

CHAPTER I

What do we really know about nominal classification systems?

Gunter Senft

Max Planck Institute for Psycholinguistics, Nijmegen

I INTRODUCTION

The problem of 'classification' is a general problem of life. Biology has shown that classification abilities are necessary for the survival of every organism. Human beings classify consciously, unconsciously and even subconsciously in all situations. When we confront a scientific problem, we try to solve it by first classifying the various parts of the problem. Therefore, the history of all branches of science is also a history of how these sciences have classified their research subject. 'Classification' always implies 'selection', too, because, as Koestler (1978: 201) put it, our

minds would cease to function if we had to attend to each of the millions of stimuli which . . . constantly bombard our receptor organs . . . The nervous system and the brain itself function as a multilevelled hierarchy of filtering and classifying devices, which eliminate a large proportion of the input as irrelevant 'noise', and assemble the relevant information into coherent patterns before it is represented to consciousness.

If we want to communicate about this perceived, classified and filtered input, we have to classify once more: we have to transform this input into classes and categories provided by the systems that organize our communicative verbal and non-verbal faculties. With our systems of language and gesture we again classify and filter on various levels while communicating. Linguistics is the science that tries to analyse these processes of classification that are relevant for communication. Indeed, the languages of the world provide an enormous data pool for the analysis of this problem – and humankind has developed a number of different linguistic techniques to apprehend our world (see Senft 1996: ix–x).

In the last ten years I have been dealing with one of these techniques which the speakers of an Austronesian language have been developing as a means for their verbal communication, namely the system of 'classificatory particles' (Malinowski 1920) in the Kilivila language. This work is a contribution to the research on classifiers and classifier languages, and thus on the problem of nominal classification in linguistics.

As Royen (1929: 1) points out, the philosophic discussion of the question of nominal classification can be traced back to the Greek sophistic philosopher Protagoras (485–414 BC). Obviously, discussing the problem of 'category' and 'categorization' and especially the interdependences between category, categorization and classification on the one hand, and naming, language, thought, perception and culture on the other hand has a long tradition not only in philosophy (see e.g. Foucault 1966; Rosch 1978; Vollmer 1988a, b) but also in linguistics (see e.g. Herder 1770; Humboldt 1836; Schleiermacher 1838; and Whorf 1958). Even a brief glance over this literature and literature that deals especially with nominal classification² reveals that the basic problems continue to emerge in the discussion of this topic from the linguistic point of view.

This paper attempts to summarize and to highlight some of these problems and questions of nominal classification in language as they arise from the study of the rather complex system of classificatory particles in the Kilivila language. Therefore, it first of all points out basic problems and open questions of research on a so-called 'classifier language'. However, I also try to show here that most of these problems and open questions also hold for other techniques languages have been developing as their means for nominal classification.

2 THE PROBLEM OF NOMINAL CLASSIFICATION IN LANGUAGE

2.1 From the world to nouns and types of nominal classification

One of the basic questions in the study of language is how the perceived world is expressed and represented in, and through, language, how language refers to the perceived world, to its objects, things, and living beings. We do not only perceive the world, but we also develop concepts about what we perceive and create linguistic expressions that refer to and represent these concepts. These expressions refer – among other things – to actions, temporary states, things and objects, persons and other living beings.

A great many of these expressions are classified by linguists as nouns – and we all know that nouns (like verbs and adjectives) constitute an open word class. Moreover, if we keep in mind Greenberg's (1978: 78) claim that as 'soon as we wish to talk about an action as such, we nominalize it' we become aware (again) of the important role nouns play in our languages (at least with respect to their frequency).

As Talmy (1992: 131) points out, languages 'generally subcategorize nouns grammatically along certain semantic parameters, principally proper/common, count/mass, unitary/collective, and relative/absolute . . .'.³ These subcategorizations are classifications, of course. The question why most of these classifying systems apply just at the noun phrase rather than other syntactic constituents was answered by Greenberg (1978: 78) in a very convincing way: 'it is the noun par excellence which gives rise to classificational systems of syntactic relevance. It is not so much that the noun designates persisting entities as against actions or temporary states . . . It is that nouns are continuing discourse subjects and are therefore in constant need of referential devices of identification. As soon as we wish to talk about an action as such, we nominalize it; classification is a help in narrowing the range of possible identification.'

Languages have been developing a rather broad variety of these nominal classification systems. Thus, we find, for example, languages that classify their nouns according to kind and degree of possession (see e.g. Royen 1929: 250). Kilivila⁴ has a fourfold series of possessive pronouns, partly realized as free possessive-pronominal pronouns, partly realized as possessive-pronominal affixes. One of these series is only produced in a specific semantic context, referring to food only, the other three series are used to distinguish different degrees of possession; one series marks inalienable possession, two series mark alienable possession of inedible things (Senft 1986: 47–54).

Possession is just one basic semantic parameter on the basis of which languages – and their speakers, of course – have been grouping their nouns. However, before I discuss other parameters that lead to a grouping of nouns according to semantic domains, I first want to briefly describe the most distinctive formal devices or 'techniques' – as Seiler (see e.g. 1986) and others call them – that languages use as the mould for their respective nominal classification systems.⁵

Classificatory noun incorporation is a type of nominal classification that is found, for example, in Iroquoian languages (see e.g. Mithun 1986): in this system 'a taxonomically superordinate (generic) noun, e.g.

“vehicle”, is syntactically incorporated into the verb and cross-classifies a specific noun (“truck”, “bus”) which is syntactically governed by the verb’ (Zubin 1992: 41). This is illustrated in the following example from Cayuga (Mithun 1986: 388):

- (1) *Skitú ake-’treht-áe’*
 skidoo I-vehicle-have
 ‘I have a skidoo’

Classification by verb is another technique of nominal classification (Allan (1977: 287) refers to languages that use this technique as ‘predicative classifier languages’). Athabaskan languages, for example, ‘have classificatory verbs, whose roots provide a semantically transparent classification of the intransitive subject or transitive object’ (Zubin 1992: 41). Seiler, following Barron’s analysis of Hoijer’s description for Apachean languages, gives the following three criteria for the classification of nouns by verbs:

1. It must be possible to correlate the same noun classes with at least two predications.
2. It must be possible to correlate the different noun classes with one and the same predication as materialized in at least two different verb forms.
3. The classification of nouns is brought about by the verb forms only. . . .
 By predication is meant an invariant verbal notion . . . (Seiler 1986: 78)

Barron (1982: 137) and Allan (1977: 287) present the following example for the classification of nouns by verbs in Athapaskan:

- (2) a. *béésò sì-ʔá*
 money perfect-lie (of round entity)
 ‘A coin is lying (there).’
 b. *béésò sì-níl*
 money perfect-lie (of collection)
 ‘Some money (small change) is lying (there).’
 c. *béésò sì-X-tsòòz*
 money perfect-lie (of flat flexible entity)
 ‘A note (bill) is lying (there).’

Numeral classification is a type of nominal classification which Allan considers to be the paradigm case of what he calls ‘classifier languages’ (Allan 1977: 286). Classifier languages have a system, which can be (at least in principle) an open set, of ‘classifiers’ and they follow the – almost – universal principle which runs: ‘A classifier concatenates with a quantifier, locative, demonstrative or predicate to form a nexus that cannot be interrupted by the noun which it classifies’ (Allan 1977: 288;

but see Adams 1989: 12, 24). Languages with numeral classifiers differ from other languages primarily with respect to the following characteristic feature: in counting inanimate as well as animate referents the numerals (obligatorily) concatenate with a certain morpheme, which is the so-called 'classifier'. This morpheme classifies and quantifies the respective nominal referent according to semantic criteria.⁶ In the numeral classifier language Kilivila we find phrases like the following:

- (3) *yuletalaga makavena dabunaga*
yule-tala-ga *ma-kwe-na*
 CLASSIFIER.bundle.of.four-one-Emphasis Dem-CLASSIFIER.shell-Dem
da-buna-ga
 Dual.incl.-cowrie-Emphasis
 'indeed one bundle of four of these cowrie shells belonging to the two of us'
 (Senft 1996: 72)

This is a phrase with double classification. The noun *buna* is first classified with the classifier *yule* that is prefixed to the numeral stem *-tala*; it is also classified with the classifier *kwe* that is infixes in the morphological frame *ma- -na* of the demonstrative pronoun.

Noun class systems of nominal classification 'are characterized by agreement with constituents outside the NP . . . ; by a higher degree of grammaticalization, evident in a closed system of a small number of classes; and by a lesser degree of semantic transparency' (Zubin 1992: 42). Noun classes in noun class systems form a 'grammatical category'⁷ (Dixon 1986: 105). Demuth (this volume) presents the following example for a noun class system in the Bantu language Sesotho:

- (4) *Ba-shányana bá-ne bá-fimáni*
 2-boys 2-Dem 2.Subject agreement.marker-found
di-perekisi tsé-monáte
 10-peaches 10-good
 'Those boys found some tasty peaches.'

