984) describe as the process by which:

linguistic units being part of or forming arguments of the predicate are attracted to the verb, undergoing Cliticization and/or Affixation. The endpoint of this development is reached when the relevant unit either becomes a verbal affix or merges entirely with the verb (Heine and Reh, 1984, p. 50).

In other words, certain juxtaposed nouns are drawn into the verbal domain, where they become subject to phonological, morphological and/or semantic attrition and simultaneously become non-referential; i. e., over time, concrete nouns begin to assume an in-

creasingly generic sense and eventually "shift from indicating kinds of entities to qualities" (Mithun, 1986, p. 390), in short, they become classifiers. Thus, incorporated nouns (medials) in present-day Ojibwa are truncated noun stems and express highly generalized concepts. The classifying morphemes discussed in connection with Gestalt properties in section 5.2.2, along with others (e. g., *akkamik* 'stretch of ground/time' or *kami*, the classifier for any liquid substance) are excellent cases in point.

5.5 Current tendencies

Little linguistic information on current trends in the classification system of Ojibwa could be obtained. However, some changes in the system could be extracted from various reports. Thus, there seem to be signs of a weakening of the semantic base, especially with respect to influences of the (once) omnipotent belief system, which has led to cases of recategorization and/or unstable categorization. For example, some nouns which had been coded as animate because of their ceremonial association (e. g., the term for 'silk') are now used with variable gender (animate *or* inanimate). Yet Black (1976, pp. 146-148), drawing on her field work in Ontario, warns that whatever linguistic signs point at erosion in the belief system of the Ojibwa should be evaluated with great caution because the elicitation of faunal taxa revealed the continuing mystique surrounding the naming of certain species. She cites *aweši.ns* (large animals) as an example of multiple labeling. There are also other signs of the continuing influence of ancient taboos. Thus, some speakers claimed that they had heard the word *aweši.ns* but never used it; others reversed their initial judgements. Black (1976) believes that they simply might not have wanted to

discuss what they referred to as a 'bush word', possibly "out of 'respect' and to deliberately leave ambiguous and not-spoken the more precise reference intended. ... If the word is dying, it may be that these occasions are occurring less and less. But the ideas behind the word will likely not prove as frail" (Black, 1976, p. 147).

However, there is no doubt that Ojibwa communities and the language are undergoing changes which the Ojibwa themselves are aware of (cf. Black, 1976, pp. 129-139). The cause of these changes is most likely to be sought in a combination of regular linguistic evolution which is augmented by the growing bilingualism (Ojibwa/English) of Ojibwa speakers, who receive their education in English. Thus, cases of lexical recategorization (including once hard-to-classify animal categories) and the attrition of generic terms are most notable among young speakers. Black (1976, p. 147) believes this to be the result of general English influences and faunal classifications learned at school. Although very difficult to assess, the growing impact of English has apparently led to problems in communication between older speakers and the young generation. This trend is likely to continue and possibly accelerate with the growing acculturation, which also seems to include the development of social stratification (cf. Black, 1976). And yet, according to Black (1976, p. 148), among the young people there are signs of a growing awareness and interest in their people's past, which might be a signal for their desire to retain the language of their ancestors in as full a form as circumstances permit.

Regardless of the developmental course Ojibwa will take, its present-day classification system is possibly even more complex than the previously discussed systems, but it is not arbitrary.

6. Noun classification in Jacaltec

6.0 Introduction

Jacaltec, the final language considered in this study, belongs to the Kanjobalan branch of the Mayan language family. It is the native tongue of some 15,000 speakers in the Guatemalan highlands and is also found in a few nearby Mexican settlements. Similar to the fate of Dyrbal speakers, the indigenous people of Guatemala have been subjected to officially sanctioned persecution by the military which in some areas "have reached the proportion of genocide" (Craig, 1986a, p. 288). Yet the Jacaltec language has survived and has been studied by several scholars, notably Day (1973a, 1973b) and Craig (1977, 1986a, 1986b), who have collected much of the available linguistic data in the course of their extensive field work and compiled grammatical descriptions of the language. Therefore, most of the factual information given in the next sections is based on their grammars of Jacaltec and related publications by Craig (1986a, 1986b).

6.1 Overview of the Jacaltec noun phrase

Jacaltec is a verb-initial ergative language (VSO) with nouns occurring as subjects, objects, indirect objects and prepositional objects.¹⁸ In this overview, primarily those aspects of noun phrases that have direct bearing on nominal classification are considered.

The most conspicuous aspect of simple as well as extended noun phrases is their association with separate sets of classifiers referring to the head noun and several modifying elements. As shown below, only demonstratives and possessives are not affected by classifiers. Demonstratives occur in postnominal position indicating nearness (*ti'*'this)

and distance (*tu'* 'that'); possession (except for inherent) is expressed by the ergative case marker, and *hin-* and *w-* are the respective prevocalic and preconsonantal allomorphs:

Dem.: mac ay yet no' txitam ti'
 (who is to her NCL'animal' pig this)
 'whose pig is this?'

chawoche kap camixe tu'
 (you like NCL'cloth' shirt that)
 'you like that shirt'

Poss.: xcam no' hin-txitam
 (died NCL'animal' Erg./my pig)
 'my pig died'

chinsay ch'en w-ome
 (I look for NCL'rock' Erg./my-earrings)
 'I am looking for my earrings'

All other elements are subject to classification, which is accomplished by means of four systems. The four types and their respective function in noun phrases is briefly described below.

(1) The typical simple noun phrase consists of a noun plus, if the noun is classifiable, an obligatory noun classifier (NCL). Noun classifiers are free morphemes which precede the noun and are intrinsically definite as well as semantically transparent (discussed in detail in sections 6.3.2 and 6.3.3). Examples are (from Craig, 1977, pp. 133-134):

(a) **naj** (NCL'man') sonlom
 'the marimba player'

(b) **ix** (NCL'woman') malin
 'Mary'

(c) **te'** (NCL'wood') ñah
 'the house'

- (d) **no'** (NCL'animal') mis
'the cat'

In occurrences of identical reference, noun classifiers are also commonly used anaphorically in the third person singular and plural. In other words, they function as pronouns which replace an entire noun phrase. However, in contrast to pronouns in other languages, Jacaltec pronouns are not only indicators of the third person but retain much of the semantic load which accompanies them when they classify nouns. For example, they continue to indicate age, kinship relations, etc., and participate in a variety of syntactic constructions. The following examples are from Craig (1986a, p. 264 and 1986b, p. 273):

- (a) xil **naj** xuwan **no7** lab'a
(saw NCL John NCL snake)
'John saw the snake'

- (b) xil **naj** **no7**
(saw **PRO**/he **PRO**/it)
'he saw it'

- (c) xinlok' hune7 **no7** txitam bak'ich tu7 yiñ k'iñ
(I bought ind. NCL pig fat dem. for fiesta

yaj xcam **no7** ewi
but died **PRO**/it yesterday)
'I had bought that fat pig for the fiesta but it died
yesterday'

(2) The simple noun phrase can be extended by numbers, which include (a) *hune'* (one), functioning as an indefinite article, and others which require one of three number classifiers (NbCL) which are suffixed to the number, denoting three major types of referents: (b) *-wafi* (human), (c) *-c'oñi* (animal) and (d) *-(e)b* (inanimate), as in (from Craig, 1977, p. 137):

- (a) xinlok hune' no' txitam
 (I bought a/one NCL'animal' pig)
 'I bought a pig'
- (b) xwil cawati heb' no' winaj
 (I saw 2 NbCL'human' pl. NCL'man' man)
 'I saw two men'
- (c) xinlok cac'ti no' txitam
 (I bought 2 NbCL'animal' NCL 'animal' pig)
 'I bought two pigs'
- (d) swatx'e naj pel cab te' xila
 (made NCL'man' Peter 2 NbCL'inanimate' NCL'wood' chair)
 'Peter made two chairs'

(3) Plural nouns are marked by two overt *plural* classifiers (PICL): (a) *heb'* is used for humans, and (b) *hej* indicates animals); inanimate plurals (c) have no overt indication of the plural, as illustrated in the examples below (from Craig, 1986a, p. 265):

NbCL	PICL	NCL	Noun
(a) ca-wañ (2'human' 'two men'	heb' 'human'	naj 'man'	winaj (man)
(b) ca-c'oñ (2'animal' 'two animals'	(hej) 'animal'	no7 'animal'	nok' (animal)
(c) ca-b' (2'inanimate' 'two houses'	∅	te7 'plant'	ñah (house)

(4) The final classifier type consists of classifiers which Day (1973, pp. 59-61) labels numeral classifiers (NumCL). Craig (1986b, p. 244), however, contends that they are more akin to unit counters or measure terms (a bunch of bananas, a flock of sheep, etc.) in English and other languages than the typical numeral classifiers found in South-East

Asian languages. Day's term "numeral classifier" is adopted here because, contrary to Craig's opinion, these Jacaltec classifiers express physical properties of entities very much like many of the numeral classifiers in Vietnamese. There is a very large set of these numeral classifiers, which occur in classifying constructions like the following ones offered by Craig (1986a, p. 265). Number classifiers are apparently optional if numeral classifiers are present (a and b):

- (a) ox(-eb') **motx** ixim
 (3 NbCL'inanimate' NumCL'basketful' corn)
 'three basketful of corn'
- (b) ox(-c'on) **chehal** ixim
 (3 NbCL'animal' NumCL'horseload' corn)
 'three horseload of corn'
- (c) ox(-eb') nimejtaj **c'alan** si7
 (3 NbCL'inanimate' intensif. NumCL'bundles' wood)
 'three big bundles of wood'

In sum, Jacaltec possesses four classificatory systems related to the nominal paradigm, two of an inflectional nature (2 and 3 above) and two involving free morphemes (1 and 4 above). In the remaining sections, the focus will be on noun classifiers because they have been shown to be primary carriers of meaning, as well as (to a limited extent) on numeral classifiers whose semantic load is discussed in section 6.3.2.

As alluded to above, many Jacaltec nominals are excluded from classification. Only concrete entities are marked with classifiers and, according to Craig (1986a, p. 266), not even all of them. Besides abstracta, which by definition are excluded from the material world, body parts constitute a major example of nouns which are not overtly classified. Yet they are in the scope of classifiers as inalienable nominals which are used in posses-

sive constructions and thus indirectly exhibit class membership through the obligatory classification of the possessor as in (from Craig, 1986a, p. 273):

- (1) y-oj *najpel*
 (E3-foot/leg CL Peter)
 (lit. its foot of *him* Peter)
 'Peter's foot'
- (2) y-oj *cumi7x'ahaw*
 (lit. its rays of the goddess moon)
 'the rays of the moon/the moonlight'
- (3) s-wi7 *te7* *ñah*
 (E3-head CL'plant' house)
 (lit. its head of the [plant] house)
 'the roof'

Other clear exceptions to classification are locative expressions (e. g., road, school, church), as well as such entities as star, air, beer, garbage, etc. (Craig, 1986a, pp. 273-274). Suggestions on the nonclassification of some of these nominals are included in section 6.3.2 in which classifiers pertaining to the physical world are more closely examined.

6.2 Overview of Jacalteco noun classifiers

There are 24 noun classifiers in Jacalteco, which separate classifiable nominals into two distinct domains: (1) the human world which includes spiritual entities, subcategorized on the basis of biological sex, and (2) the non-human world, which comprises terms for non-human animates and physical objects. Scholars generally agree on the list of classifiers provided in Table 29. The abbreviations m. and f. denote masculine and feminine respectively; English glosses reflect core meanings:

Table 29

Jacaltec noun classifiers
(Sources: Day, 1973, pp. 125-126; Craig, 1986a, pp. 266-267)

1. cumam	deity (m.)	13. no7	animal, of animal material (except 'dog')
2. cumi7	deity (f.)	14. metx'	dog
3. ya7	respected human (m./f.)	15. te7	plant (except corn, wheat), consisting of plant material
4. naj	nonkin (m.)	16. ixim	corn, wheat
5. ix	nonkin (f.)	17. tx'al	thread, woven band
6. najni7an	noninfant nonkin child (m.)	18. tx'añ	fiber rope
7. ixni7an	noninfant nonkin child (f.)	19. k'ap	cloth (except 'wool')
8. ho7	nonrespected noninfant kin (m.)	20. tx'otx'	soil/land
9. xo7	nonrespected noninfant kin (f.)	21. ch'en	stone, metal, glass, consisting thereof
10. ho7ni7an	noninfant child kin (m.)	22. atz'am	salt
11. xo7ni7an	noninfant child kin (f.)	23. ha7	water
12. unin	infant	24. k'a'	fire

The two columns of noun classifiers in Table 29 are divided in accordance with the two domains indicated above: Numbers 1-12 are concerned with humans and spiritual entities while numbers 13-14 deal with the classification of nonhuman animates and the material world. Each will be considered in turn in the sections on Gestalt features and animacy.

6.3 Principles of classification

Since nouns in Jacaltec are overtly classified through classifiers, it comes as no surprise that formal criteria, i. e., phonetic form and/or morphological make-up of nouns, do not appear to play a role in nominal classification. Instead, as noted, the semantic content of a classified nominal determines the choice of classifier and its morphological marking.

6.3.1 Categorization

Botanical and zoological taxonomies of nominals in the traditional sense have been thoroughly investigated with respect to Tzeltal, another Mayan language (Berlin, Breedlove and Raven, 1974, 1975; Hunn, 1977), and can be applied to the Jacaltec categorization of the plant and animal kingdom. Thus, although the language lacks a superordinate term for 'plant', the classifier *te7* (plant) constitutes the life-form term for 'tree' which is superordinate to 'telax' (grass, herb, bush) and 'aq' (vine) (Brown, 1984, pp. 157-158). The same principle of taxonomic inclusion holds for *no7 nok* 'animal' and *no7 mis* 'cat' (Craig, 1986a, p. 279). Typically, such a traditional approach to categorization, as has been discussed with respect to Vietnamese, fails to incorporate *the range* of available classifiers into the taxonomic structure. The Jacaltec classifier system is different from Vietnamese and other typical classifier languages in that classifiers - except for those in the human and spiritual domain - are not subject to variation; i. e., their choice is not a matter of situational context and/or dependency upon the selection of a certain quality of an entity which the speaker wishes to emphasize. Instead, the Jacaltecs use classifiers pertaining to the physical world consistently and categorically; there is no crossing of the boundary between the two classificatory subsystems. Neither is there metaphoric extension in this domain. Additionally, the number of classifiers pertaining to the nonhuman/nonspiritual world is limited to twelve (numbers 13-24 above). The invariability and relatively small number of Jacaltec classifiers obviously facilitates the assessment of relations among them. Following Denny's (1976) notions of physical and functional interaction, this was accomplished by Craig. By positing that the set of classifiers pertaining to

the natural world are comprised of five general classifiers signifying physical interaction and seven specific classifiers denoting functional interaction, she offers a taxonomic analysis of the system (cf. Table 30), in which:

the general classifiers correspond to objects of the biological rank of kingdom (*no7* 'animal', *te7* 'plant') while the specific classifiers correspond to objects at a lower biological rank (life form *ixim* 'corn' or generic form *metx'* 'dog'). The additional specific classifiers correspond to objects in a relation of chaining (*tx'arĩ* 'twine' product of the agave plant, and *tx'al* 'thread' product of the cotton plant Craig, 1986a, p. 278).

