

CLASSIFIERS IN STANDARD THAI:
A STUDY OF SEMANTIC RELATIONS
BETWEEN HEADWORDS AND CLASSIFIERS

by

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ABSTRACT

Standard Thai classifiers have never been studied exclusively and comprehensively. That is, they have been included in grammars of the entire language and are usually discussed by giving a few examples. Specific papers usually deal with some particular aspect of classifiers exclusively.

The criteria of classification by a given classifier are a puzzle in many cases. Often there are obvious semantic criteria of classification, and obvious syntactic criteria as well. The relation between semantic and syntactic criteria of classification is unclear. Equally unclear is the relation between headword and classifier, a relation which is the basis of the criteria of classification.

In this study, a near-complete list of Thai classifiers is drawn from the Thai-English Student's Dictionary by M.R. Haas (1965). A semantic definition of classifiers is provided and various categories are described.

The first category is Repeaters. Members of this category are found to be one-place predicates.

A second category is Partial Repeaters and these are found to have a relationship of hyponymy with the headword.

Measures are another important category, divided into Standard Measures (exact non-entities) and Temporary Measures (inexact units used as measures according to the intention of the speaker).

The remaining category is found to contain non-compound-

able classifiers of two types: those with very general referents (size, shape, etc.) and those classifiers in various stages of decreasing semantic equivalence with the sense of the same form as full substantive noun. The former type is labelled "General Units", the latter "Extended classifiers".

Extended Classifiers are seen to be of two types: those with a single sense (or apparently "meaningless") and those with several senses, only some of which qualify as Extended Classifiers.

The apparently meaningless classifiers /lēm/ and /an/ do not occur as substantive nouns at all. The complete collection of nouns classified by each of these two classifiers (according to Haas 1965) is made and each class is examined for common semantic features. On the basis of comparative information from neighbouring and related languages, various possible criteria of extension are established for /lēm/, and a basic sense equivalent to "sickle" is indicated by the data.

The case with /an/ is rather different since its extensions are much wider and a larger number of nouns is classified. Based on prominent compounds classified by /an/, a basic sense of "stick" is hypothesized for /an/ and the possible paths of semantic extension are suggested.

Finally, a "meaningful" Extended Classifier (/tua/, "body") is examined. The sense attributed to this form by native speakers when it functions as a full substantive noun becomes a factor in choosing the sense "body-shape" as the

basic sense with classifier function.

In concluding remarks, suggestions are made about the applications of the method and results of this paper to lexicography and semantic reconstruction in Thai and languages of the area. The necessity of further phonological, historical and ethnographic information is stressed.

Signature of Supervisor:

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1.0 INTRODUCTION

1.1 AIMS

This paper focuses on a particular syntactic phenomenon in Standard Thai commonly called "noun classifiers". The original aim was to examine the semantic distinctions among the members of the entire category. This required a definition according to which classifiers could be distinguished from other syntactic types. It was found that a semantic definition more accurately distinguished the classifier function from other functions.

A review of the literature on Thai classifiers showed that most traditional writers on the subject (Poosakritsana 1960, Silapasarn 1968, Sirijaroen et al 1974) had essentially the same sub-categories of classifiers:

- (i) shape, appearance
- (ii) condition, position
- (iii) kind, type
- (iv) groups
- (v) measures

Other analysts, using strict structuralist criteria (Noss 1964) Generative-Transformational theory (Warotamasikkhadit 1970) and componential analysis (Denny, personal communication) were found to contain similar categories, and many of the additional categories that these analyses featured were based on relatively arbitrary criteria. Those classifiers which are identical in form to their headword (called "Repeaters" here) are mentioned by some writers, not at all by others.

Generally, traditional and semantic analyses tended to ignore obvious syntactic differences, structuralist

grammars to ignore semantic relations, and no approach explained clearly the actual processes involved. A summary of the shortcomings of most descriptions is as follows:

- (i) inadequacy of categories: not all classifiers are accounted for
- (ii) overlap of categories (although this is probably inevitable)
- (iii) confusion of semantic and syntactic criteria and failure to relate the two; especially failure to supply a semantic significance for repeaters and partial repeaters (classifiers with a form identical to part of a compound headword)
- (iv) arbitrary selection of criteria of categorization
- (v) failure to relate divergent senses of a single form as full substantive noun, as noun compound member, and as classifier
- (vi) failure to relate different senses of a single classifier; especially to specify the base sense and the dimensions along which the different senses are related.

That it has not been possible to continue the investigation in purely semantic terms is a direct result of the necessity of at least attempting to clarify the matters listed above. Since it is not feasible to examine the structure of the category of classifiers on a purely semantic basis (thereby ignoring the obvious syntax-based categories), the next four sections of this paper will deal with

- (i) Repeaters (section 3)
- (ii) Partial Repeaters (section 4)
- (iii) Measures (section 5)
- (iv) "True" Classifiers (section 6)

Measures, however, are defined primarily by semantic criteria. "True" Classifiers are in fact simply the residue; that is, they are classifiers which are not Repeaters, Partial Repeaters or Measures. They will be examined in detail and at least two sub-categories extracted.