Here the demonstrative modifying the class 2 subject noun *ba-shányana* is the class 2 demonstrative *bá-ne*. The subject marker on the verb then agrees with this nominal subject. The nominal modifier for the class 10 noun *di-perekisi* takes a class 10 relative prefix *tsé-monáte*.

Gender systems are defined by Corbett (1991: 4-5) as the type of nominal classification

which is reflected beyond the nouns themselves in modifications required of 'associated words'. . . the determining criterion of gender is agreement; this is the way in which the genders are 'reflected in the behavior of associated

words' in Hockett's definition . . . Saying that a language has three genders implies that there are three classes of nouns which can be distinguished syntactically by the agreement they take . . . It is not only adjectives and verbs which can show agreement in gender, but in some languages adverbs agree, in other numerals and sometimes even conjunctions agree in gender.

Taking agreement as the defining criterion for gender (see also Royen 1929: 526–7, 756ff.) consequently implies for Corbett (1991: 5) that 'there are no grounds for drawing a distinction between languages in which nouns are divided into groups according to sex, and those where human/non-human or animate/inanimate are the criteria. Thus many languages described as having "noun classes" fall within our study' (see also Dixon 1986: 105ff.).

Seiler and the members of his Cologne project on linguistic universals have tried to integrate these 'techniques' or kinds of nominal classification into an overall framework. They differentiate the techniques 'ABSTRACTION-COLLECTION; MASS and MEASURE, CLASSIFICATION by VERB, CLASSIFICATION by ARTICLE, NUMERAL CLASSIFICATION, NOMINAL CLASS AGREEMENT, GENDER AGREEMENT', and 'NAMEGIVING' and claim that these techniques constitute the dimension 'apprehension' (Seiler 1986; Seiler and Lehmann 1982; Seiler and Stachowiak 1982).⁸ The ordering of the techniques is determined 'by two gradients that are negatively correlated with each other such that an increase in the one entails a decrease in the other. The two gradients . . . are . . . indicativity/individualization vs. predicativity/generalization' (Seiler 1986: 20). The technique 'abstraction-collection' marks the extreme for the functional principle 'predicativity/generalization', and the technique 'namegiving' marks the extreme for the functional principle 'indicativity/individualization'. I cannot present Seiler's model in more detail here. However, I want to note that with this description of ranked and ordered techniques of nominal classification one gets the impression that there are logical, two-directional steps of transition from one technique to the other. Seiler's model is more sophisticated than many other models that try to order the various types of nominal classification as if they constitute a cline – usually with Indo-European gender systems as the most highly developed classification systems. This hypothesis has a long tradition. Royen (1929: 268) points out that linguists like Adams and La Grasserie already tried to order nominal classification systems causal/chronologically within a system representing various developmental stages of nominal groupings; at the same time Royen also emphasizes that this hypothesis was already falsified

by Cassirer. Nevertheless, I cannot help thinking that all the models developed and proposed for describing the various types of nominal classification still imply a certain kind of scale – or certain kinds of scales – that in theory may allow for some kinds of transitory zones between one type of classification and another, but that in practice actually assign unequivocally one type of nominal classification to a certain language.

That this is difficult and problematic is evident if we keep in mind Corbett's definition of gender quoted above which subsumes the 'noun classes' type of nominal classification under the technique of 'gender'. The problem becomes even more complex if we remember that Corbett – rightly and correctly – excludes classifiers from his study on gender, conceding, however, that 'they are a source of gender systems' (Corbett 1991: 136ff.). Moreover, the situation gets even more complicated if we look at Gomez-Imbert's (1982) thesis on nominal classification in Tatuyo, an Eastern Tucanoan language of Colombia, that seems to have not only features characteristic for classifier systems but also for noun class systems (see also Gomez-Imbert 1996). Thus, there must be some interconnections between these types of classification. This idea is far from being new: it was Gerlach Royen (1929: 266) who pointed out that a language may use (at least) two different systems of classification at one and the same time.

The most obvious connection between these systems is their function, of course. Besides the grouping and the subcategorization of nouns these systems have another major function, namely, 'reference tracking' (Corbett 1991: 322). However, although all these systems have these basic linguistic functions in common, we obviously do not know much (if anything) about how these types of nominal classification interact with each other. It is not clear how and why different types of nominal classification are to be found in one and the same language. And although we can hypothesize on the basis of good linguistic data about stages of transition, which may be understood and described as stages of grammaticalization, from one type of nominal classification to the other, we do not actually know very much about the actual processes involved in these transitions.

It is true that we have excellent examples of research even on general problems of nominal classification in individual languages, however, I have the impression that Royen's (1929: iv) point with respect to this topic of linguistic research still holds: the question of nominal classification raises a whole lot of other questions. In what follows, I will raise

some of these further questions on the basis of my own research on the system of classificatory particles in Kilivila. Thus, I will use a so-called numeral classifier system to exemplify problems that – at least to my mind – are typical for all systems of nominal classification. However, before I do this I will give a brief description of the Kilivila classifier system.

2.2 *Excursus: a brief sketch of the Kilivila system of nominal classification*

Aspects of the Kilivila system of nominal classification were first described by Malinowski in 1920 in his paper ‘Classificatory particles in the language of Kiriwina’. I will use the general term (from here onwards abbreviated as ‘CP’) Malinowski coined for these formatives when I refer to classifiers in Kilivila. The system of CPs I have described in detail in 1996 consists of 88 formatives; however, so far 177 CPs have been documented for Kilivila (Senft 1996: 171–9; Lawton 1980; see also note 13 below). This system is an important means of word formation with all (but one) of the demonstrative pronouns, with one form of (numerical) interrogative pronouns/adverbs, with two classes of adjectives, and with numerals. These word classes require concord with the class of the noun they refer to. This concord is secured by the CPs that are infixes or prefixed to the respective word frame or word stem. I have described these processes of word formation and syntactic aspects of constituents with classifiers in detail elsewhere (Senft 1985: 374–9, 1986, 1991, 1996); however, in what follows I will briefly sketch these processes of word formation.

With the exception of the demonstrative pronoun *besa* or *beya* (‘this’ (with an obligatorily accompanying deictic gesture)) all other demonstrative pronouns consist of a fixed morphological frame, formed by the word-initial morpheme *ma-*, or, according to phonological rules, also *m-* or *mi-*, and the word-final morpheme *-na*, and an infix morpheme, which is the CP; to distinguish between singular and plural, there is also a plural-marking morpheme *-si-*, which is infixes between the CP and the word-final morpheme *-na*. Demonstrative pronouns formed in this way express the concept of ‘this/these here’. To express the deictic concept of ‘that/those there’, the morpheme *-we-* is infixes either in singular forms between CP and word-final *-na* or in plural forms between the plural-marker *-si-* and word-final *-na*. To express the kind of deictic concept that comes close to the English demonstrative ‘yonder’, the Kilivila speaker takes the forms of the demonstrative

pronouns expressing the concept of ‘that/those there’ and changes the final vowel /a/ of the word-final morpheme *-na* to an /e/ that is lengthened and that gets a minor accent. There are three classes of adjectives in Kilivila. One class must be used without CPs, the other class may be used with or without CPs, and the third class must always be used with CPs that are prefixed to the word stem. The numerals or, more precisely, the cardinal numbers in Kilivila consist of the word stem and a prefixed CP. There is also one form of an interrogative pronoun/adverb that consists of the word stem *-vila* and a prefixed CP.

As already mentioned above, I refer the reader who wants detailed information about these processes of word formation to my previously published work on this topic (especially Senft 1986, 1991, 1996); for the purposes pursued here it suffices to finish this brief descriptive general account with the presentation of two sentences with all the four word classes involved in the system of noun classification. In the examples the CP (-)kɛ(-) is underlined:

(5) *Kevila waga lekotasi?*

kɛ-vila waga le-kota-si?
CP.wooden-how many canoe 3.Past-arrive-Plural
‘How many canoes arrived?’

(6) *Keyu waga makesina kemanabweta (lekotasi).*

kɛ-yu waga ma-kɛ-si-na
CP.wooden-two canoe Dem-CP.wooden-Plural-Dem
kɛ-manabweta (le-kota-si).
CP.wooden-beautiful (3Ps.Past-arrive-Plural).
‘These two beautiful canoes (arrived).’