As Craig (1986a, pp. 278-279) explains, the overall organization of Table 30 reflects two particularly noteworthy features: (1) One concerns the functional interaction and relative nearness between humans and entities found in their environment. Thus, the four domains, read vertically, indicate the decreasing amount of interaction and control which humans have over the members of each domain. At one extreme are animals who can be relatively easily influenced and subjected to human manipulation. In contrast, natural elements, which constitute the other extreme, are typically not subject to human control. The middle ground is occupied by objects of malleable substance (e. g., plant materials and soil), allowing humans to shape and form them. (2) Read horizontally, the similarity to the traditional taxonomic categorization of entities in the Jacaltec world view is striking;¹⁹ i. e., the structure shows a systematic progression from the most abstract categories (organic and inorganic) to the most specific, which contain classes comprised of a single noun (e. g., the classifier for salt). While the two-fold interpretation of Table 30 in itself gives some indication of the intricacy of the classifier system, the members of each category clearly reveal, as further explored below, that cultural relevance is of utmost impor-

tance in Jacaltec categorization.

Table 30

Classifiers denoting physical and functional interaction
(Source: Craig, 1986, p. 278)

DOMAINS	CLASSES		
	GENERAL	SPECIFIC	
O R G A N I C	ANIMAL	1. <i>no7</i> 'animal' [generic]	2. <i>metx'</i> 'dog'
	PLANT	3. <i>te7</i> 'plant'	4. <i>ixim</i> 'corn' [life form] 5. <i>tx'al</i> 'thread' 6. <i>tx'añ</i> 'twine' 7. <i>k'ap</i> 'cloth'
I N O R G A N I C	MINERAL	8. <i>ch'en</i> 'rock'	9. <i>tx'otx'</i> 'soil' 10. <i>atz'am</i> 'salt'
	NATURAL ELEMENTS	11. <i>ha7</i> 'water'	
		12. <i>ka7</i> 'fire'	

Throughout this paper the notion of cultural significance in the linguistic structuring of the material world has surfaced with regularity. Although the degree varies, all the languages examined have shown evidence that aspects of the environment and habitat, as well as existentially and spiritually important objects, tend to be encoded in the respective classificatory system. The same principle applies to Jacaltec. In fact, it appears that the seven special classifiers in Jacaltec are particularly salient examples of the linguistic marking of ecologically and culturally significant objects, some of which, as noted, have

merited the establishment of a separate class consisting of just one object. This view is particularly held by Craig who, armed with a considerable amount of ethnographic evidence, has closely scrutinized the cultural relevance of the special classifiers in Jacaltec. Highlights of her detailed discussion of each of them are given below (Craig, 1986a, pp. 280-284):

(1) *ixim'* corn:

Corn, which includes wheat, is the quintessential staple of the Jacaltec, as well as all other Mayan people. It is cultivated with nearly religious care and constitutes the basis for numerous indigenous recipes. Its extraordinary value is reflected in the fact that it is the only food item with a classifier of its own.

(2) *atz'am* salt:

Salt is essential for physical survival in a tropical climate. In addition, it apparently was one of the most valuable trading items before the arrival of the Spanish. Although this is no longer the case, in the mind of the Jacaltec salt has retained its special value.

(3) *metx'* dog:

Dogs are the only pets in Mayan culture. They are considered man's main companion and possibly a symbol of manhood.²⁰ The use of a separate classifier sets it apart from other dog-like creatures such as the coyote which is classified with the general animal classifier *no7*.

(4) *tx'añ* rope, (5) *k'ap* cloth, (6) *tx'al* thread:

These three classifiers are lumped together because Craig views them as

objects which constitute the manufactured items of the cotton and agave plant and, more importantly, reflect the traditional craft pattern of the closed corporate Mayan community; i. e., the three specific classifiers correspond to the traditional craft specialties of each community (the making of ropes and weaving), in which every member of the community was expected to participate. The centrality of the products of these activities is underscored by their linguistic treatment; i. e., in contrast to their special coding there exist no distinct classifiers for the products of other crafts, such as leather goods or woolen objects, which are classified with *no7* 'animal'.

(7) *tx'otx'* soil:

The motivation for the separate classification of soil and all products made of clay is similar to that of rope, cloth and thread: The making of pottery apparently was ranked high enough in Mayan communities to warrant special "linguistic recognition."

Overall, then, the Jacaltecs' categorization of the physical world provides a comprehensive account of their basic needs and most significant activities. However, the most astounding observation with regard to the classifier system is its semantic transparency, which is unequalled by any of the languages considered previously. A likely explanation of this exceptional situation will be included in the discussion of diachronic processes.

6.3.2 Gestalt

Gestalt features encoded in the classificatory system of the languages discussed so far

assignment to a [noun] class is done on the basis of the knowledge by the Jacaltecs of the constituting substance of the object. The identification of a substance is based on a working knowledge which involves the perception of the object by at least the two senses of vision and touch (Craig, 1986a, 273-274).

Compelling examples for the Jacaltecs' primary concern with the classification of objects consisting of a material which they could control, manipulate, and shape are the special classifiers for plant materials and soil listed in Table 30. Thread, rope, cloth, and clay are not only visible but permit tactile perception through their manual manipulation. Further evidence for the significance of vision and touch is provided by the fact that objects which cannot be perceived by at least these two senses are not classified. Examples are the terms for 'wind' (cak'e), stars (tx'umel), and clouds (asun) (Craig, 1986a, p. 274).

Also of interest is the observation that words denoting an odd mixture of substances which do not contain a dominant substance remain unclassified (e. g., garbage 'k'alem'). In contrast, mixtures containing a functionally dominant substance are subject to classification in accordance with that substance. Thus, the corn drink "atole", which contains corn, water and sugar, is classified with *ixim* (corn) rather than *ha7* (water) or *te7* (plant) (Craig, 1986a, p. 274). Additionally, mixtures of substances whose composition is unknown to the Jacaltecs (e. g., plastic, beer, and Coca-Cola) are excluded from classification.

Although apparently limited to the corn and rock classes, other objects of the material world are classified in accordance with physical properties which they have in common, i. e., by perceptual analogy. For example, hardness and possibly shape determine the classification of "ice", which belongs to the rock class. Early Spanish loans (nail 'ch'en lawux', bottle 'ch'en botella', etc.) were assimilated in analogous fashion. Greater empha-

sis on functional analogy (i. e., methods of cultivation and/or preparation) seems to account for the extension of the "corn" classifier to all wheat products (Craig, 1986a, p. 275).

In sum, with the exception of some numeral classifiers the primary means of expressing Gestalt properties in Jacaltec is the encoding of material substance, which is also extended to selected foreign words which were incorporated into the language at a time when it was still open to the assimilation of loans. Similar to the emphasis on classifying entities which are of great cultural value on the basis of their substance, the marking of certain perceptual features (e. g., shape) also appears to be closely tied to the culture of the Jacaltec.

6.3.3 Animacy

That the linguistic treatment of the animacy concept, excluding nonhuman animate entities, constitutes the most complex and most detailed part of the Jacaltec classificatory system is evident in the fact that exactly half of the classifiers (cf. numbers 1-12 in Table 30) found in the language deal exclusively with the human - and by extension spiritual - domain. The system of classification is made especially intricate by the co-articulation of two important parameters, i. e., the social dimension of rank (divinity, respect and age) and the inherent parameters of sex and kinship (Craig, 1986a, p. 269). Because of the interaction of all aspects pertaining to inherently and socially defined parameters of human existence, Denny's (1976, p. 126) notion of social interaction as one prevailing characteristic of classifier systems has special relevance in Jacaltec.

Craig's interpretation of the analysis of the system by Day (1973b, pp. 125-127) accounts for all features of social interaction which are expressed by the twelve classifiers:

Table 31

Social Interaction Classifiers
(Source: Craig, 1986, p. 268)

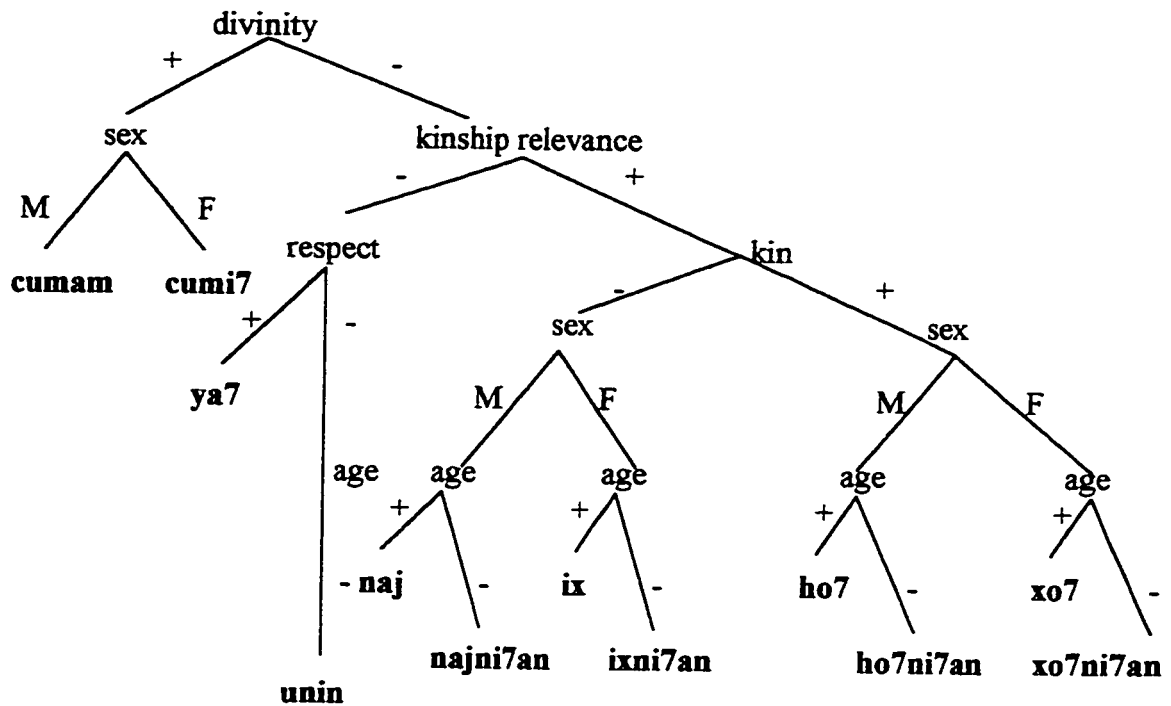


Table 31 indicates two broad areas of concentration which separate high and low deities and god-like entities from mortals and spirits who have no deity status. The classifiers for deities, male *cumam* (from *ko mam* 'our father') and female *cumi7* (from *ko mi* 'our mother') cover an interesting mixture of pagan and Christian terms. Day (1973a, p. 87) cites the following examples: High deities include the male *dyos* 'God', *xesukristo* 'Jesus' and 'sun' and the female *Šahanlax mi7* 'the Virgin'. Among the much more numerous low deities are the male *tyoš* 'saints', *k'uh* 'lightning bolts', several diseases (*sarampyon* 'mea-

sles', *č'ak* 'smallpox' and *hiq'ob* 'whooping cough'), which are apparently perceived as punitive measures of divine justice; hence their collective term *hustisya* 'justice').

The middle level classifiers denote kin relations in great detail, as well as persons who, independent of kinship, are respected as opposed to those who are not, namely infants. This blatant indifference toward the very young is reminiscent of the situation in German and Vietnamese, languages which specifically mark children under a certain age as beings who are considered lesser humans than adults. Although Craig (1986a, p. 271) speculates that an extremely high rate of infant mortality might account for the fact that infants are not viewed as full-fledged members of the community, the cross-linguistic regularity with which small children are singled out as possessing a lesser degree of humanhood does not seem to be accidental. At least, one can hypothesize that societies do tend to encode in their respective language the notion of communal worth and procreational ability, as well as power and influence, properties which are not characteristic of the young.

While the parameter of social ranking within the human domain in Jacaltec has some striking similarities with Vietnamese (and less prominently with other languages), Craig (1986a, pp. 270-272) points out a special feature of social organization which once more seems to emphasize the significance of ethnographic criteria in classification: In the Vietnamese system, membership in a social class is of primary importance; that is, honorific classifiers are frequently bestowed on individuals who belong to an established social class. This is not the case in Jacaltec because there are no social classes. Therefore, persons have *to earn* the respect which warrants the use of the classifier *ya7*. In other words,

"the classifier *ya7* is a personal social status marker, and not a social class status marker, [and] its existence correlates with the recognition of personal individual worth" (Craig, 1986a, pp. 271-272).

In contrast to the invariability of classifier usage in the physical domain, classifiers for humans are subject to a certain degree of variation which accommodates the obviously universal need to express nuances of emotional states, such as liking and disliking of other human beings. Many languages cross into the animal domain in order to insult: In Vietnamese the animal classifier 'con' is used for adult humans with a derogatory effect. Many Germans are blunt to the point of abusive classification by using terms of certain animals as insults (e. g., *dumme Kuh* 'dumb cow' for females; *blöder Affe* 'stupid ape' for males). The Jacaltecs achieve derogatory effects without resorting to non-human classification and, in general, seem to be more subtle and extremely sensitive to the social etiquette established in their respective community. For example, through skillful manipulation of kinship classifiers notions of animosity or friendship can be delicately expressed: By using a non-kin classifier for a kin, rejection of that kin is achieved; conversely, employing a kin classifier for a non-kin signals a favorable attitude.²¹

The Jacaltecs also show great amounts of affection by using the "indulgently loved" (Day, 1973a, p. 88) forms. The prototypical form is the "infant" classifier *unin* which, for example, replaces *najni7an*, *ho7ni7an*, *naj*, *ho7* or their female equivalents if special connotations of affection are intended. Thus, the classifier *unin* has a dual nature: In a communal sense it denotes lack of worth, value, power; in personal relationships it can denote quite the opposite.