Here the speakers of these sentences refer to ‘canoes’; they have to classify the noun ‘canoe’ with (-)kɛ(-), the CP for ‘wooden things’, in the interrogative pronoun, in the numeral, in the demonstrative pronoun and in the adjective. Here the CP classifies the noun inherently, specifying the semantic feature ‘wooden thing’ inherent in the classified noun ‘canoe’. However, the complex inventory of CPs also allows the speakers to classify a noun ‘temporarily’ (Berlin 1968: 175), i.e. to emphasize certain characteristics of the noun they refer to. This is illustrated by the following examples (see Senft 1996: 18f.):

(7) *natala yena*

na-tala yena
CP.animal-one fish
‘one fish’

- (8) *kevalalima yena*
kevala-lima yena
 CP.batch.drying-five fish
 'five batches of smoked fish'
- (9) *oylalima yena*
oyla-lima yena
 CP.string-five fish
 'five strings with stringed-on fish'
- (10) *makupona yena*
ma-kupo-na yena
 Dem-CP.two.string-Dem fish
 'these two strings of fish'
- (11) *mapwasasina yena*
ma-pwasa-si-na yena
 Dem-CP.rotten-Plural-Dem fish
 'these rotten fish'

These examples first present the CP *(-)na(-)* in its connotation 'animals' and then illustrate a part of the noun modifying group of CPs that specify the noun with respect to its quantity, its order, its arrangement and its condition or state.

Besides their important role in Kilivila word formation processes and their functions to mark concord between nouns classified and the word classes containing the CP as well as to classify and specify their nominal referents inherently as well as temporarily in many different ways and with much semantic power, CPs also serve the following important functions that I will only mention (but not illustrate) here: CPs can nominalize all numerals, some adjectives and all demonstrative pronouns (with the exception of *besa*). Being collective terms CPs can fulfill the function of marking plural in nouns they refer to. Some CPs can fulfill verb-like functions within noun phrases of sentences. With their anaphoric referential function CPs can constitute noun phrases that are comparable to elliptic utterances: once a noun has been introduced, the following noun phrases referring to this noun may consist of numerals, adjectives, and/or demonstrative pronouns only (the noun itself is then no longer realized, or, to phrase it differently, the noun is then 'deleted' in the respective noun phrases) if the noun these noun phrases refer to is not reclassified. With their anaphoric referential potential CPs can also fulfill the function of preserving coherence in discourse (for a detailed illustration of these functions see Senft 1996: 16–23). These few remarks on the Kilivila CP system must suffice for the

purposes pursued here. I will briefly come back to the question of how the overall system is to be adequately described below when I discuss the problem of functions and meanings of classifiers. With these remarks I end my excursus and continue the more general discussion of problems of nominal classification.

2.3 *What do we really know about nominal classification? Questioning general research on, and a representative of, numeral classifier languages*

2.3.1 *Numeral classifier languages and bases for the differentiation of the classifying formatives*

Classifier languages are distributed all around the world, belonging to such different language families as the Malayo-Polynesian, the Austro-Asiatic, the Sino-Tibetan, the Altaic, the Dravidian and the Indo-Aryan language family (see, among others, Adams and Conklin 1973: 9; Foley 1968: 77–91; Greenberg 1975: 18).⁹

As already mentioned above, numeral classifier languages are considered to be the paradigmatic type of classifier languages. However, the classifier morphemes in so-called numeral classifier languages are not only used for counting animate and inanimate referents. In many languages we also find these classifying formatives in anaphoric and deictic expressions. Moreover, in Kilivila classifiers can or even have to be used in the word formation of some adjectives. Therefore, the term ‘numeral classification’ is somewhat inaccurate.¹⁰

Classifiers are generally defined as morphemes that classify and quantify nouns according to semantic criteria.¹¹ On the basis of this definition that assigns a twofold function to classifiers, linguists generally differentiate between ‘classifiers (proper)’ and ‘quantifiers’. To subsume the ‘classifiers (proper)’ on the one hand and the ‘quantifiers’ on the other hand under one label again, Serzisko (1980: 7) – following Hla Pe (1965: 166) and Bloomfield (1933: 237) – proposes the generic term ‘numerative’. Classifiers and quantifiers are usually defined as follows (see Senft 1996: 6):

Classifiers classify a noun inherently, i.e. they designate and specify semantic features inherent to the nominal denotatum and divide the set of nouns of a certain language into disjunct classes.

Quantifiers classify a noun temporarily, i.e. they can be combined with different nouns in a rather free way and designate a specific characteristic feature of a certain noun which is not inherent to it.

Besides the terms 'classifier' and 'quantifier' we also find the terms 'sortal classifier' – defined as a classifier 'which individuates whatever it refers to in terms of the kind of entity that it is' – and 'mensural classifier' – defined as a classifier 'which individuates in terms of quantity' (Lyons 1977b: 463). Some linguists differentiate also a category of classifier morphemes which they call 'repeaters' (Hla Pe 1965: 166), 'echo classifiers' (Burling 1965: 249), 'identical classifiers' (Fischer 1972: 69), or 'autoclassifiers' (Goral 1978) – these terms characterize the fact that nouns can be used as their own classifiers.¹²

There are a number of other terms that try to describe and specify classifiers (see Senft 1996: 7–9), but I do not want to discuss these terms in more detail here. With respect to Kilivila I just want to note again that Bronislaw Malinowski (1920) does not differentiate between classifiers (proper), quantifiers and repeaters, but refers to these formatives in Kilivila as 'Classificatory Particles'.

It seems to me that the lack of descriptive accuracy already observed with the inappropriate label 'numeral classifier language' is also responsible for many other misunderstandings between researchers of nominal classification phenomena. The various attempts to differentiate classifiers, especially the differentiation between sortal and mensural classifiers with its more or less explicit claims to be universal, is an excellent example.

This differentiation of classifiers is in itself a form of classification or a kind of subcategorization. It results in the claim – at least in my understanding – that there are different categories of classifiers. However, with respect to this claim I would like to maintain with Corbett (1991: 147) 'the requirement that to demonstrate the existence of a category, evidence of distinctions in form is necessary'. With respect to this requirement I cannot observe any differences between the CPs that constitute the rather complex Kilivila system¹³ – and I suspect that it will be somewhat problematic to find this 'evidence of distinctions in form' in other so-called numeral classifier languages.

This does not mean, however, that I would like to deny the possibility of grouping classifiers according to semantic criteria. But if we do this we have to be completely aware of the fact that this grouping or 'classification' is based on our, i.e. the researchers', understanding of the semantics of these formatives in the respective languages. Thus, I would like to argue that as long as these groupings are not grounded in the grammar and marked as being formally distinct in the respective language we cannot claim the status of different categories for semantically based groupings of classifiers. At least as descriptive linguists we

first of all have to look at languages from the 'emic' point of view; and if we neglect this 'emic' perspective and opt for an 'etic' perspective – because of some specific research interest – we then have to mark this clearly in our analyses to avoid crucial misunderstandings.

On the basis of these considerations I would like to stick to the first and rather general definition of classifiers – the classifying morphemes or formatives – in so-called 'numeral classifier languages' as morphemes that classify nouns according to semantic criteria. A subclassification into categories like 'quantifiers' and 'classifiers' or 'sortal' and 'mensural classifiers' can only be accepted if there are distinctions in form that clearly indicate that the respective language itself differentiates between these categories.

It is quite obvious that the first and general definition of classifiers given above is not sufficient if we want to answer the question of what classifiers really do with respect to their classification of nominal referents. CPs are morphemes that classify and quantify nominal referents according to semantic criteria – but what about the semantic bases for this classification? As we shall see, the differentiation between what is given – and formally marked – in a language and what may be the result of (first) linguistic – heuristic methodological or analytical – approaches is also crucial for this question.

2.3.2 Semantic bases for the classification of nominal referents

As already stated elsewhere (Senft 1996: 9), in classifier languages nominal referents are classified and categorized according to their specific characteristics. This kind of classification is based on semantic principles and results in the ordering of objects, living beings, concepts, actions and events. In other words, this classification leads to a categorization of all the nominal 'conceptual labels' (Hundius and Kölver 1983: 182; see also Denny 1986) coded in such a language (for an exception with respect to this general principle see Grinevald's discussion of Jakaltek in the next chapter). We can refer to the units of this classification as 'semantic systems' (Denny 1979: 97) or as 'semantic domains' (Berlin 1968: 34; Tyler 1969: 8). Thus, on the basis of semantic considerations, classifiers can be grouped together and then be regarded as constituting certain semantic domains; the semantic domains constituted by these CPs represent the semantic (sub-) structures of a (classifier) language (see Friedrich 1970: 379).

The critical questions to be answered now are: what are the semantic criteria and principles this kind of classification is based on?, and,

moreover, is the respective classification in different languages culturally determined or not?.