In other types of social encounters, it is a sign of insult to withhold the expected classifier *ya7* from persons on whom it would normally be bestowed as an expression of respect and to use *ix* (female) or *naj* (male) instead (Craig, 1986a, p. 270).

In addition to the manipulation of classifiers in the human domain, in direct address Jacaltecs use vocative forms as means of expressing notions of liking/disliking and respect/disrespect.²² Although vocatives, in a strict sense, are not part of the nominal paradigm, they are usually only associated with human referents in discourse and are thus perfect tools for the expression of emotional qualities (not just through the choice of a particular vocative form but also through paralinguistic devices, such as the tone of voice). They are of special relevance here because Craig (1986b, p. 265) postulates that they a) gave rise to the classificatory system in Jacalteco and that they b) account for the evolution of present-day classifiers, which cannot be deduced from nominal forms (cf. section 6.4).

As a whole, the Jacalteco socially determined classifiers exhibit some degree of flexibility in human categorization which allows the expression of favorable and unfavorable relationships between two speakers. However, derogatory classification does not seem to be the norm: "Although verbal manipulation is available to speakers, it is both of a very restricted nature and rarely used" (Craig, 1986a, p. 270).

6.4 Evolution of Jacalteco classifiers

In the discussion of the Vietnamese classifier system it was noted that classifiers are based on nouns, some of which (e. g., class nouns) function as classifiers without any

modification in form while the nominal origin of others is either less discernable or obscure. In comparison, the determination of the source of Jacaltec classifiers is a relatively easy task; i. e., the semantic transparency of the majority of them leave no doubt that they are derived from nouns. In fact, as shown in Table 32, twelve of the present-day classifiers correspond to twelve independent nouns in the nominal lexicon; two classifiers constitute reduced but clearly recognizable nominal forms; two additional ones are identical to their independent possessed noun form. Only four (not counting "repetitive" forms which are starred) of the classifiers, three of them referring to human referents and one to the isolated 'dog', are not easily analyzable. It is, however, possible that these four classifiers have developed out of honorifics and/or vocative expressions mentioned earlier, which in turn might have been derived from kinship terms (Craig, 1986b, p. 265). In a separate study (Craig, 1986c) Craig seems to have found sufficient evidence in support of this developmental course, which also suggests that the current elaborate social classification system is of a relatively recent origin.

In comparison with the development of the classificatory systems examined earlier, the evolution of Jacaltec classifiers holds comparatively few mysteries and "with its lack of complex metaphorical extensions [the system] does not pose the kind of challenge for semantic analysis that other classifier systems around the world do" (Craig, 1986b, p. 254). Similarly, some processes of grammaticalization are relatively easily accessible to examination.

6.5 Grammaticalization

Various developmental processes in Jacaltec have been identified by Craig (1986b).

Table 32

Origin of Jacaltec noun classifiers
(Source: Craig, 1986b, p. 253)

A. Classifiers equaling nouns:

CL	Noun	Meaning
1. atz'am	atz'am	'salt'
2. ch'en	ch'en	'rock'
3. ha7	ha7	'water'
4. ix	ix	'woman'
5. ixim	ixim	'corn'
6. k'ap	k'ap	'cloth'
7. k'a7	k'a7	'fire'
8. te7	te7	'tree'
9. tx'al	tx'al	'thread'
10. tx'añ	tx'añ	'twine'
11. tx'otx'	tx'otx'	'soil/dirt'
12. unin	unin	'infant'

B. Classifiers equaling reduced nouns:

CL	From Noun	Meaning
13. naj	winaj	'man'
14. no7	nok'	'animal'

C. Classifiers equaling possessed nouns:

CL	Possessed Noun	Meaning
15. cumam	cu-mam	'our-father'
16. cumi7	cu-mi7	'our-mother'

D. Classifiers with no corresponding noun:

CL	Meaning
*17. ho7	'male kin'
*18. xo7	'female kin'
19. metx'	'dog'
20. ya7	'respected person'

E. Classifier equaling classifier + adjective:

CL	CL + Adjective	Meaning
21. najni7an	naj + ni7an	'young man (non-kin)'
22. ixni7an	ix + ni7an	'young woman (non-kin)'
*23. ho7ni7an	ho7 + ni7an	'young man (kin)'
*24. xo7ni7an	xo7 + ni7an	'young woman (kin)'

As stated elsewhere in the paper, it has been proposed (and generally shown to be applicable to the languages considered in this study) that linguistic evolution typically involves "phonetic processes, which change the phonetic substance of linguistic units" (Heine and Reh, 1984, p. 16) and consequently affect the morphological make-up of words. Two of these processes, viz. erosion and fusion, have clearly occurred or are occurring in Jacaltec:

(1) Erosion: Some of the reduced classifier forms evidence loss of phonetic segments of the original nouns. For example, *winaj* (man) and *nok'* (animal) have been shortened to the present-day classifiers *naj* and *no7*. However, the prominent phonetic changes in the system appear to have occurred in the suprasegmental area of stress: While all lexical items, including classifiers in pronominal function, are subject to a stem initial stress rule, all classifiers accompanying a noun are unstressed. Repeater constructions (i. e., classifier plus cognate noun) provide particularly clear examples of the latter, as illustrated in (a) and (b) below; the retention of lexical stress by classifiers functioning as pronouns is shown in (c) and (d):

- | | |
|--|---|
| (a) <i>no7 nók'</i>
(CL animal)
'the animal' | (b) <i>ch'en ch'én</i>
(CL rock)
'the rock' |
| (c) <i>cawáñ heb' náj</i>
(2 pl. CL)
'the two of them' | (d) <i>xi náj tet ix</i>
(said CL to CL)
'he said to her' |

(2) Fusion: Further reduction of the phonetic form of classifiers has been observed in spoken Jacaltec. Reminiscent of proposed processes leading to prefixation (e. g., in Bantu languages), speakers tend to fuse classifiers with the following noun by deleting the final

consonant of the respective classifier:

(a) $te7 \quad té7 > teté7$ (b) $no7 \quad nók' > nonó7$
(CL tree) (CL animal)
'the tree' 'the animal'

(c) $ha7 \quad há7 > hahá7$ (d) $tx'otx' \quad tx'ótx' > tx'otx'ótx'$
(CL water) (CL soil)
'the water' 'the soil'

It is a likely scenario that the fusional processes currently found only in spoken Jacalteco will over time lead to further changes in the morphological form of classifiers which are used as noun adjuncts; i. e., they might well be on their way to becoming prefixes while their pronominal counterparts might become the basis of a separate pronominal system.

It has been posited that, in addition to phonological and morphological processes, the evolution of languages involves "functional processes, which affect the meaning or grammatical function of linguistic units" (Heine and Reh, 1984, p. 16). In essence, this means that under certain circumstances a lexical item loses semantic content and becomes the recipient of a "non-lexical [syntactic] function, which may ultimately become its only function" (Heine and Reh, 1984, p. 36). Jacalteco classifiers show signs of desemanticization in that they have acquired a more general (generic) meaning than the nouns which they classify. For example, the term for 'tree' (*te7*) has become the classifier for all plants, as well as for all plant parts, plant products and objects made of wood. Equally, the word for 'rock' (*ch'en*) has been generalized to classify things consisting of glass and metal, i. e., hard objects. In terms of semantic content, this implies that classifiers have come to encode the prototypical quality of the objects which they qualify rather than a

"bundle of semantic features" (Lehmann, 1985, p. 309). This is similar to the semantic role of classifiers in other languages, e. g., Vietnamese, which is claimed to be the expression of *concepts* (cf. Hundius and Kölver, 1983, p. 182) rather than the denotation of specific nominal attributes. Although there is apparent redundancy in the overall semantic reading of the classifier/noun combination, if examined separately, there is evidence of the semantic bleaching of the classifier proper which, in turn, suggests that classifiers might have attained a more significant syntactic status. Craig's (1986b) examination of certain kinds of Jacaltec noun constructions indicates that this seems to be the case.

The syntactic function acquired by words which have been recruited into the closed set of classifiers is obvious in two different types of constructions which involve compound nouns: In one type the first part of the compound constitutes a classifier; in the other it denotes the substance expressed by a compound.²³ Comparing noun classifiers with the words of compounds denoting substance, Craig (1986b, pp. 260-262) notes that they occur in complementary distribution, as shown in Table 33.

In (a) reference is made to the animal by the classifier *no7*, as opposed to the substance noun *te7* which refers to a wooden likeness of the actual animal. In (b) *te7* is the classifier for wooden objects and *ch'en* is the substance noun for rock objects. In (c) the difference between classifier and substance noun is further emphasized by the fact that plastic shoes are not classifiable (as are all substances which were more recently introduced into Jacaltec culture). Therefore, the borrowed term "plastico" can only occur as a substance noun. In more general terms, there exists "a defined set of substance nouns that may function as classifiers in a prenominal position"²⁴ as opposed to an open set of nouns,

Table 33

Complementary distribution of classifiers and substance nouns
(Source: Craig, 1986b, p. 260)

Class.	Noun	v.s.	Noun	Substance
(a) no7	cheh 'Horse'		cheh	te7 'Wooden horse'
*te7	cheh 'Wooden horse'		*cheh	no7 'Horse'
(b) te7	ñah 'House'		ñah	ch'en 'Cave'
*ch'en	ñah 'Cave'		*ñah	te7 'House'
(c)*plastico	sapato		sapato	plastico
plastic	shoe		shoe	plastic 'Plastic shoe'

including all the substance nouns that may function as noun modifiers in a noun compound construction" (Craig, 1986b, p. 261). Thus, in addition to phonological and semantic attrition, Jacaltec classifiers exhibit signs of grammaticalization processes which Lehmann (1985) has termed *fixation* and *obligatorification*: The former refers to the fact that classifiers occupy a fixed slot in the noun phrase construction; the latter expresses the elimination of the free choice of classifying elements in accordance with the speakers' communicative needs (Lehmann, 1985, p. 309). The foregoing has prompted Craig to postulate that "Jacaltec noun classifiers are grammatical rather than lexical morphemes" (Craig, 1986b, p. 265). By adding the observation that classifiers, aside from their classificatory function, have also developed into significant, systematically used elements in the construction of certain syntactic structures involving such notions as definiteness, (co)referentiality and topicality (for detail cf. Craig, 1986b, pp. 265-280), Craig comes to the conclusion that

on a continuum from lexical to grammatical systems, this advanced degree of syntacticization ... places the Jacaltec classifiers at a mid point between the obligatory inflectional nature of the gender and noun class markers and the pragmatically determined discourse use of numeral classifiers [in numeral classifier languages] (Craig, 1986b, p. 266).

6.6 Current tendencies

The selective classification of the Jacaltec nominal lexicon and the fact that newer foreign loans remain unclassified suggest a) that, as noted earlier, the classifier system is of recent origin and b) that it is no longer expanding; i. e., the development of the system was apparently arrested some time after the initial Spanish contact and has lost its productivity. Since no updated information on the Jacaltec communities and their language practices could be discovered, little can be said about most recent developments. However, there is some evidence in earlier sources that some of the traditional classifications relating to the pre-Christian era are in the process of being modified or possibly outright abandoned. For instance, Day (1973a, p. 87) notes that the use of *cumam* and *cumi7* as classifiers for the sun and the moon is no longer consistent in that it alternates with the use of no classifier. Day's observation appears to indicate that, similar to developments in Dyirbal and Ojibwa, there is gradual erosion in the ancient belief system of the present-day Jacaltecs for whom the sun and the moon no longer constitute entities that warrant special linguistic recognition as deities. This distinction has been taken over by the Christian God. However, this fact has not changed the essence of the system: Although the Jacaltecs have "re-labeled" the ultimate power holder(s), the categorization scheme remains the same.

Overall, the Jacaltec classificatory system exhibits many striking similarities with that of Vietnamese but also differs significantly in some ways: The classifier part of the system is semantically even more transparent than Vietnamese classifiers and clearly not arbitrary. A more advanced stage of grammaticalization is evidenced by the concurrent utilization of morphological classificatory devices, and by the interaction of classifying elements with syntactic structure, elements that are absent in Vietnamese.

7. Comparative analysis

7.0 Introduction

At the beginning of this study, several basic, very general assumptions were made which rested on the premise that humans are categorizing creatures and that linguistic signs necessarily reflect their propensity toward ordering phenomena of the physical and non-physical world. First, it was posited that, in spite of widely differing techniques of noun classification across the world's languages, nominal classification is not arbitrary, i. e., that there exists an underlying motivation for categorizing the nominal lexicon of languages. Secondly, it was postulated that principles of classification are fundamentally the same in all languages because they are the product of human beings who possess the same sensory apparatus, the same nervous system, and the same cognitive processing capabilities. Thirdly, it was assumed that principles involving the animate/inanimate state of entities, as well as their perceptual properties (referred to as *Gestalt*), are not only of primary interest to humans but are ultimately tied to their neurophysiological state and, therefore, would be dominant and most likely universally applicable criteria in categorizing, i. e., in the formation of a conceptual model of the material world and subsequent linguistic coding. Finally, it was theorized that the different overt manifestations of synchronic classification systems are a reflection of the evolutionary stage of a given language. More specifically, different classification techniques were assumed to be the result of grammaticalization which, in a very broad sense, was understood as a continuous evolutionary process characterized by a gradual loss of semantic content of classifying elements and the simultaneous increase of their syntactic function, thus producing diverse

synchronic classification systems occupying different points on a developmental continuum.

The analysis was two-fold. First, since many studies (too numerous to list here) have clearly established that the nominal lexicon of the world's languages is not a random, unprincipled collection of words, but instead comprises lexical domains which are internally structured and thus should shed some light on the way in which knowledge is organized in the head of humans, the internalization and conceptualization of external stimuli in the six languages under consideration was first briefly considered in terms of the taxonomic arrangement of some lexical domains. Secondly, traditional nominal classification systems (grammatical systems) were explored with respect to their classificatory function, and the question was raised of whether or not it is possible to establish a relationship between the lexical organization of nominals and their grammatical coding through articles, affixes, and numeral classifiers, collectively referred to as classifiers, in each language. It was felt that if such a relationship could be uncovered and "if the case ... [could] be made that what classifiers define are categories, then it would be a case of overt categorization in language" (Craig, 1986, p. 2), a fact that would alleviate the import of claims that many classificatory systems are largely arbitrary. However, if such an approach proved to be unsatisfactory, a further question would be asked: Is there a way of establishing a correlation between lexical classification and aspects of the grammar other than the traditionally acknowledged classificatory techniques? Since it was believed that processes of grammaticalization might provide insight into any additional underlying connections, some consideration was given to certain known diachronic developments in each lan-

guage.