Descriptions of the criteria that structure classifying systems generally give the following features: '+/- Human; Human & Social Status; Human & Kinship relation; +/- Animate; Sex; Shape/Dimension; Size; Consistency; Function; Arrangement; Habitat; Number/Amount/Mass/Group; Measure; Weight; Time; Action; +/- Visible'.¹⁴

Classificatory systems are usually described by feature lists that list the respective features in a relatively free order; there are only a few attempts to order these features hierarchically (e.g. Goral 1978: 194; but compare Craig 1986: 5–6). Thus, Becker (1975) describes the Burmese system of CPs hierarchically in the form of concentric circles; Miram (1983) proposes functional diagrams – 'Flußdiagramme' – to describe the system of Yucatecan Maya. What must be emphasized here is the fact that most if not all of these features represent semantic categories that are fundamental in, and for, all languages. Friedrich (1970: 404) characterizes the feature 'shape' even as the 'ultimate semantic primitive' (see also Allan 1977: 302). Although this last inference seems to be somewhat biased by Friedrich's research on Tarascan and his knowledge of Mayan languages (which are indeed extremely sophisticated with respect to their classification according to shape of the referent), it should be noted that – at first sight, at least – these principles seem to be universal (see Lyons 1977b: 466). However, a closer look at the respective classifiers that constitute the semantic domains for the individual languages on the basis of these features elucidates that these general and probably universal categories are defined in a culture-specific way (see e.g. Berlin 1968: 35). It is also evident that the boundaries between the individual semantic domains are rather fluid (see Rosch 1978: 36; 1977: 4, 15, 18, 21). Thus Craig (1986: 1) – on the basis of prototype theory – claims rightly that 'categories . . . should be described as having fuzzy edges and graded membership' (see also Posner 1986; Givón 1986).

Therefore, the description of semantic domains within any numeral classifier language asks for a sound analysis of how these domains are constituted, i.e. which features are relevant for the definition of the respective semantic domain (see Lenneberg 1953: 486; Rosch 1978: 28). This ethno-semantic descriptive and analytical research is rather complex and presupposes the linguist's thorough and deep delving into the language to be described. This may explain why most typological comparative studies on languages with such classificatory systems in their necessarily generalizing approach neglect this micro-level of

ethno-semantic analysis. Again I have to point out that this insight is far from being new: Gerlach Royen, in his seminal contribution to the field, points out that nominal classification systems do not classify in an abstract-logical way: 'Daß die Nominalklassifikation in einer rein abstrakt-logischen Theorie keine Erklärung findet, kann gegenwärtig wohl als sicher gelten. Die Sprache ist kein streng logisches System, sondern ein psychologisches Geschehen, das mehr ist als bloße spekulative Logik' ('The fact that nominal classification is not explained within the framework of a purely abstract-logical theory is most probably to be accepted at the moment. Language is not a strictly logical system, but rather a psychological event that is more than just speculative logic' (my translation, G.S.)) (Royen 1929: 55; see also 268). For Royen the various types of nominal classification in the languages of the world are inextricably intertwined with what he calls the social forms and religious ideas of their speakers. Therefore he emphasizes repeatedly that an interdisciplinary approach – with linguistics, anthropology, *Völkerpsychologie* and sociology as the main disciplines involved – is not only necessary but also inevitable for any research and analysis of nominal classifier systems (Royen 1929: iii, 37, 68, 185, 192, 305, 364, 889).

This brief theoretical summary may suffice for the purposes pursued here. But what do we actually do if we try to describe and analyse how these semantic domains are constituted in (classifier) languages? Usually we start our descriptions by characterizing and labelling certain semantic domains according to the fundamental – and probably universal – features mentioned above. This results in a number of semantic domains which we take as the semantic structures of the (classifier) language we want to describe. One of the basic and crucial mistakes we most often make at this point of our analysis is that we forget about (or suppress) the fact that the ordering of classifiers according to semantic domains was something we ourselves did as a first methodological device to order the facts in a pre-analytic way. This pre-analytic ordering can only be a heuristic means for our attempts to describe the system as a whole. This ordering results in 'static' semantic domains. It is now that the actual analyses have to start. These analyses have to look at the actual use of the classifiers and compare this actual use with the criteria and features we used in our first definition of the semantic domains. We then have to redefine and revise these first definitions of semantic domains. Then we have to give up the idea that these semantic domains are 'static'. And finally we have to come up with a description that can cope with the dynamics, i.e. with the dynamic

interaction between the semantic domains, of the respective system of nominal classification.

However, more often than not we treat the first pre-analytically defined semantic domains as if they were static wholes; moreover, we treat them as if they were actually to be found in the language, although they are just the result of our pre-analytical classifications. I concede that it is quite tempting to present a nicely ordered system of semantic classification – a system that is not messed up with the above mentioned ‘fuzzy edges’ or with cases of ‘graded membership’. However, these nicely ordered systems do not represent the reality of the actual linguistic system to be described. Analyses like the one I have proposed with respect to the (network-) system of the CPs in Kilivila (Senft 1991: 1996), with the aim of describing how the system of nominal classification of a (classifier) language is actually used by the speakers of this language, are quite complex and time-consuming, and their results are usually difficult to present (I will provide a brief summary of these analyses in the next subsection). However, I think we have to come up with more complex analyses like the one I have presented (Senft 1996) if we really want to get a better idea about how these systems and their dynamics function. If we know something (more) about the various functions of these systems we then can also come up with answers to the questions: what does a classifier actually do with respect to the linguistic system of a classifier language and what does a classifier mean?

2.3.3 *Functions and meanings of classifiers*

We already mentioned above that besides the functions of grouping, subcategorizing and classifying the nouns of a language nominal classification systems have another major function, namely, ‘reference tracking’ (Corbett 1991: 322). Nouns in classifier languages can be characterized as nouns with generic reference (see Royen 1929: 775). With their referential function classifiers individualize nominal concepts; they can mark that a noun they refer to must be understood as having non-generic reference (see Serzisko 1980: 15, 86–7).

The functions classifiers fulfill are succinctly summarized by Adams, Becker and Conklin (1975: 2): ‘Besides their function in numeral noun phrases classifiers in various languages function as nominal substitutes, nominalizers of words in other form classes, markers of definiteness, relativizers, markers of possession, and as vocatives; serve to disambiguate sentences; establish coherence in discourse and regularly mark registers and styles within a language.’ This list is quite impressive, and it is

supported by my research on the Kilivila CP system (see above and Senft 1996: 16–23). However, besides all these functions the basic function of classifiers is to classify. But what do classifiers actually classify – extralinguistic referents (i.e. beings, objects, states, actions, etc.) or the intralinguistic category ‘noun’?

In our descriptions of classifiers in the noun phrase we usually use sentences like ‘this classifier refers to this noun’ or ‘this classifier refers to this nominal referent’. Both sentences may be understood as a kind of ‘shorthand’ for ‘this classifier refers to this noun which itself is used as the expression to refer to, e.g., an object in the extralinguistic reality’. However, the shorthand versions open up a ‘nice’ ambiguity with respect to this ‘reference’.

As stated above a classifier marks that the noun it classifies must be understood as having non-generic reference, in other words: classifiers individuate nouns in classifier languages. My research on the actual use of CPs in Kilivila revealed that the semantic domains constituted by the CPs can be described and understood as a kind of ‘network’, in which the respective CPs are realized in at least two different ways (Senft 1991, 1996: 325–9). However, before I can present these two ways I first have to briefly summarize my analyses of the Kilivila CP system (see Senft 1991: 138–49).

My analyses of the Kilivila CP system are based on three corpora I collected in 1982–3 and in 1989. The first corpus consists of all the transcribed speech data I documented during my field research. It consists of 34,955 words which include 1,564 CP tokens representing 41 different CP types. The second corpus consists of 88 CP types I elicited in 1983 with the help of a questionnaire from sixty informants of five different age groups, ranging in age from approximately four to seventy-five years (see Senft 1987: 102–7). The third corpus, finally, consists of data I elicited in my 1989 CP restudy with seventy-eight informants to control in three different elicitation tests and in participant observation the results of my previous analyses (see Senft 1996: chapter 4).

I analysed the first two corpora with respect to the questions on how the CP system functions, how it is acquired by children, how it is actually used in speech production, what kind of changes affect it, and how its semantics can be described. With this description and analysis I wanted to predict which CPs a speaker will produce to refer to a given nominal concept. The semantic analyses revealed that the 88 CP types described can be grouped into twenty semantic domains that cover the following concepts (see table 1.1):

Table 1.1. *Semantic domains constituted by the Kilivila CPs
and the concepts they cover*

1.	(a) Person
	(b) Body part
2.	Animal
3.	(a) Quantity (living beings (in general))
	(b) Quantity (things (in general))
4.	General CPs (unmarked forms for inanimates (in general))
5.	Measure
6.	Time
7.	Place
8.	Quality
9.	Shape
10.	Tree, wood, wooden thing
11.	Utensil
12.	Yam
13.	Part of a foodhouse, a canoe, a creel
14.	Door, entrance, window
15.	Fire, oven
16.	Road, journey
17.	Text
18.	Ritual item
19.	Dress, adornment
20.	Name

The order in which these domains are given in table 1.1 is completely arbitrary. The grouping of the domain defining and constituting CPs was primarily based on commonsense considerations that among other things took into account ethnographic information and knowledge of the speech community studied. However, the results of the restudy confirm this grouping of the 88 CP types: Kilivila native speakers accept the semantic domains proposed. I did this first grouping of the domain constituting CPs under the tacit assumption that these domains could be described as static or closed systems. However, my preceding analyses of the CP system, especially the cross-references given by my informants for certain CPs and the results with respect to the actual realization of the individual CPs in different contexts, made it obvious that this procedure was only an idealization necessary to establish a basis for discussing the problem of the dynamics of these semantic domains. The grouping of the CPs was based on the rather trivial fact that all the CPs that constitute a certain semantic domain share certain

important features; however, some CPs have inherent features that permit them to be assigned to more than one semantic domain. Such a possible multiple assignment of certain CPs to different semantic domains again raises questions about the dynamics of such a classificatory system. Let me use the semantic domain 'shape' as an example with which to discuss this problem.

After a closer look at the CP inventory I considered the following CP types as constituting the semantic domain 'shape':

<i>ke</i>	rigid, long objects (= <i>ke</i> ²)
<i>kabulo</i>	protuberances (= <i>kabulo</i> ')
<i>kasa</i>	row, line
<i>gili</i>	row
<i>nutu/notu</i>	kneaded things, dot, drop

Looking at the CP production data that constitute my second corpus, where I elicited the production of CP types from sixty informants of different ages, I realized that the CP *kabulo* was not produced at all if speakers wanted to refer to the concept 'protuberances'; instead, speakers realized tokens of the CP types *ke*² (rigid, long), *bwa* (tree) and *utu* (scrap). The CP *kabulo*, however, was realized instead of the expected CP *nunu* in the domain encompassing the concept place. Here we observe three kinds of CP substitution: the CP *kabulo* is replaced by the CP *ke*²; *ke*² and *kabulo* are regarded as constituting one and the same domain. This is a substitution of one CP by another CP within one and the same domain. Therefore, I call this kind of substitution 'intra-domain substitution'. The CP *kabulo*, however, was also replaced by the CPs *bwa* and *utu* that are regarded as constituting the semantic domains 'tree, wood, wooden things' and 'quantity (things (in general))'. I call this kind of substitution where CPs constituting other semantic domains 'come' into the semantic domain observed 'in-domain substitution'. Finally, the fact that the CP '*kabulo*' is produced in the domain that encompasses the concept 'place', replacing the expected CP '*nunu*' there, represents the kind of substitution I call 'off-domain substitution' because the (tokens of the) CP *kabulo* are realized off the original domain and 'go' into another semantic domain. Thus, cases of off-domain substitution observed with one domain are in-domain substitution cases in another (or in other) domain(s). CPs that 'come' into a certain semantic domain by cases of in-domain substitution and CPs that are realized within this certain semantic domain are regarded as actually

constituting this domain. Together with the CP types I assumed as constituting a semantic domain I wanted to note down all the cases of in-/ intra-/ and off-domain substitution of CP types that affect the domain. I indicated cases of in-domain substitution by the notation '+++', cases of off-domain substitution by the notation —; and cases of intra-domain substitution by the notation

	I	
	I	
	II	
that reads:	tokens of CP X	X
	are produced	I
	instead of	I
	the expected	II
	tokens of CP Y	Y

I also wanted to know and to note how many tokens of CP types were realized by the sixty informants producing the data under analysis – ideally, each of the sixty informants should produce three tokens of one CP type. Moreover, I also wanted to give a comparative figure and therefore computed and noted down the relative frequency (hereafter r.f.) with which the respective tokens of a CP type were produced by informants for each semantic domain observed. The r.f.s were computed on the basis of 180 tokens (= sixty informants producing in the ideal case three tokens of a certain CP type). Thus, if I observed 180 tokens of a certain CP type produced in the test, these tokens got the r.f. 1.0. If I observed no token of a certain CP type the production of which was expected, the CP type got the r.f. .0.

This procedure resulted in tables for all twenty semantic domains that attempt to reflect the dynamics involving the constitution of these domains by CP types. All tokens of the CP types that actually constitute the respective semantic domains (including all tokens given for these CP types in intra-domain substitution and in-domain substitution cases) were counted and ordered according to the frequency of their production. On the basis of their sum, relative frequencies (r.f.s) for all tokens constituting the domain were computed to give a comparative figure for the inter-domain weighting of each CP type. The r.f.s for all CP types constituting a certain domain add up to 1.0 (if the r.f.s add up to 1.01 or to .99 it is not a computing deficiency, it is rather the result of arithmetic processes of bringing the individual values up or down to round figures).

On the basis of these data I then tried to set up the rules speakers (may) adhere to in their production of a certain CP of the respective semantic domain discussed. I regard these rules as the expression of the transfer of a given semantic concept into an appropriate classifier. The rules have to cope with the domain-inherent and domain-afflicting dynamics. Thus, most if not all of the rules proposed and formulated are actually variable rules (for a discussion and further references see Labov 1972, 237–43; Senft 1982: 6–9). I dispensed with a formal notation of these rules in favour of a comprehensive formulation which I hope will be easier to understand. To my knowledge these rules are the only means to come up to the expectation of being able to predict which CP(s) a speaker will produce to refer to a given nominal concept. In my opinion, variable rules can apprehend, describe and record such dynamic processes in the best way possible.

Again, let me exemplify this procedure with the help of the semantic domain 'shape'. Tables 1.2a and 1.2b attempt to present the dynamics of this domain and give the evaluation of the CP types that actually constitute it. The domain numbers are the same as those used in table 1.1.

Table 1.2a documents that with domain 9 we observe two cases of intra-domain substitution and nine cases of in-domain substitution (afflicting CPs that constitute the domains 3b (quantity), 4 (general CPs), 8 (quality), 10 (tree, wooden thing) and 19 (dress, adornment)).

We also observe seven cases of off-domain substitution (afflicting the domains 3a and b (quantity), 7 (place), 8 (quality), and 17 (text)).

Table 1.2b presents the CP types that constitute the domain and gives the r.f.s for the production of the individual CP types within the domain as a whole.

On the basis of these two tables I try to formulate the variable rules speakers adhere to in their production of a certain CP type of domain 9 that covers the concept 'shape':

If speakers want to refer to the concept 'protuberances', they do not produce the special and most appropriate CP *kabulo'*, but realize most often the CP *ke'* (r.f. .59). The CP *utu* is also produced in this context (r.f. .21; here speakers may have the intention of referring to a 'protuberant part'). Moreover, it is possible, though rather rarely observed, to produce the CP *bwa* in this context (r.f. .02; here speakers may have the intention of referring to 'protuberant wooden things').

If speakers want to refer to the concept 'row, line', they most often produce the special and most appropriate CP *kasa* (r.f. .77). It is also

Table 1.2a. Domain 9: 'shape'

In-domain substitution					Off-domain substitution	
				<i>ke²</i>		
				107		
				.59		
(Domain 10)	<i>bwa</i>	3	+++	<i>kabulo₁</i>	— 3	<i>nunu</i>
		.02			.02	(Domain 7)
(Domain 3b)	<i>utu</i>	38	+++			
		.21				
(Domain 4)	<i>ke</i>	2	+++	<i>kasa</i>	139	<i>meila</i>
		.01			.77	'Domain 17)
(Domain 4)	<i>kave</i>	9	+++			<i>nina</i>
		.05				(Domain 17)
						<i>giwi</i>
						(Domain 8)
						<i>gum</i>
						(Domain 3b)
						<i>yuva</i>
						(Domain 3a)
						<i>deli</i>
						(Domain 3a)
				3		
(Domain 4)	<i>kave</i>	29	+++	<i>gili</i>	12	
		.16			.07	
(Domain 8)	<i>vili</i>	3	+++			
		.02				
(Domain 8)	<i>ya</i>	101	+++			
		.56				
(Domain 19)	<i>vakala</i>	2	+++			
		.01				
(Domain 4)	<i>kave</i>	33	+++	<i>nutu/notu</i>	103	
		.18			.57	

Table 1.2b. Domain 9: r.f.s interpreted as figures for the evaluation of CP types (in-/intra-domain)

1.	<i>kasa</i> (row, line)	139 + 3	= 142	r.f. :24
2.	<i>ke²</i> (rigid, long)	107	(= 107)	r.f. :18)
	<i>ke²</i> (inanimates)	2	(= 2)	r.f. :003)
		109	= 109	r.f. :19
3.	<i>notu</i> (kneaded/dot)	103	= 103	r.f. :18
4.	<i>ya</i> (flexible/thin)	101	= 101	r.f. :17
5.	<i>kave</i> (thing)	9 + 29 + 33	= 71	r.f. :12
6.	<i>utu</i> (scrap)	38	= 38	r.f. :06
7.	<i>gili</i> (row)	12	= 12	r.f. :02
8.	<i>vili</i> (untwisted)	3	= 3	r.f. :005
9.	<i>bwa</i> (tree)	3	= 3	r.f. :005
10.	<i>vakala</i> (belt)	2	= 2	r.f. :003
			585	.99

possible, though rarely observed, to realize the two general CPs *kwe* (r.f. .05) and *ke* (r.f. .01) in this context.