In the following sections the results of the examination of both the lexical and grammatical aspects of categorization of nominals in the six languages considered in this paper, are summarized and assessed. In addition, throughout the discussion reference is made to the role of cultural and extralinguistic parameters which proved to be of extraordinary significance in several languages.

7.1 The structure of the lexicon

The nominal universe of languages consists of more or less defined lexical domains which are said to be taxonomically organized. Although extremely little information on lexical taxonomies was available in the case of some languages (esp. in Dyirbal) and, overall, taxonomic structures were given only cursory inspection, all languages in the sample show evidence that taxonomic structuring is part of the organization of their nominal lexicon. Although the complexity of the taxonomic systems varies (cf. Table 34), nominals of lexical domains in each language are partitioned into labeled categories which generally occur at three levels of abstraction: Superordinate, basic and, subordinate. These levels are related to each other through greater or lesser degrees of inclusiveness and specificity.

As apparent in Table 34, not all languages in the sample possess equally developed levels. In German full taxonomies consisting of superordinate categories (which in many cases are layered; e. g., a superordinate term includes a less inclusive intermediate "superordinate"), basic level categories and subordinate categories have been extensively

Table 34

Examples of the hierarchical organization of the nominal
lexicon in the language sample

Language	*Superordinate	Basic level	Subordinate
German	Möbel(stück) 'furniture'	Tisch 'table' Stuhl 'chair'	Esstisch 'dining table' Barstuhl 'bar stool'
Ojibwa	/bema.diziwa.d/ 'living things'	/awešj.yag/ 'large animal' /manido.šag/ 'insects'	/makwa/ 'bear' /atik/ 'caribou' /ginebi.g/ 'snake' /o.ji.ns/ 'fly'
Swahili	kiumbe 'creature'	mnyama 'animal' mdudu 'insect'	kasa 'turtle' nzige 'locust'
Vietnamese	đồ đạc 'furniture'	bàn 'table' ghế 'chair'	bàn nhà bếp 'kitchen table' ghế nhà bếp 'kitchen chair'
Jacaltec	*nok 'animal'	lab 'snake' mis 'cat'	
Dyirbal		**yugu 'tree'	giyara 'big softwood stinging tree'

*It is not known whether or not Jacaltec possesses a higher superordinate taxon.

**Based on information provided by Dixon (1972, 1980), it is assumed that Dyirbal possesses no superordinate botanical taxon.

researched and documented in numerous lexical fields (cf. section 1.3.1). In Ojibwa, although considerably less data are available, some similarly complex taxonomies have been established (cf. section 5.2.1). The few analyses of the Swahili lexicon in the area of ethnobotany and ethnozoology indicate that Swahili speakers adhere to analogous principles of hierarchical structuring of the lexicon (cf. section 2.3.2). The same holds for Viet-

nameese, for which several very specific taxonomies were readily established by two informants (cf. section 3.4.1) and for Jacalteco (cf. section 6.3.1), although limited data were available for the latter because only some general references with regard to the taxonomic arrangement of zoological and botanical entities were found. As noted above, insufficient data were available for Dyirbal. However, from the few comments made in the literature it can be deduced that *full* taxonomies (i. e., possessing at least three levels) are *not* characteristic of the language (cf. section 4.2). There is indication that Dyirbal speakers primarily employ basic level expressions unless the use of generic terms is necessary to avoid vagueness, or if greater differentiation is important for pragmatic reasons. A possible explanation is given by Brown (1984) and Perkins (1992) who, in their extensive cross-linguistic surveys, found a positive correlation between societal and taxonomic complexity. Thus, large urbanized societies tend to encode entities more fully than small-scale, rural societies. This aspect will be addressed again in conjunction with the utilitarian aspect of lexical organization.

7.1.1 Gestalt properties in taxonomic organization

Taxonomic examples provided in the paper allow the overall generalization that the basic level category constitutes the primary and most informative one in that it is the level at which the most common and pragmatically significant knowledge of an individual speech community and people in general is lexically expressed. It is the level of entities which humans encounter in everyday activities, which they can see or use or manipulate, in short, the basic level vocabulary of the six languages represents tangible things with which people regularly and routinely interact. Therefore, it is not surprising

that the encoding of Gestalt features is most clearly expressed by basic level terms. Because the reflection of perceptual properties at the basic level is obvious in the taxonomic samples, the following brief survey is limited to a few generalizations.

(1) Overall, size is probably the most general parameter in the establishment of basic categories. For example, in Swahili botanical entities are grouped together in accordance with height: Trees and grasses constitute the polar extremes of large vs. small; the third category comprises a variety of medium-sized plants. Similar size differentiation characterizes the botanical taxa of Jacaltec and Vietnamese and the zoological taxonomies provided for German and Ojibwa. Perhaps the most interesting example, however, comes from Dyirbal, whose speakers have dispensed with generic terms for animals that conspicuously differ in size (kangaroo vs. wallaby) and are, therefore, easily identified. The prominence of size in the classification of objects correlates with observations made by Brown (1984, 1990) who, on the basis of extensive cross-linguistic analyses of botanical and zoological taxonomies, concludes that the encoding sequence of these entities follows a pattern which (especially in the faunal realm) appears to be directly related to their perceptual salience. Thus, trees are linguistically labeled before other, perceptually less well-defined botanical species:

Tree ... precedes **grass**, **vine**, and **bush**, as well as **grerb** [small, leafy, nonwoody plants] in botanical life-form growth. ... The priority of **tree** probably relates in part to the fact that trees are the largest plants in environments and thus "stand out" vis-à-vis other plants. In other words, ... trees are especially distinct or salient because of their large size (Brown, 1984, p. 103).

(2) The shape of entities, frequently overlapping with that of size, seems to be the second prevalent Gestalt property expressed at the basic taxonomic level. Simple examples

are found among artifacts such as the German basic terms for chair, table and closet which, among other features, evoke the image of square entities while the notions of flatness and roundness are associated with such basic German terms as *Teller* (dinner plate) and *Platte* (serving dish). The elongated shape of certain living organisms (e. g., that of fish varieties) is evident in basic category members. There are also cases of unusual classification. For example, in Ojibwa the elongated shape and small size of indigenous snakes appear to be responsible for their allocation to the insect category.

Various kinds of material substance, again often not neatly separated from size and shape, constitute additional physical attributes of basic level terms, but for the sake of brevity, will not be further discussed here. However, it is of interest to take at least notice of a perceptual property which was not considered in this paper, viz. color. An excellent example is the German basic level term 'Rappe' which intrinsically specifies the black color of a horse.

7.1.2 Reflection of animacy at the basic level

Although not clearly evident from all taxonomic samples given in the paper because some only make generic reference to the human domain, information gathered from relevant sources (esp. dictionaries) indicates that in the classification of animates there is a basic division into human and animal categories. The most detailed lexical differentiation again occurs at the basic level and in the case of humans is largely governed by principles of social organization and social interaction resulting, for example, in a multitude of lexemes denoting members of the nuclear and extended family, community members, oc-

cupations, etc. In short, animate entities are prominently encoded as basic level terms in the nominal lexicon of all languages in the sample. Since related research, notably by Brown (1984) who compiled information on zoological taxonomies in 144 languages, suggests that the detailed labeling of living organisms is a world-wide phenomenon, the prominence of animate terms in the lexicon is not all that interesting, nor is it very informative. However, the grammatical coding of animacy in most of the respective languages, as illustrated throughout this paper, does hold some surprises and more succinctly mirrors the kind of social structure prevailing in the individual societies, as well as aspects of their idiosyncratic interpretation of the "living" domain. Therefore, the issue of animacy is not further pursued here but is more fully discussed in conjunction with grammatical classification.

7.1.3 Variability of lexical categorization

Although the primary utilization of the basic level of categorization of the most common entities is apparently shared by all speakers of the six languages, it is not necessarily the case that the content and/or demarcation of that level is exactly the same in all languages or even for all speakers of one language. Several factors appear to be responsible.

First, at least in part, variation in lexical categorization can be interpreted as a prototype effect; i. e., humans apparently do not conceptualize external stimuli by drawing rigid lines between related categories or levels of categories. Rather, decisions in category allocation seem to depend on the basis on which contrasts are established, i. e., the selection of different criterial attributes. Thus, Ojibwa speakers' choice of terms for "human being" depends on the type of animate entities against which humans are set off (In-

dian vs. other human or Indian vs. animal). Some groups of Swahili speakers are at variance in the categorization of certain botanical entities by making different distinctions as to the inclusion of *plant* and *grass* at a particular hierarchical level: While one group separates *grass* from *plant*, another combines the two. Similarly, German speakers alternate in their designation of the lilac plant as the life form *tree* or *bush* (Fliederbaum 'lilac tree' vs. Fliederbusch 'lilac bush').

Secondly, the flexibility of lexical categorization also appears to be related to a person's knowledge and the functional/utilitarian relevance of entities which, additionally, are tied to cultural priorities, i. e., the level which is understood as *basic* "can vary as a function of both the cultural significance of the domain and the level of expertise of the individual" (Mervis and Rosch, 1981, p. 93). The reader might, for example, remember that average speakers of German typically apply basic level terms to superordinate categories denoting wild animals (e. g., *Hirsch* 'male deer' stands for all varieties of the species). Conversely, these speakers include such words as "Wildschwein" (the generic term for 'wild boar') in their basic level vocabulary because the two more specific terms "Keiler" (male wild boar) and "Bache" (female wild boar) are either not known or have no practical value for them. In contrast, because the biological sex of wild animals is relevant in hunting, hunters consider "Keiler" and "Bache" basic level vocabulary items and routinely employ them. A unique example illustrating the functional relevance of lexical classification comes from Swahili. At least some Swahili speakers appear to establish the categorical level of certain botanical species (e. g., plant vs. tree) on the basis of the material structure of the stem because the stem structure determines whether or not one is able

to use the "plant" as firewood.

The utilitarian/functional basis of words which are considered basic is furthermore evident in languages as a whole. Thus, the German animal taxonomy is particularly detailed for domesticated animals because they traditionally have been of considerable economic value. Another example is Dyirbal which, as mentioned before, lacks generic expressions for some larger animals but possesses a term for the life form 'snake', as well as basic level 'snake' terms. Since the labeling of certain animal discontinuities is reputed to develop in languages across the world in relatively predictable ways - Brown (1984, p. 24) gives a sequence of *no life forms > bird/fish/snake > wug/mammal* (*wug* defines a small creature other than a bird, fish or snake) - the absence of 'mammal' in Dyirbal can reasonably be attributed to the fact that it is much more vital to know as much as possible about snakes than mammals because many snakes are extremely poisonous and pose a continuous threat to humans. The most obvious synchronic support for the utilitarian and functional interaction between humans and things in the world comes from Vietnamese and Jacaltec in which semantically transparent basic vocabulary items denoting culturally and existentially valuable objects have been singled out for overt classification; i. e., they have been generalized to function as grammatical markers.

Finally, the variability of lexical categorization also seems to be associated with the ecological particularities of the environment in which speech communities find themselves. The more detailed taxonomic ranking of snakes by Dyirbal speakers can be argued to be a reflection of a habitat (i. e., tropical rain forest) which is notorious for its abundance of this particular species. In contrast, the Ojibwa find it difficult to classify

snakes, combining them with bugs most likely because "in northern latitudes ... snakes are scarce, of few varieties, and inconspicuous because of small size" (Brown, 1984, p. 32). Differences in classification of certain plant species among Swahili speakers occupying different habitats have also been observed (cf. section 3.2). Brown (1984, pp. 31-32, 108-112, *et passim*) cites many other examples of differences in the naming of botanical and zoological species, as well as deficiencies in labeling, in a variety of languages and provides plausible environmental explanations for each, thus underscoring the influence of the physical world on human language in general.

In summary, the taxonomic classification of nouns at the lexical level in the language sample provides no particularly new insights. Rather, the survey suggests that the structure of the nominal lexicon of each language is in keeping with the findings of numerous empirical studies by scholars representing diverse disciplines, notably psychology and anthropology, in addition to prominent linguistic theories. The following generalizations are deduced from the data:

- Taxonomic systems are relative. While the hierarchical organization of the nominal lexicon undoubtedly constitutes a general device of classification in the languages examined, the data substantiate the major tenet of prototype theory that the categorization of linguistic elements does not establish categories with clearly defined boundaries; i. e., lexical categories are neither discrete groupings always coinciding with rigid classification principles of the natural sciences, nor do the languages sampled follow the principles of strict inclusion/exclusion of category members which Kay (1971) initially postulated for the structure of natural language. Rather, taxonomic systems have inbuilt dynamics

designed to accommodate the special needs of individuals, certain interest groups and whole societies. While a system must continuously strive for a measure of stability to avoid disintegration, "it should be flexible enough to accommodate new information and to adapt itself to changing circumstances" (Geeraerts, 1985, p. 360). A prototype model (cf. section 2.3.2, *passim*) of the lexicon seems to account best for this necessary flexibility. Furthermore, a prototype interpretation of lexical categories is able to account for their analogical and metaphorical extension and also implies that prototypes themselves are subject to change over time.

- Grammaticalization processes, in their broadest sense, begin with taxonomic categorization or, more accurately, when conceptualized human experiences, which are translated into linguistic signs, surface as lexical entries in the nominal lexicon. If semantic generalization is viewed as a major aspect of grammaticalization, the increase of the scope of selected lexical items from basic concept to superordinate constitutes a major step toward the ultimate degree of generalization exhibited by overt classifiers. An example is the Dyirbal word *mayi* (honey): In the course of its development it became increasingly generalized, lost much of its semantic import (i. e., its denotation of 'honey') and presently functions as *classifier* of all non-flesh foods.

- The efforts of humans to organize the world around them seem to be universal in that the *same strategies and principles of organization* are applied. The fact that "the relevant human capacities are [presumed to be] utilized in the same way" (Lakoff, 1987, p. 38) constitutes the second most likely universal feature of the lexicalization process and of subsequent processes of lexical categorization. Finally, the encoding of the semantic

principles of animacy, followed by Gestalt, was observed in all languages of the sample. Thus, these principles are assumed to have universal validity in lexical categorization.