If speakers want to refer to the concept 'row', they only produce the special and most appropriate CP *gili* if they are persons of status (r.f. .07). To refer to this concept speakers most often produce the CP *ya* (r.f. .56; here speakers may have the intention of emphasizing the flexible quality of a row). Another possibility here is to produce the general CP *kwe* (r.f. .16). Moreover, it is also possible, though rather rarely observed, to produce the CP *vili* (r.f. .02; here speakers may have the intention of referring to a 'row brought into an untwisted line'), the almost synonymous CP *kasa* (r.f. .02), or the CP *vakala* (r.f. .01); however, the production of the CP *vakala* in this context is somewhat idiosyncratic.

If speakers want to refer to the concept 'kneaded things, dot, drop', they most often realize the special and most appropriate CP *nutu/notu* (r.f. .57). It is also possible to produce the general CP *kwe* (r.f. .18) in this context.

Table 1.2b shows that the CPs *kasa*, *ke*², *nutu/notu*, *ya* and *kwe* play the more important roles within this semantic domain.

I shall now introduce the network model which I propose for the description of the Kilivila classifier system. Let me briefly summarize the procedure in this analysis once more. My aim is to present the dynamics of the semantic domains constituted by the CPs described and to formulate language production rules that predict a speaker's choice of a certain CP to refer to a given nominal concept. These rules are understood as expressing the transfer process from a given semantic concept a speaker wants to refer to into an appropriate CP. Thus, I first defined the semantic domains by grouping the CPs based on commonsense considerations that took into account ethnographic and sociological information about the speech community. This procedure provided the basis for describing what actually happens if a certain CP type is produced to refer to a given semantic concept. The observation of the processes which I called intra- and in-domain substitution and the weighting and evaluation of these processes by computing the relative frequency with which a certain CP is realized within the domain as a whole resulted on the one hand in the formulation of (variable) rules – which I interpreted as rules speakers adhere to in their production of a certain CP type of the respective semantic domain – and on the other hand in an insight into the evaluated distribution of the individual CP types within the semantic domain constituted by these CP types.

The logic inherent in this procedure can thus be summarized as follows (Senft 1996: 283):

- If speakers want to transfer a given semantic concept into an appropriate CP to refer to just this concept, they first have to assign the given semantic concept to the semantic domain that encompasses this concept.
- Next speakers must call in and activate the variable rule or rules that they use in their production of a certain CP type of this domain that refers to the concept given.
- If the rule allows the production of more than one CP type in the respective context, they must decide which of the possible CP types is most appropriate for their purposes pursued in referring to the given concept. If they are persons of status and if the variable rule activated includes a CP type that serves the function of a sociolinguistic variable, they must decide whether they want to use this CP with its sociolinguistic implications.

All these decision processes then lead to the production of one CP that the speakers assume to be most appropriate to refer to the given semantic concept and for the means and ends they want to pursue with their verbal reference.

Thus, my attempt to predict a speaker's choice of a certain CP to refer to a given nominal concept also emphasizes the following fact: among other things CPs must be understood as formatives that can be used strategically to serve certain means and ends a speaker wants to pursue and express.

Moreover, my procedure also emphasizes that the semantic domains constituted by the CPs are not static at all. They are dynamic and interact with each other, and can be understood as 'program clusters, procedures, scripts' or 'functional pathways' (see Pribram 1987: 7–12) speakers employ and rely on in their speech production.

In a heuristic phase of the analysis of the dynamics of these domains I noted the cases of in-, intra- and off-domain substitution for all twenty domains on a large sheet of paper. The result was a kind of drawing that looked like a mycelium, or a network, to use another simile. Being aware of the fact that this label has some tradition in semantics and in psycholinguistics, I will nevertheless use this 'network' simile from here on because I am convinced that it is the most appropriate term to describe the facts observed.

Thus, on the basis of the analyses presented here, I describe and understand the semantic domains constituted by the CPs as a network in which the respective CPs are realized in at least two different ways:

Some CPs are only realized within one semantic domain; I characterized these CPs as elements that are uniquely represented and uniquely localized within the semantic network.

Some CPs are realized within more than one semantic domain; I characterized these CPs as elements that are multiply represented and multiply localized within the semantic network. These multiply represented and localized CPs can be understood as the network-linking elements, the network ramifications or the network switches that open up and offer the speakers new ways for a creative and innovative use of these CPs.¹⁵

Moreover, I assumed – on the basis of the results of my research with respect to the actual production of CPs and the processes of language change in progress – that CPs being uniquely represented and localized elements of the network can change their status and become multiply represented and localized elements within the network. On the one hand, this change of status of a CP as an element within this network can be temporary only – if a speaker uses this possible device offered by the network to pursue certain aims and ends, i.e. if a speaker wants to use a certain CP strategically (for example to produce a new catching metaphor). On the other hand, this change of status of a CP as an element within this network can become permanent – if the speech community approves of the fact that the respective CP can also be recognized as constituting one or more semantic domains that are different from the domain this CP originally co-constituted. This process of status change of an element within the network can also be effective in the opposite direction, i.e. a multiply represented and localized CP can become a uniquely represented and localized CP if the speech community no longer accepts or uses this CP as a network-linking element. Thus, the dynamics of this network offer the speaker an excellent point of departure in the comprehensive framework of the ‘Sprachspiel’ (Wittgenstein 1977, 1980). These dynamics of the network explain the semantic power inherent in the CP system; moreover, these dynamics also allow one to consider the semantic network established by the CPs as an infinite system – at least in principle.

Thus, the choice of an adequate classifier to refer to a nominal referent occurs on the semantic level; it can be independent of the

speech act intended, and therefore attains stylistic denotation, meaning and significance (see also Becker 1975: 113; Burling 1965: 259; Goral 1978: 26). Individual speakers use these options in their choice of CPs – and a closer look at the actual use of a CP system by its speakers reveals that Becker (1975: 113) is completely right when he claims that the actual ‘use of classifiers . . . is in part an art’ (see also Becker 1986).

We can conclude that all classifiers indeed ‘do have meaning’ (Allan 1977: 290). But how is this meaning achieved and what does it do? The classifier that refers to a nominal referent may individuate the noun and then highlight a special (shade of) meaning which then extracts one special referent out of the sum of possible extralinguistic referents the noun can refer to if it is not specified by this classifier. If this is the case, we have to ask whether the classified noun the classifier referred to is still the same noun that is to be found in the lexicon (without being classified by one or the other or even by more classifiers). Does a classifier only refer to an object in the extralinguistic reality or does it also refer to the intralinguistic category ‘noun’ and change its meaning? Or, in other words, does the CP refer to a ‘referent’ in the ‘real world’ or to a ‘noun’, an entity in the lexicon of a language? However, we can even argue the other way round: if a noun is classified by a certain classifier, will the meaning of the noun influence the meaning of the classifier?

I will give one example that I hope will clarify the rather complex point I want to make here. Take the Kilivila noun phrase: *magudina waga*. The morpheme-interlinear translation of this phrase runs:

<i>ma-gudi-na</i>	<i>waga</i>
Dem-CP.child-Dem	canoe

Here the noun *waga*, the Kilivila verbal sign to refer to the extralinguistic object ‘canoe’ is – metaphorically – classified with the CP *gudi* in the frame of the Kilivila demonstrative pronoun. The CP *gudi* is usually used to refer to ‘a child’ or to ‘an immature adult’. It is quite likely that the CP *gudi* is a so-called ‘repeater’ that originates in the noun *gwadi* (see subsection 2.3.4 below); this noun is the Kilivila verbal sign that refers to ‘a child’ or to ‘an immature adult’. The CP that one would expect to be used with the nominal referent *waga* is *ke*; among other things, this CP refers to ‘a tree’ or to ‘wooden things’ – and the Trobriand Islanders’ canoes are made out of wood. Now, how can we translate this phrase? A possible literal translation would be ‘this child-like

canoe'. However, it is obvious that this sounds funny. A look at the sentence and the situation in which this phrase was produced may help here:

- (12) *Kugisi magudina waga kekekita okopo'ula waga dimdim!*
ku-gisi ma-gudi -na waga ke-kekita okopo'ula
 2Ps.-look Dem-CP.child-Dem canoe CP.wooden-small behind
waga dimdim
 canoe white.man

Here the two CPs mentioned above are used to refer to the nominal referent *waga* (note the double classification here). The sentence was uttered by a Trobriand Islander when a big motorboat with a dinghy in tow passed before the reef of Tauwema village. Now, on the basis of this background information, we can translate the sentence as follows:

'Look at this small dinghy behind the motorboat!'

I cannot decide whether the meaning of the CP has influenced or changed the meaning of the classified noun or whether the meaning of the noun has influenced or changed the meaning of the CP, or whether the co-occurrence of the respective CP with the respective noun resulted in an interactive 'Sprachspiel' where both the noun and the CP changed their meaning in and through this interaction (on the phrase level!).

Moreover, I cannot decide, either, whether the act of referring with the CP to the nominal referent here has to be understood as the verbal reference to a language-internal or to a language-external context.

A look at some definitions of 'referent' and 'act of referring' does not help here very much. On the basis of Bußmann's (1983: 428) definition, for example, I can define a 'referent' as an object or a fact in the extralinguistic reality to which noun phrases as verbal signs 'refer'. Under the 'act of referring' I can understand on the one hand the verbal reference to language-internal and external contexts and on the other hand the relation between the verbal expression (name, word, etc.) and the object in the extralinguistic reality to which the respective expression refers. But this definition (like many others) does not help me to solve the ambiguity I mentioned above. Given the fact, however, that I just do not know what is actually going on when a CP refers to a nominal referent, this ambiguity may be not too unwelcome . . .

To conclude, we know that classifiers individualize nominal concepts and that they have meaning. However, the description of this meaning seems to be dependent

- on the position of the respective classifier in the semantic network constituted by the respective classifier system,
 - on the situation and the context in which the CP is used,
 - on the nominal referent to which it refers,
- and
- on the means and ends a speaker wants to achieve and express using a certain classifier (to refer to a certain noun).

How to come up with a definition of the meaning or the various meanings of a classifier is a quite difficult question.

The model I have proposed for the description of the Kilivila CP system is an attempt to present the dynamics of the semantic domains constituted by the described CPs and to formulate language production rules that predict a speaker's choice of a certain CP type to refer to (a) certain nominal concept(s). As mentioned above, these rules are understood as expressing the concept a speaker wants to transfer to a nominal through using an appropriate CP (see Senft 1991: 144–5; 1996). This model presents a network in a linear order (see Senft 1991: 146; 1996). There, all semantic domains are considered to have the same status and quality within the network; there is no evaluation whatsoever of the respective semantic domains that constitute the network. This idea is one-dimensional, indeed; however, it has the advantage that it offers a model of description that can do with a minimum of basic 'axioms': it is only postulated that a number of CPs establish a number of semantic domains that establish a semantic network.

However, one can think of at least two more models that can be developed to come closer to some answers to the crucial questions this first model is aware of but cannot answer properly.

Thus, in a second model we could present this network in a linear, one-dimensional but hierarchical order. Here we assume that the semantic domains are differentiated with respect to quality or status within the network. I have briefly indicated in my research how such a model may look for the Kilivila CP system (Senft 1991: 146ff.; 1996).

A third and much more sophisticated model could present the semantic network in a multi-dimensional hierarchical order (Senft 1996: 326–7). In such a case we would assume that certain semantic domains are located in different levels within the comprehensive hierarchically structured network. This idea – which I can only sketch here briefly – may result in a two- or three- or even multi-dimensional model of description. Following the basic idea of the 'variety grammar'-concept

developed by Klein (1974; Klein and Dittmar 1979; see also Senft 1982) the dimension of the network in this model depends upon the intra- and extralinguistic variables (e.g. speaker's sex, speaker's age, speaker's status, speech situation, etc.) chosen to define the 'hierarchy space' the linguist wants to employ for the purposes of his description of the CP system. With such a multi-dimensional 'hierarchy space' the linguist also defines the degree of the netting complexity (the 'Vernetzungsgrad', to use Vollmer's (1988a: 136; 1988b: 265ff.) expression) of the respective network. That this model is much more complex and needs many more processes of abstraction is evident. I do not want to develop this idea further here, but I will note that such a complex network may well serve as a good starting point for the linguist's attempt to arrive at a description of language production processes which can also simulate the actual decision processes and strategies a speaker follows in producing a certain CP.

2.3.4 Grammaticalization and classifiers

Corbett (1991: 311) boldly answered the question 'Where do classifiers come from?' by stating that 'there is ample evidence that they come from nouns'. I have also speculated about the origin of CPs (Senft 1993; 1996: 352–3) – and I proposed a grammaticalization hypothesis to explain the origin of the CPs in Kilivila. There I assume – a bit more cautiously – that most if not all Kilivila CPs indeed originate in nouns: originally, I suppose, the CP system was constituted by, and consisted of, 'repeaters' – that is 'nouns' that are used as their own 'CPs' – only. In the course of time these repeaters were changed and modified, most often by processes of phonological reduction. These changes, however, are most probably mere consequences of a grammaticalization process that affects the lexical form 'noun' and changes it into the grammatical form 'CP' (or 'classifier') – thus, in Kilivila nouns change category and become CPs. In this process many repeaters were also changed and modified, especially by processes of phonological reduction. With a few CPs this grammaticalization process also resulted in a semantic bleaching, i.e. in a dessemanticization of the former nouns. Among the CPs that are dessemanticized we find most prominently all the repeaters that are now in the process of being superseded by the two general CPs *kve* and *ke* with which speakers can refer to all inanimate referents. In general we can note that CPs which can be traced back easily to the nouns from which they originate are very likely to be superseded by the general CPs or by those CPs whose grammaticalization process is

much more advanced, so that their nominal origin is difficult, or almost impossible, to trace.

As already quoted above, Corbett (1991: 5, 136ff.) also points out that classifiers 'are a source for gender agreement markers'. Thus, there seem to exist linguistic processes that lead from classifier systems to gender systems for nominal classification. This observation closes the circle of problems I want to discuss in this paper – because it comes back to one of the questions already discussed in section 2.1, namely the question of how the systems of nominal classification are (inter-) connected with each other. Although I emphasized there that we do not know very much about these connections between the various systems or techniques of nominal classification, I would like to indulge here in some speculations.

My point of departure for this speculation is the grammaticalization hypothesis on the origin of CPs in Kilivila quoted at the beginning of this section. If we agree that this hypothesis is somehow plausible, it may well be that the grammaticalization processes continue in the following way: if repeaters are changed and modified into classifiers in such a way that their origin as former nouns is no longer traceable, speakers may reinvent 'repeaters' for the classification of (some of) these nouns while the other classifiers – that once also started as repeaters – first get desemanticized and then superseded by the general classifiers. This process of reinvention of classifiers may also imply permanent processes of reclassification of the nominal referents. If the process of reinvention is too fast and the processes of reclassification become too complex, the system may grow to such an extent that it collapses with only the general and a few most important classifiers (like classifiers that classify human and/or animate referents) 'surviving' this system breakdown. And if the grammaticalization process that leads to the loss of the desemanticized classifier is so fast that the system cannot keep its complex inventory, the general and a few most important classifiers again may remain as the only classifiers this language can use for nominal classification purposes. In both cases these remaining classifiers may undergo further grammaticalization processes that may finally metamorphose these formatives into markers for noun classes or gender markers. It seems to me that these grammaticalization processes can only be (more or less consciously) controlled by the speakers of languages with classifiers like, for example, Kilivila who are interested in keeping up the complex system of nominal classification because

of sociological reasons. In Kilivila there are many CPs that serve the function of 'sociolinguistic variables' (Labov 1972: 237ff.). With these CPs members of the highest ranking Malasi-clan mark their status verbally in the socially highly stratified Trobriand society. If the speakers belonging to this clan are interested in keeping up this verbal means of social differentiation, then they will actively work against linguistic processes that may result in the loss of these formatives. However, should they find other means to mark their special role in society – should loan-words from English, for example, take over the role of CPs as sociolinguistic variables in everyday speech on the Trobriand Islands – then the complex system of CPs in Kilivila may indeed be in danger of getting lost and superseded by other techniques of nominal classification.

3 CONCLUDING REMARK

In this paper I have mentioned and tried to illustrate a number of problems that at least to my mind are typical for the research on systems of nominal classification in languages. I am afraid that the paper has proven Royen's (1929: iv) point that the question of nominal classification raises a whole lot of other questions. However, I think that we first have to answer most of these other questions – only some of which I could ask and briefly discuss here – before we will be able to answer the general question we all more or less explicitly have in mind when dealing with nominal classification, namely: how is the perceived world expressed in, and through, systems of nominal classification that are grammatically encoded in various languages?

I assume that all of us who are interested in this question will accept the following considerations that were expressed by Gerlach Royen (1929: 69) as the basis for their ongoing and future research:

Die Sprache ist ein ausnehmend psychologisches Produkt. Die menschlichen Denkgesetze sind überall die gleichen . . . – aber die Ausdrucksweisen können nach Orten und Zeiten von einander abweichen, weil die Sprache ein Geschehen sozial-religiöser Art ist. Ein abweichendes Werthen und Beurteilen der Dinge kann zu einer ganz abweichenden mentalen Einteilung führen, infolgedessen zu verschiedenen Nominalklassen.