7.2 The classifier systems of the language sample

In traditional linguistics, different sets of grammatical forms have been singled out as "classifiers" of the nominal lexicon in the languages surveyed. These forms, which can be bound and/or unbound, are frequently accompanied by additional elements which also fulfill classificatory functions. For example, German possesses the tripartite gender system plus classifying affixes, the latter of which are referred to here as *alternate classification system*. Classifier sets differ in number. In this study the range is from two in Ojibwa to approximately 200 in Vietnamese. Classifiers differ in obligatoriness. Thus, Vietnamese classifiers are not obligatory in many cases, while German classifiers are categorical. Finally, classifiers exhibit different degrees of semantic transparency. In the language sample used here, classifying morphemes are totally transparent in Jacaltec, moderately transparent in Vietnamese and nearly opaque in German, Swahili, Dyirbal and Ojibwa.

Since the different techniques of nominal classification employed by the six languages were posited to be the result of different stages of development, i. e., of the degree of overall grammaticalization each language has attained, it is first necessary to find some principled means of assessing the approximate stage of overall grammaticalization of each language. Various aspects of grammaticalization have already been addressed in conjunction with the brief discussion of diachronic developments in the six languages,

and a very general definition of grammaticalization as a continuous process of desemantization with concomitant syntacticization has been offered. A comparative analysis, however, obviously requires some further clarification of this complex, far from fully understood concept, as well as a synthesis of some major relevant parameters.

Of the various tentative definitions which scholars have advanced for *grammaticalization*, the one by Lehmann (1995) seems general and yet specific enough for the present purposes. He states:

Grammaticalization is a process leading from lexemes to grammatical formatives. A number of semantic, syntactic and phonological processes interact in the grammaticalization of morphemes and of whole constructions. A sign is grammaticalized to the extent that it is devoid of concrete lexical meaning and takes part in obligatory grammatical rules (Lehmann, 1995, preface).

While Lehmann includes all major, commonly acknowledged criteria, it seems advantageous to add the size of the classifier inventory to his definition because it appears to have some significance in the context of this paper; i. e., the more highly grammaticalized languages in the sample possess fewer classifying morphemes than their more weakly grammaticalized counterparts. This is in keeping with the Bybee et al. (1994) general observation

that it is ... typical for grammatical ... classes to reduce further in size. Individual members are lost, usually by one member generalizing to take over the functions of other members. Such reduction in size is especially evident in classifier system in which one member tends to increase in productivity and displace other smaller classes (Bybee et al., 1994, p. 8).

If the number of classifiers, their obligatoriness and semantic transparency are taken as preliminary devices for ordering the six languages on a scale ranging from more weakly to more strongly grammaticalized, Vietnamese and Jacaltec occupy points on the

more weakly grammaticalized end of the continuum while the remaining four languages would be located on some point at the opposite end. Lehmann's (1985, 1995) framework of other, more explicit grammaticalization parameters, which seeks to integrate and correlate various major characteristics of grammaticalization and grammaticalization *processes* identified to date, seems to lend support to the proposed scalar ordering. Making an initial distinction between "the two fundamental aspects of any operation on linguistic signs, viz. their selection and their combination, ... [labeled] **paradigmatic** and **syntagmatic aspects**, respectively" (Lehmann, 1985, p. 306; cf. also Lehmann, 1995, pp. 126-160), Lehmann proposes six basic parameters which jointly appear to be useful guidelines for the establishment of a scale indicating the relative degree of grammaticalization which linguistic signs, i. e., classifiers in this case, exhibit synchronically. They are briefly explained below (Lehmann, 1985, pp. 306-307).

A. Paradigmatic parameters

1. Integrity: The degree of phonological and semantic substance of a sign which distinguishes it from other signs.
2. Paradigmaticity: The degree of integration of a sign into a paradigm and its dependency on it.
3. Paradigmatic variability: The degree to which a sign can be substituted or omitted.

B. Syntagmatic parameters

1. Scope: The degree to which a sign enters into or helps form a construction.
2. Bondedness: The degree to which a sign depends on or attaches to another sign.

3. Syntagmatic variability: The degree to which a sign can be moved around in a construction.

When diachronic *processes* of grammaticalization are added to these parameters and the classifiers in the language sample are judged against them, a rough estimation of the approximate position of each system on a scale of grammaticalization should emerge.

The processes discussed below are again based on Lehmann's (1985, pp. 307-309) proposal.

1. *Attrition*, the erosion and decay of phonetic, morphological and semantic substance of units either emerging as classifying elements or motivating the rise of classifying elements, has been shown to have the most dramatic effect in German. This is the only language in the sample that recruited demonstrative pronouns for classification purposes and simultaneously developed an additional morphological classification system (cf. sections 1.4 and 1.5). Since Swahili, Dyirbal and Ojibwa classifiers can be claimed to be linked more directly to their semantic origin, however vague, it is deduced that they were somewhat less affected by attrition. With respect to Swahili, this assumption is supported by the alleged link between the classification of some botanical taxa and certain noun classes (cf. section 2.3.2). The class III noun marker *-m* in Dyirbal is most likely a remnant of the word for 'honey'. Many of the Ojibwa Gestalt classifiers (medials) have been shown to be derived from lexical items (e. g., *kami* 'liquid' > classifier for all liquid substances). Although present in Vietnamese, particularly with respect to the general classifiers, the much lesser impact of attrition is obvious if one excludes alleged evolutionary stages prior to the development of numeral classifiers. The semantic base of classifying

units is particularly evident in the case of class nouns (e. g., *cây* 'tree/plant' > classifier for stick-shaped/plantlike objects). The same observation applies to Jacaltec where some words either function as ordinary nouns (e. g., *ix* 'woman' and *te7* 'tree') or as classifiers.

2. *Paradigmatization* is the process of integrating periphrastic syntactic constructions into morphologically determined paradigms which steadily decrease in size, but at the same time gain in homogeneity. This process is not applicable to Vietnamese and is difficult to assess for the remaining languages. If the definition is understood correctly, tentative candidates are the German articles which are integrated into the case system (e. g., genitive *des Hauses* 'of the house'), Swahili locative prefixes (cf. section 2.1), the locative elements of Dyirbal noun markers (i. e., *bala-*, *yala-*, *ɾala-*; cf. section 4.3) and the entire verbal morphology of Ojibwa (cf. section 5.1).

3. *Obligatorification*, simply meaning that the usage of classifiers becomes increasingly indispensable in the construction of sentences, a process of syntactification which presupposes a lessening of semantic selection restrictions, is evident in the entire corpus. But again there are major differences in degree across the languages, as well as within individual ones. The obligatory usage of Vietnamese classifiers ranges from zero (primarily in spoken discourse) to mandatory in certain situations. As far as could be ascertained, all Jacaltec classifiers must be used with the nouns they classify. The same principle applies to German, Swahili, Dyirbal, and Ojibwa. From a typological point of view, there is an interesting correlation between the morphology of the six languages - lexical, derivational, inflectional - and the parameters of *relevance* (the degree to which a classifying element directly modifies the meaning of the word it classifies) and *gener-*

ality (the degree to which a classifier is required in the NP construction) proposed by Bybee (1985, pp. 82-85): A high degree of relevance tends to correspond to a low degree of generality (the lexical system of Vietnamese,); conversely, a low degree of relevance tends to correspond to a high degree of generality *and obligatorification* in German and Swahili, both inflectional systems, assigning an in-between position to the partly derivational morphological systems of Jacaltec, Dyirbal, and Ojibwa.

4. *Condensation*, the ability of a classifier to associate freely with constituents of different complexity, i. e., its syntactic scope, is gradually reduced and eventually lost when a classifier modifies only nouns or their stems. This principle applies to all languages in the study because all classifiers form a tightly knit unit with the nouns they modify.

5. *Coalescence*, referring to the process in which a classifying sign moves from juxtaposition to affixation, is obvious in Swahili, Dyirbal and Ojibwa where classifiers are suffixed either to nouns, pronouns or to nouns and the verbal stem. Just as obvious is the non-coalescence of Vietnamese classifiers and nouns. German and Jacaltec constitute peculiar cases in that articles/classifiers are not bound while other classifying morphemes occur as suffixes. Consequently, the two languages need to be placed on both ends of the continuum for this parameter.

6. *Fixation*, i. e., classifiers not being able to be moved around in a sentence but becoming fixed slot fillers, is in effect in all six languages.

The correlation of all parameters and processes, when applied to the language sample in terms of being more weakly or more strongly grammaticalized, yields the distribution in Table 35 and a rough estimation of the approximate degree of grammaticalization.

Table 35

Application of parameters and processes
to language sample

Lan- guages	Paradigmatic aspect Parameters			Syntagmatic aspect Parameters			Processes					
	Integrity	Paradig- maticity	Paradigmatic variability	Scope	Bondedness	Syntagmatic variability	Attrition	Paradig- matici- zation	Obligatori- fication	Conden- sation	Coa- les- cence	Fixation
Viet- namese	X	X	X		X					X		X
Jacal- tec	X				X			X(?)	X	X	X*	X
Dyir- bal							X	X	X	X	X	X
Ojib- wa							X	X	X	X	X	X
Swahi- li							X	X	X	X	X	X
Ger- man					X		X	X	X	X	X*	X

*Alternate classification system

In most general terms, Table 35 suggests the scalar synchronic ordering of the six languages as follows:

Vietnamese Jacaltec Dyirbal Ojibwa Swahili German
Lowest ————— grammaticalization —————> highest

If one accepts the proposed scale as a tenable approximation and subscribes to the notion that the semantic content of a linguistic sign diminishes as it travels along the path of grammaticalization, reflexes of the encoding of perceptual attributes and animacy should be most transparent in the Vietnamese and Jacaltec classifier systems and least, if at all, in that of the remaining languages. The data reveal that this is indeed the case.

7.2.1 Reflection of Gestalt properties in classifier systems

The grammatical classification of basic level words which encode percepts has been shown to be governed by (in an ascending order of importance) phonetic, morphological and semantic criteria occurring singly or in combination and frequently in competition with each other. Below is a short review and summary of these principles and their reflection - or lack thereof - in the individual classifier system of the languages surveyed.

In German, phonetic principles have been shown to have considerable bearing on the classification of monosyllabic core vocabulary. For example, it was illustrated that there is a correlation between nouns denoting the perceptual notions of pointedness/flatness/hollowness of objects and certain consonant clusters in that these nouns have a strong tendency (in ca. 90% of the cases) to be coded masculine or feminine unless semantic criteria take precedence. However, in spite of the predictive power of some of these pho-

netic rules, their impact becomes much less impressive if one considers the fact that monosyllabic nouns constitute not even 6% of the modern noun inventory (cf. Kohler, 1995, p. 225). Thus, the relationship between phonetic criteria and grammatical classification is weak and becomes even more so because no compelling evidence has been discovered in any of the remaining languages (incorporated loans excepted) that the phonetic make-up of nouns plays a material role in their grammatical classification. And yet, since traces, no matter how limited or vague, are present in the strongly grammaticalized German system and are claimed to have been more prominent diachronically, one cannot rule out the possibility that phonetic criteria of classification were more significant at some earlier stages of these other languages but have been eroded and/or distorted to the point of non-recognition, as other more dominant classificatory elements evolved. Available information on the influence of phonological features on other diverse classifier systems (e. g., in Qafar, Hausa, Godie, Yimas and French; for detail cf. Corbett, 1991, pp. 51-62) at least permit the generalization that the evolutionary course of languages at certain stages of grammaticalization may include, although in all likelihood not permanently, phonetic features as determinants of categorization.

Can a stronger case be made for a correlation between the morphology of basic level nouns reflecting perceptual attributes and the traditional classifier systems? Of course, this question does not apply to Vietnamese, an isolating language, and Jacalteco which does not possess any relevant morphology. Except for Dyirbal, for which no pertinent information was found, a particular kind of nominal morphology concerning the size of entities constitutes a powerful and rather curious means of classification. The morpho-

logical encoding of abnormal size, especially diminution, is highly conspicuous in at least three languages, viz. Ojibwa, German and Swahili. While Ojibwa utilizes special suffixes to indicate small size within the general framework of nouns classified as animate or inanimate, all diminutives in German are categorically classified as neuter and thus inanimate. Both large and small size are prominently expressed in Swahili morphology: A positive correlation exists between diminutives and 7/8 noun class membership while the notion of largeness is morphologically expressed through the 5/6 class. However, as could be shown in German and Swahili, the grammatical classes associated with the encoding of size cover an array of other nouns which have nothing to do with perceptual properties whatsoever. This, of course, can be attributed to the advanced grammaticalized status of both languages, as well as to the effects of language contact in the case of Swahili. More importantly, however, it could be demonstrated in both languages that the denotation of abnormal physical size has been widened and has come to include judgments as to the relative social and functional value of entities, thus according especially the diminutive special status in the linguistic classification scheme in these languages, as well as in others. For example, Ojibwa (other than animacy/inanimacy), as noted above, expresses only the diminutive and notions of pejoration through nominal affixes while all other classificatory morphemes have become an integral part of verbal morphology. The obviously privileged status of the diminutive raises the question of whether its prime purpose is the denotation of small physical size - although it probably was the original one - or the expression of societal or some other norms. There is support for the latter assumption. In a provocative discussion of the role of the diminutive in diverse languages, in-

cluding Ojibwa, Jurafsky (1996) arrives at the conclusion that it is most likely a universal vehicle of realizing certain mechanisms of semantic change resulting, for example, in the denotation of social power. Analogous to Lakoff (1987), Jurafsky views the diminutive as a *radial* category which has the "ability to represent multiple mechanisms for relating senses in a polysemous morpheme" (Jurafsky, 1996, p. 544) and traces the development of the diminutive from its assumed central sense 'child' to its synchronic manifestations of denoting specialized semantic and pragmatic features (cf. the development of the Swahili diminutive in section 2.4.4). In all, however, except for the prominent exploitation of the diminutive for the denotation of size in all its related senses, the correlation between nominal morphology and Gestalt classification is at best opaque.

In spite of extremely scanty evidence in some languages of the sample (e. g., cf. Dyirbal, section 4.4.2), the best correlation between classifiers and percepts in the corpus can be claimed to be semantic. This relationship holds most of all for Vietnamese (cf. section 3.3.2) and Jacaltec (cf. section 6.3.2) and is so obvious that it needs no further elaboration here. Of greater interest are vestiges of a once more basic relationship between physical attributes and noun classes in German and more notably in Swahili. Thus, German nominals denoting conspicuous extendedness and/or pointedness, for example, tend to be coded masculine. Links between certain Swahili noun classes and the size, shape, and substance of entities have been suggested on diachronic grounds and are supported by some synchronic data based on recent field work (cf. sections 2.3.2, 2.3.3, 2.4). Although the encoding of Gestalt properties in the Ojibwa verb complex is well established and appears unquestionable (cf. section 5.2.2), a thorough examination of the semantics of the

verbal complex needs to be undertaken before more definitive statements can be made.