H. C. v.d. Gabelentz wies, außer auf den indogermanischen Genusunterschied, auch noch auf die Gruppierung Lebend: Leblos und auf die Bantuklassen hin. Wie sehr sich diese Klassifikations-Systeme auch untereinander unterscheiden, sie seien doch Ausprägungen ein und desselben Geistes.¹⁶

Thus, we may refer anyone who doubts or questions the necessity of researching nominal classification systems in an interdisciplinary way back to Royen as the classic expert in the field. Considering even basic issues in nominal classification requires the co-operation between researchers coming from – at least at first sight – such different disciplines as linguistics, psychology, psycholinguistics, anthropology and – if I may add – cognitive anthropology.

NOTES

This chapter is based on twenty-eight months of field research on the Trobriand Islands in 1982/83, 1989, 1992, 1993, 1994, 1995 and 1996, and on Senft (1996). I want to thank the German Research Society and the Max Planck Society for their support. I also want to thank the National and Provincial Governments in Papua New Guinea and the Institute for PNG Studies for their assistance with, and permission for, my research projects. I express my great gratitude to the people of the Trobriand Islands, especially to the inhabitants of Tauwema; I thank them for their hospitality, friendship and patient co-operation. I also thank the participants of the workshop on nominal classification in Nijmegen and especially Stephen Levinson for insightful comments on my paper.

- 1 Kilivila (also: Kiriwina, Boyowa) is one of the forty Austronesian languages spoken in the area of Milne Bay Province in Papua New Guinea. Typologically it is classified as belonging to the 'Papuan Tip Cluster'-group (Capell 1976: 6, 9; Ross 1988: 25ff.); moreover it is classified as one of the languages with VOS word order (Senft 1986: 107–12). The Kilivila language family encompasses the languages Budibud (or: Nada), Muyuw (or: Murua) and Kilivila. Kilivila is spoken by about 25,000 speakers; the majority of these speakers live on the Trobriand Islands. It was Bronislaw Malinowski who published the first study on the phenomenon on which this paper is based. Ever since Malinowski's classic paper 'Classificatory Particles in the Language of Kiriwina' (Malinowski 1920) Kilivila has been described as a 'classifier language' (Allan 1977: 286ff.). For research on classifiers in Kilivila after Malinowski see Lawton (1980) and Senft (1985, 1986, 1987, 1989, 1991, 1992a, b, 1996).
- 2 See e.g. Royen 1929; Corbett 1991; Craig 1986; Seiler 1986; Seiler and Lehmann 1982; Seiler and Stachowiak 1982; also Rosch 1977, 1978.
- 3 The quote continues as follows: 'as well as alienability, animacy, gender, class and classifier category. Additionally, certain non-inherent semantic parameters are recurrently specified in association with nouns, principally number, distributivity, definiteness, specificity, genericness, quantification, and modification.' I do not give the full quote in the main text at this point of the paper because I do not want to give away too much too early.
- 4 For information on Kilivila see note 1 above.

- 5 For excellent overviews with respect to the various techniques see e.g. Allan (1977), Craig (1986), Dixon (1982a, b), Royen (1929), Seiler (1986), Seiler and Lehmann (1982), Seiler and Stachowiak (1982), Unterbeck (1993).
- 6 For an attempt to establish a typology of classifiers see Craig (1992) and Grinevald (this volume).
- 7 This basic criterion for the definition of noun class systems was already emphasized by Royen (1929: 526): 'Von nominalen Klassen kann man erst dann reden, wenn die mentale Gruppierung der Nomina in der Sprache auf die eine oder andere Weise formal reflektiert wird' ('We can speak of nominal classes only if the mental grouping of nouns is formally reflected within the language in one way or the other' [my translation, G.S.]). It may be argued – from a generalizing (and somewhat simplifying) point of view – that classifier language systems are semantically based while noun class systems are based on formal, grammatical factors. However, this does not imply at all that in noun class or gender systems there is no interplay of semantic and formal factors (see Corbett 1991: 306). Allan refers to languages with noun class systems as 'concordial classifier languages' (Allan 1977: 286).
- 8 Unterbeck (1993), on the basis of her Korean data, adds to the techniques described by Seiler and his group the technique she calls 'transnumber' and justifies this as follows: 'A considerable number of languages neither show systems of classification nor of agreement, Turkish e.g. and other Altaic languages and (already in principle) also English. With respect to "AGREEMENT IN <something> AND NUMBER", these languages are endowed only with a more or less developed "AGREEMENT IN NUMBER" or with NUMBER without agreement at all. Typologically, however, this type of number is fundamentally different in its essence and distinct from number in the classificatory techniques of F[orm]S[ubstance]-fusion: it shows no opposition between singular and plural but rather the contrast of the transnumerical noun and a plural form. The classified noun is a pluralized noun. This type of number belongs to the transnumerical noun and is situated like a transitional zone on the borderline between two zones of contrariant internal organization, viz. CLASSIFICATION and AGREEMENT and shall therefore be called TRANSNUMBER. This type of number performs APPREHENSION by causing individualization' (Unterbeck 1993: 318–19).
- 9 Moreover, we find 'classifiers' in ASL, the American Sign Language (see e.g. Klima and Bellugi 1977: 13–15, 191–2; Kantor 1980; Newport and Supalla 1980; Kegl and Schley 1986; Supalla 1986); Egyptian Hieroglyphics and Mesopotamian Cuneiform have graphemic classifiers (Rude 1986).
- 10 In Senft (1992a: 77 and 1992b: 15f.) I mentioned that Kilivila numerals are more and more replaced by English numerals. English numerals are adopted as loans in such a way that they agree with the inherent segmental constraints in Kilivila word formation. For example, 'two' becomes *tu*, 'three' becomes *tiri*, 'first' becomes *pesila*. These loans do not combine with any classifier whatsoever. If this fundamental language change in progress

continues we may be left with a so-called 'numeral' classifier language that employs its classifiers only in deictic and anaphoric expressions and with some adjectives!

- 11 For general definitions of the concepts 'classifiers, noun classifiers, nominal classifiers' see e.g.: Allan (1977: 285); Becker (1975: 114–15); Benton (1968: 137); Berlin (1968: 20); Burling (1965: 449); Denny (1979: 97); Nguyen (1957: 124); see also the contributions in Craig (1986); also Mufwene (1980: 1025).
- 12 To give examples from Kilivila: in the expression

- (i) *bogitala bogi*
bogi-tala *bogi*
 Classifier.night-one night
 'one night'

the classifier *bogi* is identical with the noun *bogi*. Other noun phrases with repeaters (underlined in adjectives, numerals, and demonstratives) are, for example,

<i><u>dob</u>amanabiweta doba</i>	'beautiful grass-skirt'
<i><u>maked</u>ana keda</i>	'this road'
<i><u>kova</u>lima kova</i>	'five fireplaces'
<i><u>liku</u>weaka liku</i>	'big yamshouse'
<i><u>megw</u>abogwa megwa</i>	'old magic'
<i><u>pwan</u>inatata pwanina</i>	'one hole'

(see Senft 1993: 103). In connection with this phenomenon, Lehmann (1979: 169) hints at the possibility of studying this problem from a different point of view; he notes: 'a classifier can also function as an independent noun'. See also subsection 2.2.4 below.

- 13 As already mentioned in subsection 2.2 above, I have described 88 CPs in detail (Senft 1996); however, so far 177 CPs have been documented for Kilivila (Senft 1996: 171–9; Lawton 1980). Moreover, for stylistic reasons we also can observe ad hoc formatives in Kilivila, where nouns are used as 'CPs'; thus, the Kilivila system of CPs can be regarded as an open system – at least in principle.
- 14 I want to note here that apparently no classifier language has a colour classifier (see Adams 1989: 5; Allan 1977: 297; Asmah 1972: 94; Berlin and Romney 1964: 80; Carroll and Casagrande 1958: 27ff., 31; Lee 1987: 397; but see also Royen 1929: 151). My research on Kilivila comes up with twenty semantic domains (see below).
- 15 In my analyses of the Kilivila CP system (Senft 1996: 288) it turned out that roughly a fifth of the 88 CP types I described as constituting the twenty semantic domains (mentioned in note 14) are decisive for the domain-connecting dynamics of this linguistic phenomenon.
- 16 'Language is an exceptionally psychological product. The laws of human thinking are the same everywhere . . . but the expressions (of thought) can differ from each other according to places and times, because language is an event of a social-religious kind. A different evaluation and judgement of

things may lead to a completely different mental classification and thus to different nominal classes.

H. C. v. d. Gabelentz referred not only to the Indo-European gender difference, but also to the Animate: Inanimate differentiation in Bantu classes. [He argues that] although these classification systems are very different from each other they are nevertheless expressions of one and the same mind' (my translation, G.S.).

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