In summary, the correlation between the encoding of Gestalt properties and the traditionally recognized grammatical systems most clearly holds for the least grammaticalized languages in the sample, i. e., Vietnamese and Jacaltec. The overt expression of physical attributes through traditional grammatical classifiers is opaque in the languages with a more highly grammaticalized system. Overall, the transparency of the physical aspects of entities seems to diminish steadily as languages move away from their semantic origin and their classificatory morphemes more prominently assume syntagmatic functions.

7.2.2 Reflection of animacy in classifier systems

The dominance of the grammatical marking of animacy in all languages of the study is indisputable. However, this multi-faceted principle encompasses aspects of physiology and psychology, as well as diverse dimensions of social interaction and philosophical orientation, and is, therefore, difficult to analyze. In order to facilitate the assessment of animacy in the classifier systems, the following review, which is limited to a few commonly acknowledged criteria, focuses first on its general presence in the six systems and the overall effects of grammaticalization on the encoding of animacy. Secondly, non-linguistic influences are incorporated into the explanatory framework. Finally, an attempt is made to arrive at an overarching motivation for animate coding which transcends all more specific criteria and, thus, can be understood as a more universally applicable reflection of the human condition.

7.2.2.1 General linguistic criteria of animate classification

The basic distinction between humans and animals in which humans rank higher in the animacy hierarchy customarily constitutes an initial cut in the animal world (e. g., cf. Comrie, 1989, p. 185). This distinction, however, is only supported by the Vietnamese and the Jacaltec data; i. e., both languages utilize a separate detailed classifier set for prototypical humans and just one general classifier for prototypical animals. In contrast, no overall classificatory division between humans and animals exists in German, Swahili, Dyrbal, and Ojibwa. Since the latter systems are more highly grammaticalized than the former, it can be suggested that in the process of grammaticalization the difference between humans and animals is essentially neutralized as semantic selection restrictions are loosened. In other words, the scope of classifiers is much narrower in less grammaticalized languages and in some cases limited to a one-to-one correspondence (as in the isolated 'dog' classifier in Jacaltec, e. g.) than in more highly grammaticalized systems in which the scope of classificatory elements encompasses nouns of vast, heterogeneous semantic content. In sum, only the general principle of animacy can be claimed to be systematically encoded cross-linguistically.

As mentioned frequently throughout the paper, the assumption that the linguistic categorization of the animate domain is related to the biological sex of living organisms - with humans at the center of attention - has given rise to endless speculations ranging from the conceivable to the absurd and has shown no sign of losing ground as a major controversy until this day. Quite to the contrary. The linguistic expression of the biological sex of humans has become a major aspect of the modern "battle of the sexes". Unfor-

tunately, the relevant data in the paper do not substantially clarify the issue, but they do help to establish certain preferences.

What are the facts? Completely separate sets of sex-related classifiers for humans only are found in Vietnamese and Jacaltec; i. e., prototypical animals, regardless of biological sex, are summarily coded with one classifier. German classifiers for all animates mirror the male/female distinction but make absolutely no distinction between humans and non-humans. Dyirbal classifiers separate humans on the basis of biological sex and *may* do so for animals, but traditional speakers apparently make little use of this option. There is no marking of biological sex in Swahili and Ojibwa. When comparing the six systems in terms of stages of grammaticalization (cf. Table 36), the relative irrelevance of a biological male/female distinction in the classification of animals is obvious: Only German articles reflect the biological sex of animals. However, even in German the correlation between natural gender and grammatical coding might turn out to be superficial if the earlier discussed theories regarding the rise of these articles are further validated. An additional factor casting doubt on the "sex-determining" role of articles concerns the special morphological marking which in many cases is required to express feminine gender for both humans and animals (e. g., *die Lehrerin* 'female teacher'; *die Löwin* 'female lion'). And yet, in contrast to the apparent irrelevance of the grammatical coding of animals on the basis of biological sex, Table 36 indicates a peculiar preference for the sex-related coding of humans. If one adds the argument that the biological non-differentiation in Swahili might well be the outcome of a conglomeration of language-internal and language-external pressures which has not been untangled to date and that the Ojibwa's lin-

guistic indifference to biological sex just might be related to their all-consuming preoccupation with the powers of their "peopled universe", it remains a distinct possibility that a sex-based classification of the human domain, at least in part, was once motivated by biological factors.

In the context of biological sex differentiation in linguistic patterns, the notion of *markedness* needs to be at least briefly addressed because it has perhaps generated more controversy and "proposals for language engineering than any other" (Alpher, 1987, p. 169). Feminist linguistic scholarship, in particular, has been concerned with the recurring preference, particularly in pronominal classificatory systems to express reference to an individual or to groups of individuals with the masculine form (e. g., the so-called generic *he* in English) unless they consist only of females. This preference for generic masculine marking makes feminine coding the *marked* construction and has frequently been interpreted as evidence of linguistic gender stereotyping (cf. Poynton, 1985, and Cameron, 1985, among many others). In the language sample, biological gender-markedness in the categorization of the human domain can most clearly be claimed to be present in Vietnamese, Jacaltec, German, and possibly Dyirbal, although Dixon (according to information received by Corbett, 1991, p. 223) has apparently concluded that neither the male (class I) nor the female (class II) "gender" in Dyirbal are marked categories. Clearly, as noted above, no claims of markedness can be made with respect to Swahili and Ojibwa. Although some of the data in the study seem to support the notion of markedness and make it difficult to reject the impact of markedness on human categorization, cross-linguistically there are too many counterexamples demanding caution. For example,

Alpher (1987, pp. 173-182) cites several Australian languages which treat *feminine* as the unmarked gender while in others gender marking is ambivalent or seemingly irrelevant. Non-Australian languages in which feminine is the unmarked gender include, for example, the Iroquoian tongues of North America, Lak, a Caucasian language, Maasai (Nilotic), Dama (Khoisan), Goajiro (Arawaken) and others (Corbett, 1991, pp. 219-223). In view of the conflicting evidence any definite judgments seem premature because the "establishment of connections of grammar to attitude requires fine-grained contemporary anthropological field study of a type not readily apparent in the literature on the societies in question" (Alpher, 1987, p. 182). Ezzo (1988), who examined the status of women in several Indian communities (including Iroquois) in the Northeastern part of the Americas, comes to the same conclusion and points out that much more work is required before a more accurate historical account of the functioning of these societies - and its impact on language - can be given.

In sum, until more concrete information becomes available, it seems prudent to consider the cross-linguistic categorization of humans on the basis of natural gender with a marked preference for masculine or feminine an open question. Table 36 summarizes the encoding of *general principles of animacy* in the grammar of the language sample. A more detailed analysis of grammatical marking within the *human* domain is provided in Table 37.

7.2.2.2 Non-linguistic criteria of human classification

The role of social aspects (status, age, kinship relations, etc.) in linguistic categorization has been a recurring theme in the study and in all probability accounts for the privi-

leged status of human categorization over that of nonhuman animates. The overtness of marking again varies in accordance with the degree of grammaticalization (cf. Table 37). To recast briefly, the human classifiers in Vietnamese overtly express such an incredibly elaborate, finely tuned network of social interaction in the "social universe" of the Vietnamese speakers that they appropriately could be referred to as 'social' classifiers. Although considerably more limited in scope, Jacaltec human classifiers depict a strictly hierarchical organization of the immediate and extended family. In German and Swahili a subtle correlation between the socially governed categorization of humans and gender

Table 36

Evidence of grammatical coding of prototypical animacy

Criterion		weakly grammaticalized		more strongly grammaticalized			
		Vietnamese	Jacaltec	Dyirbal	Ojibwa	Swahili	German
Human		extensive	extensive	yes	yes	yes	yes
Animal		yes	yes	yes	yes	yes	yes
Human/animal distinction		yes	yes	no	no	no	no
Bio-logical sex	human	yes	yes	yes	no	no	yes
	animal	no	no	no*	no	no	yes
Semantic selection restrictions		yes	yes	some	no	no(?)	no

*Specification of biological gender is optional.

assignment has been offered, but the most unusual strategies in expressing social norms, linguistically as well as behaviorally, are exhibited by Ojibwa and Dyirbal. As amply illustrated previously, the pervasive notion of respect still monopolizes the Ojibwa's choice in cases of purely subjective animate or inanimate classification. Even more fascinating is the Dyirbal system, which is characterized by its strict adherence to the identification of nominal class membership by means of one of the four noun class markers. In fact, the near absence of recategorization of entities in Dyirbal for the expression of special denotations, such as pejoration, is even more striking because speakers could have elected this option. The fact that this was almost never the case is interpreted here as the result of the traditional utilization of two languages, viz. the everyday and the so-called "mother-in-law" language. Apparently, it was the prime purpose of the latter to specify and regulate the rules of appropriate social behavior which, if persistently violated, called for extreme punitive measures.

In all, the power of social dimensions is amply substantiated by human ingenuity in devising whatever alternate means of socially motivated categorization of the human domain is necessary to compensate for the inflexibility of grammatically constrained classification systems.

The most significant conclusion that can be drawn from the above summary not only substantiates but also underscores the intuitive observations made throughout the study: The principle of animacy plays the most prominent role in the classificatory systems examined and is presumed to be the major *Leitmotiv* of categorization; i. e., it is not only resilient, e. g., in the pronominal system of English, and enduring, but also recurring (cf.

trends in Dyirbal and modern Swahili).

Fortunately, claiming animacy as the most basic means of dividing the nominal universe meets with little or no controversy because linguists generally concede that

Table 37

Reflection of selected parameters in human categorization

Criterion	weakly grammaticalized		more strongly grammaticalized			
	Vietnamese	Jacaltec	Dyirbal	Ojibwa	Swahili	German
Age	yes	yes	no/yes*	yes	some	yes
Kinship	yes	yes	no/yes*	no(?)	some	yes
Social norms	yes	yes	no/yes*	yes	yes	yes

*Usage of alternate language and/or special lexical items

animacy is most likely encoded in all of the world's languages, either overtly or covertly, both in the lexicon and at least to some extent in grammatical classifier systems or alternate devices. And yet, the data suggest that matters are much more complicated. Although many 'aberrant' cases of human classification can be explained on the basis of purely grammatical and/or social criteria, there remain too many irregularities in the overall classification of entities. For example, these criteria alone simply have insufficient explanatory power for the grammatical animacy of 'stone' and 'net' in Ojibwa, of some trees in Dyirbal and of 'postage stamp' in Vietnamese. Some other, more compre-

hensively universal principle is required to account better for humans' interpretation of animacy. Although existential significance and cultural value of some physical objects have repeatedly been suggested as critically important for their inclusion in the animate domain, additional, intensely complex principles reaching into the depth of the human psyche seem to be at work. At various points in the paper, these principles have been linked to the dimension of *power*, both in its physical and intangible sense, which is closely associated with the dimension of *fear*. The grammatical coding of affective terms in German, for example, which has been explained in terms of power relations between individuals and their perception of the external world, points at hidden psychological areas of human beings which seem well worth further cross-linguistic investigation.

Nearly all individual language data contain examples of unusually coded nominals which more than suggest that the once prevailing belief system of a speech community might provide the most plausible key to an understanding of many "non-sensible" classifications. In such ancient communities, powerful entities, existing or imagined, which have the ability, real or perceived, to harm humans, are grammatically encoded as animate with extraordinary regularity. The fear of magical entities and reverence to spiritual, god-like powers culminates in the Ojibwa' interpretation of the universe in which the mere *potential* of having influence over one's destiny has led the Ojibwa to consider all phenomena as possible power holders and to make them subject to animate coding.

Since evidence of the influence of entities on linguistic categorization in terms of physical, social and spiritual power/potency has been described across languages (cf. Corbett, 1991, *passim*, and Frawley, 1992, pp. 98-99, e. g.), it is reasonable to assume

that the principle has universal validity.

7.3 Language contact

The lack of relevant data has hampered, if not rendered impossible, the judgment of various criteria, especially in Dyrbal and Ojibwa. However, the traditional Swahili system of noun classification has consistently emerged as one of the most baffling and "arbitrary" in spite of a longstanding interest in the language and an abundance of linguistic analyses of Swahili and other Bantu languages. Although the data contain sufficient evidence of the semantic foundation of the nominal lexicon, no unifying semantic concept supporting a relation between individual words and the traditional noun classes has been found. Reviewing known diachronic facts of vocabulary growth and supplementing them with present-day trends in the expansion of the Swahili lexicon, the only plausible explanation seems to be the inadequacy of the classificatory label "noun class". Established in the 19th century and, with little modification, adopted by subsequent generations of linguists, the categorization of Swahili nouns on the basis of morphology appears to ignore more recent findings with respect to the impact of *language contact*. Although all languages in the sample show ample evidence of language interaction which has influenced their nominal classification systems, foreign infiltration of the nominal lexicon is - by far - the most conspicuous in Swahili. Although various donor languages, notably Arabic, have already been identified in the appropriate sections of the paper (e. g., cf. section 2.4.3), the immense scope of foreign borrowings needs to be specified more succinctly to appreciate its magnitude more fully. First, throughout the history of Swahili, extensive migration brought the language into contact with other Bantu and genetically

unrelated African languages. Close social ties between Swahili speakers and speakers of these other languages (e. g., intermarriage) left their imprint on the language. Secondly, once Swahili speakers had settled in the eastern regions of Africa, the language developed into a trade language and was used among speakers of many different African languages. Furthermore, since ca. 800 AD (Chuwa, 1988, p. 163) extensive world-wide trade contacts with the Eastern coast of Africa introduced lexemes into the Swahili lexicon from languages which could hardly be more diverse. According to Geider's (1995, pp. 328-331) survey, the following languages have contributed to the Swahili *noun* inventory: Arabic (ca. 48%, according to Zawawi, 1979), Persian, Indian (Hindustani and Gujarati), Turkish, Chinese, Malay, Madegassian, English, Portuguese, French, German and, indirectly via other languages, Mongolian, Japanese, an unidentified Altaic language, unspecified Latin American languages, Latin, and Greek. Although the contact with some of these languages was most likely very superficial, traces of each language have been attested in modern Swahili (for detail, cf. Chuwa, 1988, and Geider, 1995). Due to the introduction of modern technology, the need for the incorporation of new expressions, especially from English, continues to this day and poses many problems (for an example, cf. Samsom, 1991).

Even without adding current attempts to incorporate scientific vocabulary in the Swahili lexicon, the historical evidence alone should suffice to raise serious questions about a nominal classification system which does not sufficiently consider natural language change and the limits of languages to cope with the intrusion of foreign elements. In other words, the present-day classificatory labels were applied *after* the semantic base of the

Swahili noun inventory had been distorted in two ways, viz. (1) by natural processes of attrition and (2) by the massive addition of foreign terms whose incorporation was to a large extent accomplished by *formal* criteria.

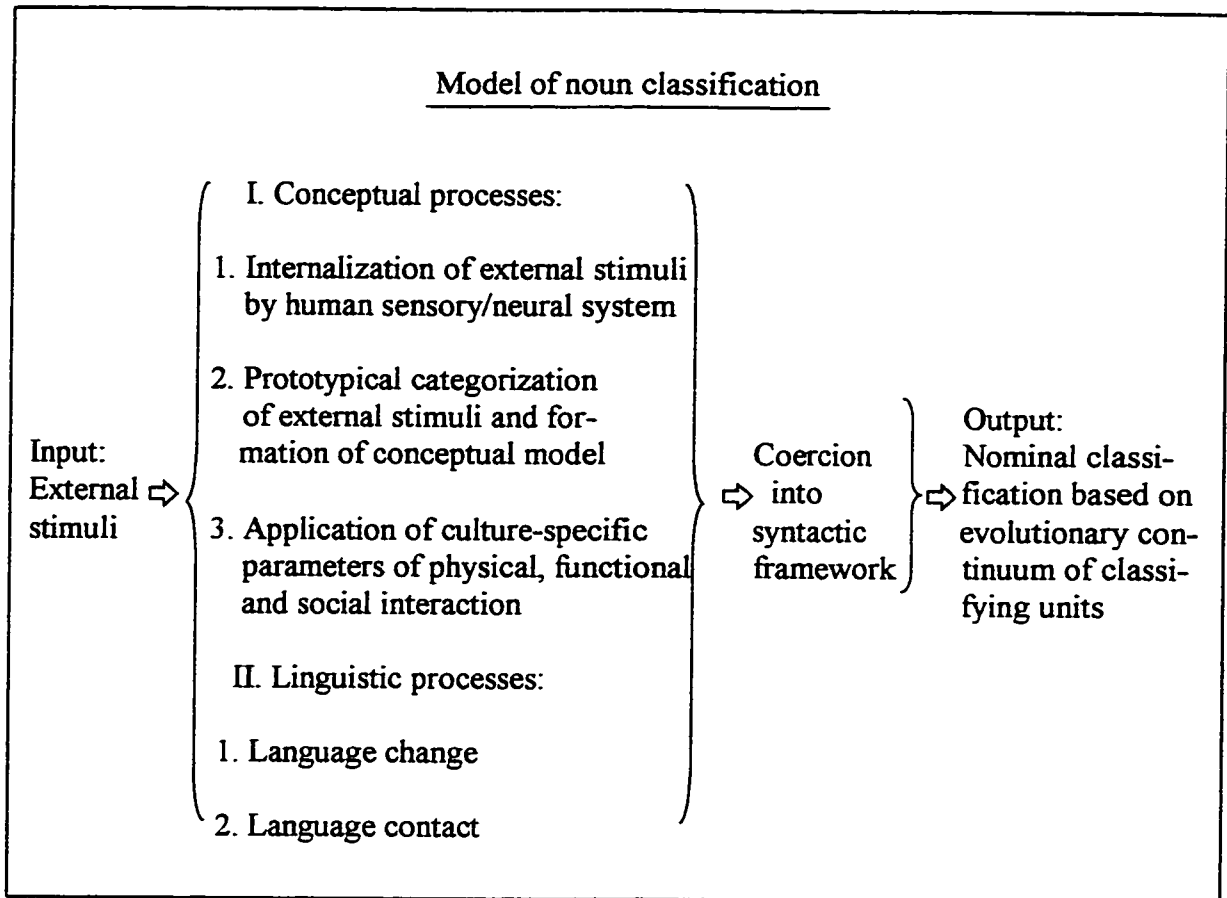
In essence, the "chaotic" Swahili classification system is interpreted here primarily as the product of extensive language contact and *not* as an example of arbitrariness in linguistic categorization. Since the tremendous impact of foreign borrowings on Dyirbal is unquestionable and might well have been more profound on other languages in the corpus than has been discovered to date, the criterion of language contact is included as a material factor in the following model of nominal classification.

7.4 Model of nominal classification

The model of noun classification suggested by generalizations made in the paper is given in Table 38. In extremely simplified form, it is designed to capture the most essential steps connecting the perception of the outer world (input) with the eventual creation of linguistic signs (output). It is believed to be valid beyond the six languages considered in this study and stresses the non-arbitrary nature of human language production in general.

The first part of the model deals with mediating forces; i. e., the formation of a linguistic sign initially involves two fundamental *conceptual* processes: (1) the intake of external stimuli through the human sensory apparatus, (2) and the conceptualization of these external stimuli. The underlying principles for these two processes seem to be constant for speakers of all languages in the corpus and are generally assumed to be universal.

Table 38



Culture-specific criteria, which are often intricately intertwined, constitute the third significant parameter of conceptualization and subsequent lexicalization processes. They are subject to variation and ongoing modification which mirror the world view, the societal complexity, the physical environment, the contact with other languages, etc., of individual speech communities. Following Denny (1976, p. 125), these forces are broadly defined as *physical interaction*, *functional interaction*, and *social interaction*. The applicability of these criteria has been demonstrated in the lexical and grammatical encoding of Gestalt properties and in the linguistic treatment of the animate domain. In the classifi-

cation systems examined, the dimensions of power and potency in their broadest sense surfaced as likely universally valid parameters of categorization in that they not only supersede culturally determined differences but also manifest themselves in unexpected ways in the otherwise opaque systems of the language sample.

The second major portion of the model indicates two decisive *linguistic* processes affecting language: (1) the ongoing changes which languages undergo by internal evolutionary processes of language change and (2) the impact of language contact on the developmental path of a given language. The effect of language change emphasizes the fact that lexical units which are singled out as classificatory devices become an integral part of the syntactic framework where they are subject to language-specific grammatical constraints which are the ultimate determinants of their syntactic role.

The final part of the model proposes to base the classification of nominals on an evolutionary continuum of classifying elements. This aspect is further pursued in section 7.6.

7.5 Lexical vs. grammatical classification systems

At the lexical level, a reasonably solid case can be made for the fundamental non-arbitrariness of categorization in human language. Thus, as noted previously, in the taxonomic arrangement of lexicalized concepts, there is a general progression from words denoting concrete, perceptually salient and functionally meaningful entities (basic categories) to terms denoting more abstract notions (superordinate categories). This generalizing process in which distinguishing features of expressions are steadily reduced constitutes the initial steps of grammaticalization, which eventually lead to the crystalli-

zation of terms serving as classifying units for the nominal lexicon. The claim that these units or grammatical classifiers have their origin in concrete terms is amply supported by the Vietnamese and Jacaltec data, the least grammaticalized and, therefore, semantically most transparent systems. In both languages, the development from lexical item to classifier is similar in that it proceeds from basic lexical item > superordinate lexical item > classifier. In short, because the data reveal that there is a clear correlation between the lexical and grammatical systems of categorization, the term "classifier language" seems appropriate.

Although the traditional classificatory labels of the remaining languages capture some significant generalizations, they are either insufficiently or not at all linked to the organization of the lexicon: While tendencies in prevalent grammatical marking of basic and superordinate terms and the tripartite grammatical division of the nominal lexicon have been established in German (cf. section 1.3.1), and some vague, tentative links between lexical categorization and certain noun classes have been discovered in Swahili (cf. section 2.3.2), overall the correlation between the organization of the lexicon and the traditional grammatical labels utilized in the typological characterization of these two languages, as well as of Dyrbal and Ojibwa, is not satisfactory, as more fully explained below.

German, customarily labeled a "gender language", has been shown to have a complex classification system which comprises at least two prominent grammatical classificatory devices, viz. articles (genders) and nominal affixes. Many of these nominal affixes classify nouns more categorically than the articles (cf. section 1.2.1). In other words, articles

exhibit many inconsistencies and variation in their classificatory behavior and, furthermore, carry non-classificatory loads. For example, they have retained a substantial portion of their original function as deictic elements. In contrast, numerous affixes (e. g., *-chen, -lein, -ung, -heit/keit*), whose evolution from *lexical* item has been illustrated in the case of *-heit/keit* (cf. section 1.6), classify nouns in modern German *without exceptions*. Therefore, although the partly classificatory function of articles in modern German cannot be disputed, to make them the *sole* basis of a typological label for the entire nominal lexicon is inadequate.

Similar objections can be raised with respect to the label "noun class language" traditionally used to typologize Swahili. Not only is the term "noun class" utterly non-descriptive, i. e., all languages can be claimed to have noun classes, it ignores several important intra-linguistic and inter-linguistic factors. First, because the traditional noun classes of Swahili do not have categorical status, temporary and/or permanent recategorization is a widely used technique for the expression of special connotations (for example, cf. the multiple role of the 7/8 class) and, in general, for a change in meaning. Furthermore, noun class membership, with the exception of diminutives and augmentatives, is categorically overridden if the referent can be remotely associated with the human domain (cf. sections 2.1 and 2.5). Secondly, the haphazard noun class allocation of loans (cf. section 2.4.3) reveals the inherent weakness of the prefixes as classificatory tools. Finally, the label "noun class" completely neglects the origin and diachronic development of the prefixes which form the basis of the traditional classification system; i. e., it disregards the classificatory potential of the lexical expressions from which these prefixes most

likely have evolved (cf. section 2.4).²⁵

Although the relevant literature indicates much uncertainty with respect to the classificatory labels "noun class" or "gender-like system" for Dyirbal and "incorporating language" for Ojibwa, few attempts have been made to consider alternate typologies. Since the data suggest that the semantics of the verbal paradigm of these languages (not investigated here) play a significant role in classification, its incorporation could perhaps provide a more solid basis of classification. For example, Dixon (1972, 1980) repeatedly emphasizes the fact that Dyirbal verbs are more elaborate than their nominal counterparts. The verbs also seem to contain classificatory elements akin to the "action classifiers" which Berlin (1968) isolated for Tzeltal. In Ojibwa, the tight classificatory relationship between the verbal and nominal paradigm appears to be dominated by notions of *agency*; i. e., the greater the agentive potential of a noun and a verb, the greater is the likelihood for the grammatical *animate* designation of both.

It is also obvious that none of the traditional labels in the sample sufficiently takes into consideration the effects of grammaticalization which obscure the fact that classifying morphemes in more highly grammaticalized systems have their origin in the lexicon. For example, it has been found that even semantically opaque *genders* can be traced back to their nominal origin. Claudi (1985, pp. 127-136), for example, shows this to be the case in Zande, an African language, some of whose *gender pronouns* are derived from nouns denoting *animal*, *meat*, *thing*, and *person*.

Finally, none of the traditional labels reflect the impact of social and other pragmatic parameters which were found to be pervasive and powerful classification criteria in all

the languages of the sample and can be claimed to have universal validity.

In sum, the traditional labels are either too narrow or too broad and, therefore, with the possible exception of the term *classifier language*, do not do justice to the languages examined.

7.6 Alternate approach

Throughout the paper, it has been observed that the lexicon constitutes the ultimate source of classificatory units. Although it is far from clear which lexical concepts give rise to the particular types of grammatical concepts recruited to serve as classifying elements (cf. Heine et al., 1991, pp. 38-39), it is posited that a lexically based approach to linguistic categorization provides the nucleus for more adequate classificatory labels. In other words, regardless of their specific source, all classificatory elements are derived from lexical elements and share two critical features: (1) They constitute abstractions, the degree of which is dependent upon the overall grammaticalization stage of a language, and (2) they fulfill a syntagmatic function, the degree of which is again determined by the evolutionary stage of a particular language. Therefore, adopting in part Dixon's (1986) prototypical distinction between lexico-syntactic and grammatical classifier systems, the following continuum of a prototypical typology of linguistic categorization is proposed:

Stage 1: Linguistic categorization begins at the lexical level.

Stage 2: As a language evolves, lexical items are selected to serve as classifying units and simultaneously begin to fulfill syntactic functions.

Stage 3: Ultimately, the syntactic function of these units becomes their dominant

and/or sole function.

This continuum can be represented in a very simple sketch. Although given in linear order, the development is best understood as a spiral, as proposed by Gabelentz (1891) who was one of the first influential scholars to argue that languages undergo continuous processes of evolution:

Immer gilt das Gleiche: die Entwicklungslinie krümmt sich zurück nach der Seite der Isolation, nicht in die alte Bahn, sondern in eine annähernd parallele. Darum vergleiche ich sie der Spirale (Gabelentz, 1891, p. 251).
(It is always the same: The developmental line curves back toward isolation, not exactly to the old path but to a nearly parallel one. Therefore, I compare it to a spirale.)

lexical systems →lexico-syntactic systems →syntactic systems

The proposed approach has several merits:

First, by including the lexicon, the approach accounts for the more lexically oriented systems of such classifier languages as Vietnamese, Japanese, Chinese, etc. It accounts for grammatically more constrained but lexically transparent systems like Jacaltec, and it accounts for all highly syntacticized, lexically opaque systems which in this study are represented by German, Swahili, Dyirbal, and Ojibwa.

Secondly, the approach avoids the pitfall of selecting transitory manifestations of categorization as in the case of the recently evolved German articles. If these articles have, indeed, developed out of the necessity to ensure the functional adequacy of entire sentences, their classificatory role is at best secondary, a fact which would explain the

evolution of an alternate, morphological method of classification. Swahili noun prefixes can be interpreted as vestiges of a much earlier evolutionary stage in which they may well have had significant classificatory power. However, as has been shown, the integrity of these prefixes as classification devices has been thoroughly compromised by the developmental path of the language. Furthermore, since Swahili seems to be moving toward a bipartite distinction between animate and inanimate entities (cf. section 2.2.5) which is expressed by syntactic, i. e., concordial relations, class prefixes, on the whole, are increasingly becoming irrelevant in classification because they fail to determine syntactic concord. Ojibwa (and possibly Dyirbal) possesses a classificatory system which actively and dominantly involves the two major syntactic units of any construction, its subject and its predicate. In short, if specific details of synchronic forms, e. g., morphological similarities or a loose relationship between classifiers and the biological sex of animate entities, are utilized as typological labels for languages as a whole, they necessarily will fail to capture the interdependence and interplay of *all* units in a construction. A classification based on lexical/syntactic parameters solves this problem.

Thirdly, a lexical/syntactic approach is inherently flexible and permits the relabeling of classifying systems as they move along the continuum. It also allows adjustments in line with new discoveries made in linguistic and related research. It has been demonstrated that current labels, which are the product of a linguistically less sophisticated era, have in part become less useful in the light of recent advances in linguistics and other fields. Furthermore, even classifying devices which currently are reasonably descriptive (the specific Vietnamese classifiers, e. g.) are subject to continuous language-internal

changes as they gradually shift toward grammatical status. While they might be retained as syntactic indicators once this status is attained, they also might eventually be lost (like the Indo-Germanic nominal affixes, for example) and replaced by similar and/or *different* types of classificatory units which have ascended from the lexical base.

Aside from on-going internal developments in languages, the need for a flexible typological approach is evident because of the rapid changes which some languages undergo due to external pressures. The global impact of language contact, with English surfacing as one major means of communication, cannot be sufficiently emphasized. For example, the intrusion of English elements into modern German has reached such proportions that some speakers have coined a new name for the language: Neudeutsch 'new German' (personal observation).

To summarize, the data clearly suggest that modifications in typological labeling which reflect language change *per se*, as well as all other pragmatic criteria which have bearing on human language production, are indicated. A classification typology based on a lexical/syntactic continuum of linguistic development, in addition accounting for a wider range of data, would greatly diminish the import of claims that many classification systems are largely arbitrary.

8. Conclusion

In spite of the extremely small size of the language sample, many highly tentative conclusions, speculations (mainly caused by the unexpected gaps in the availability or plain lack of information on some languages) and many unanswered questions, several generalizations are suggested by the findings in this study.

First and foremost, language must be understood and interpreted as an expression of the *totality* of human experience which comprises all language-internal and language-external influences that have been shown to have bearing on the formulation of linguistic signs. Many of these influences are in need of further quantitative and qualitative analysis. For example, the discovery of a likely connection between nominal classification and affect in German points at potentially rich and revealing areas of language that might well be worth pursuing cross-linguistically because it promises truly novel insights into previously unexpected psychological dimensions acting upon language production.

Secondly, the complexity of language is extraordinary. Although a reasonable case could be made for the non-arbitrariness of nominal classification - at least at the lexical level - the data utilized as substantiation cover only a small part of the nominal inventory; i. e., the examination focused on concrete, tangible objects and excluded such abstract notions as *love, hate, happiness, liberty*, and the like. These lexical areas need to be explored and explained. Furthermore, much more has to be learned about the interplay between the nominal paradigm and all other significant constituents of linguistic structures, as illustrated in Ojibwa, for example. In short, a tremendous amount of work needs to be done with respect to lexical domains and their manifestations in the overall grammar of a

language.

Thirdly, the complex, all-embracing nature of language brings to the fore the necessity of an interdisciplinary approach to language study. As valuable as segmented analyses of individual linguistic aspects are in their own right *and* as building blocks of broader linguistic descriptions, linguists alone cannot do all the tasks that lie ahead. Rather, the findings of the theoretical, historical, social and psychological branches of linguistics must be integrated with the empirical discoveries and theoretical constructs of such disciplines as anthropology, sociology and psychology in order to account more adequately for linguistic phenomena.

Finally, everyone engaged in language study must remain cognizant of the fact that traditional assessments of linguistic phenomena might become inadequate as descriptive tools, as more knowledge is added to the understanding of the production and function of language. As difficult as it appears to be, there are times when laudable accomplishments of the past must be reconsidered and possibly abandoned. Furthermore, the findings of this study serve as a reminder that only a co-operative, flexible and open-minded approach to linguistic analysis may eventually lead to the establishment of a more comprehensive universal model of language.

Notes:

¹ A substantial portion of the Vietnamese data was elicited from three native speakers who have had no special training in linguistics and differ in age and background. The first informant, the oldest of the three, received his formal education in Vietnam and spent several years in France before becoming an American resident. The second informant, a highly educated woman in her early 40s, holds a degree from a Vietnamese college, has attended college in the United States, and presently works as a teacher in the American public school system. The third informant, approximately 20 years old, came to the United States when she was eleven years old. She attended high school and is currently a college student. Although the adherence to "traditional Vietnamese ways" was obviously important to all three informants, the difference in age was of particular interest because it clearly reflected the diminishing role of *special* classifiers in everyday usage. Information on German was informally verified by frequent contact with relatives and friends.

² Other morphological rules include the suffixes *-ion*, *-tāt*, and *-kunft* which assign feminine gender, and *-nis*, *-sal* and *-tum* which generate varying genders.

³ The study is based on approximately 1466 monosyllabic nouns whose gender is not determined by suffixes. German permits up to three initial consonants and a maximum of four consonants in final position.

⁴ Federal laws regulate the hunting season(s) for wild animals. They are strictly enforced to ensure the propagation of all indigenous species.

⁵ The choice of this terminology has met with considerable opposition. Both authors have acknowledged that these terms are not the most propitious but state that they are merely used as labels "because the semantic content of such dimensions underlying the lexicon must be technically describable, but may be ultimately unnamable" (Zubin and Köpcke, 1984, p. 51).

⁶ Abraham (1997) provides a detailed analysis of the structural distinction between the accusative and verbally governed genitive cases.

⁷ There appears to be tremendous variation in usage and/or choice of prefixes. According to Herms (1995, p. 81-87), some speakers use the additional infix *ji-* for diminutives (e. g., *karatasi* 'paper' > *kijikaratasi* 'small piece of paper'). The prefixes *ji-/ma-* are preferred in literary style (e. g., *jītabu* 'large book'). Swahili speakers whose native tongue is another Bantu language typically transfer the prefix *ka-* which denotes diminutives in their language into Swahili (*kameza* 'small table'). Other variations which result from phonological requirements and/or the need to avoid ambiguity are not included here but are also discussed by Herms (1995).

⁸ A second parameter for the distinction between 'tree' and 'plant', although not strictly

part of the topic of this paper, is also worth pointing out because it hints at the fluidity of lexical organization, in general: The life span of plants also determines their grouping under 'tree' or 'plant' (Heine and Legère, 1995, p. 27).

⁹ Augmentatives can be subjected to similar changes in concordial agreement patterns if emphasis is placed on the hugeness or uncouthness of the entity (Herms, 1986, p. 89).

¹⁰ Givón (1971, pp. 34-35, p. 42) presents a different scenario by arguing that the 9/10 class was at one point the only animate class and that the establishment of a separate "human" 1/2 class, into which human members of the 9/10 class were moved, occurred at a later stage. Either way, the weakening effect would have been the same.

¹¹ For an alternate view see Hao (1988).

¹² The notion of the inherent position which entities display in space might well have wider implications with respect to other classification systems, notably those without separate classifying morphemes (e. g., Ojibwa). Thus, Croft (1994, *passim*) argues for a functional connection between "spatial" *verbs*, e. g., verbs of position and motion, which are characteristic of animate entities and extended to inanimate objects.

¹³ The examples used here apply to Guwal, the "everyday language" and not to Dyalñuy, the "mother-in-law language", which in some areas has a marked preference for generic terms (for detail, cf. Dixon, 1972, pp. 303-305, and Dixon, 1980, pp. 61-62).

¹⁴ It is somewhat surprising that Dixon did not include the platypus in the "harmful" group of the *balan* class because *The World Book Dictionary* quotes *Scientific American* in which the male platypus is described as being "as venomous as a poisonous snake."

¹⁵ The Dyrbal case does not seem to be unique. In one theory, for example, it is argued that the contact and interaction of English and Scandinavian languages may have had profound influences on the structure of Old English in the sense that "Viking settlements in the Danelaw ... led to a process of pidginisation, with a concomitant loss of morphological structure and the development of a more analytic language" (Fischer, 1992, p. 207).

¹⁶ The ability to "travel", either bodily or spiritually, is often mentioned in stories, dreams and visions and associated with the powerful ability to be in two places simultaneously.

¹⁷ Mardirussian (1975) provides a general analysis of noun incorporation from a universal point of view.

¹⁸ According to Craig (1986b, pp. 258-260), Mayan languages often use "relational nouns" instead of invariable prepositions of which there are only a few. These relational

nouns are prefixed with ergative markers indicating the person of the peripheral noun phrase.

¹⁹ Craig views this part of the diagram as a possible flaw because it might be the result of western approaches to categorization.

²⁰ The special bond that holds between a man and a dog can be sensed in a Jacalteco story translated by Day (1976).

²¹ For a general discussion of this issue see esp. Breitborde (1975).

²² Vocative phrases which include a vocative particle (e. g., *mam* 'old kin male', *mi?* 'old kin female') are used at the beginning of a sentence, at the end or after a sentence adverbial. The choice of particle is determined by the age, sex and the kinship relation between speaker and addressee. While in certain speech situations the selection of a vocative is not influenced by social motivations of friendship, esteem, kinship, etc., in others, vocatives can be manipulated for the expression of positive or negative attitudes toward the addressee (cf. Breitborde, 1975, for further detail).

²³ Craig (1986b, p. 259) explains that certain nominal compounds consist of one noun indicating the shape of the object, followed by a second noun marking the substance of the object. For example, the compound *ñah ch'en* (cave) consists of *ñah* (house) and *ch'en* (rock). Thus, the second noun indicates the "substance" part of the whole expression.

²⁴ Reasons for the eventual prenominal placement of substance nouns recruited into the set of classifiers are given in Craig (1986b, pp. 258-259).

²⁵ It seems unfortunate that Zawawi's (1979) semantic interpretation of the Swahili nominal inventory in terms of *substance*, *size* and *number* (cf. section 2.3.1) has largely been ignored by the linguistic community because it constituted one of the few attempts to utilize a novel approach to the assessment of a persistent problem, viz. the "chaotic" Swahili noun class system.

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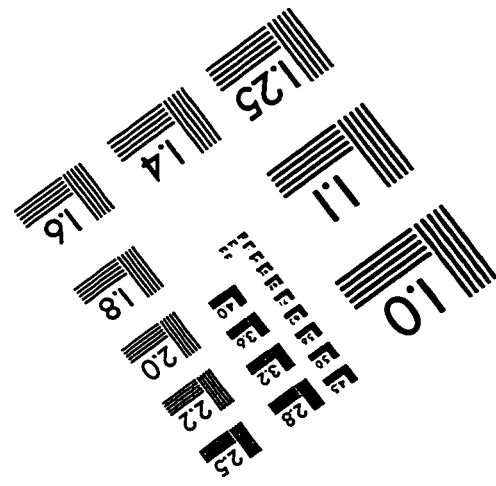
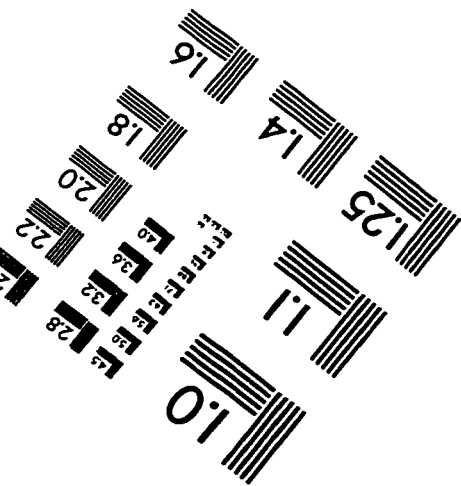
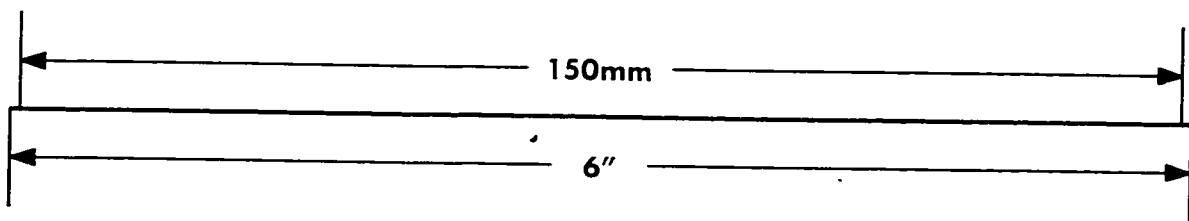
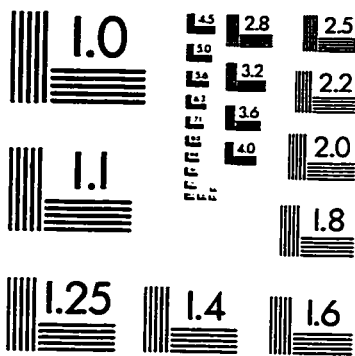
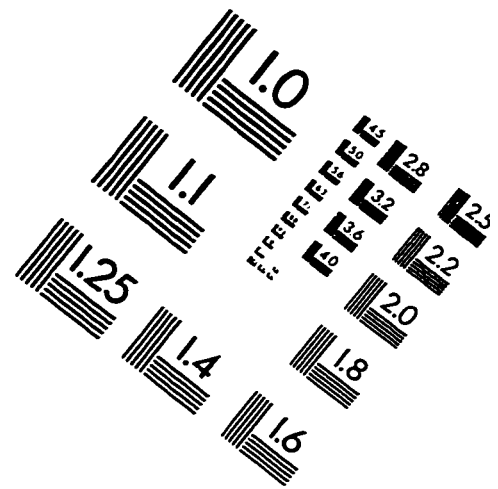
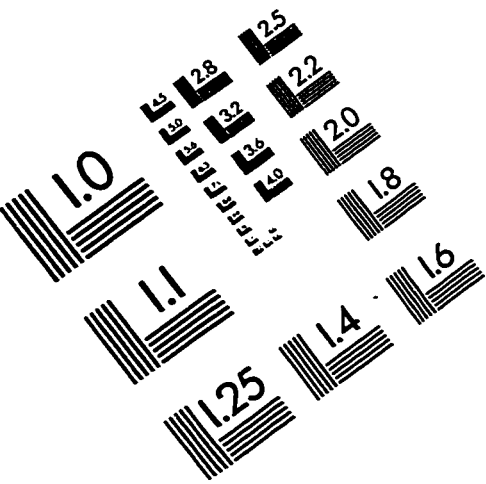
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