What categories and relationships exist between classifi-

ers on a purely semantic level will have to be considered subsequent to an examination of the interaction of semantic factors and the syntactic categories listed above. This interaction is summarized in Figure 5, p. 113. Thus this thesis does not actually deal with semantic distinctions between classifiers themselves. There is only enough time and space here to suggest further applications and areas of research beyond the basic conclusions reached in section 8.

A second area of interest was the relationship between language and the "real world", in terms of human perception and cultural values and distinctions. The emphasis on the semantic aspect and on the "real world" basis of language gave rise to two basic hypotheses, as follows:

- (i) categories of classifiers, whether syntactically or semantically distinguished, will have semantic defining criteria.
- (ii) the criteria of classification can be traced to basic perceptual and/or cultural factors.

It was also felt that there should be some relationship between the criteria used to group words under one classifier, the criteria used to categorize the various types of classifiers, the criteria of semantic extension, and the principles of noun compounding.

1.2 METHOD

As mentioned above, the literature on Standard Thai classifiers was studied first. Various categories were noted, as well as the criteria used to establish these categories, where such criteria were evident.

The data base was the nouns furnished with commonly co-occurring classifiers in the Thai-English Students' Dictionary

by Mary R. Haas (1965). This was supplemented by information and opinions from native speakers and definitions from the Thai-English Dictionary by G. B. McFarland (1969) and the Thai-English Dictionary of S. Sethaputra (1972). Other dictionaries were consulted for specific words.

The basic list of classifiers culled from Haas 1965 was grouped according to syntactic category and a semantic criterion was sought for each category. This method isolated a group of classifiers which are the most commonly-occurring and in some cases the most perplexing, due to the wide semantic range of nouns they classify. There were only two classifiers which did not enter into any compounds and which informants could not supply a satisfactory meaning for. These were the classifiers /lêm/ and /an/. An examination of the nouns classified by these two items (according to Haas 1965 and other sources) led to the application of a kind of componential approach to the analysis of the process of semantic change responsible for the odd range of nouns in each class. In the case of /lêm/, possible criteria of extension were established using comparative information from neighbouring and related languages. The members of the class of /lêm/ were then compared to find the most likely basic sense. In the case of /an/, extension was seen to proceed in a chain-like fashion and the size of the class was much larger. Only a rough hypothesis of the basic sense and the paths of extension was outlined.

This method was then applied to another common classifier which also classifies a seemingly unrelated group of nouns but which enters into compounds and has a semantic value when

functioning as a full substantive noun. This item is /tua/ "body". It was chosen simply as an example; there are many other items of this type in Standard Thai.

The final result was hypotheses about the semantic structure of the three classifiers examined, with implications for the study of historical semantic change.

1.3 THEORETICAL BASIS

In terms of currently-debated formal theoretical positions, this paper could be said to have no theoretical basis at all. Nevertheless there are definite areas where assumptions made or methodology relied on are characteristic of certain "schools" or of general and informal theoretical positions.

One principle adhered to in this paper can best be stated by noting a distinction often drawn in linguistic analysis between "God's truth" and "hocus-pocus" (e.g. see Burling 1968), the first expression referring to linguistic analysis that is strictly data-based, and the second to analyses which allow greater degrees of abstraction in the linguistic model of the language phenomenon being studied. The aim and orientation of this paper are definitely within the first approach. An attempt is made to justify all important units and relationships in the syntactic categories and semantic structures proposed below. Justification for semantic distinctions is sought in similar semantic analogies made in other areas of the vocabulary of Thai, or at least in the vocabularies of related and neighbouring languages. It is felt that the information presented is use-

ful enough and the informal description clear enough that those who wish to propose formal rules will be able to do so.

Other informal theoretical positions are indicated by the two hypotheses mentioned on page 3. I consider semantics and phonology to be the two aspects of language which are the most basic because both of these aspects have real-world manifestations: semantics through a psychological aspect, phonology through a phonetic aspect.

The emphasis on perception and culture is based on consideration of what Lyons (1977:440) calls the "ontological basis" of language. Lyons points out that

...the possibility of identifying entities, properties, actions, relations, etc. independently of the way in which they are referred to or denoted in particular languages ... presupposes the acceptance of some neutral ontological framework.

This framework is built up of the categories Lyons mentions. He continues (p. 442):

We obviously cannot operate with categories of this kind without making some minimal ontological assumptions: i.e. assumptions about what there is in the world. The ontological assumptions that we will make (and we will take them to be minimal and relatively uncontroversial) are those of naive realism.

The viewpoint of naive realism is an important one, I think, since it is a safe assumption that the original and basic distinctions in a language were made by people and societies who relied solely on a "naively realistic" view of the world. In a similar vein, Lakoff (1977:236-7) also refers to insights to be gained about "natural facts" if the investigator would "step outside of formal theories".

The universality of an ontological basis in naive real-

ism is, of course, not easily established. However, I would like to relate the notion of naive realism and the notion of human perception as a basis of linguistic structure. A perceptual basis of language grounds it in universal human psychology and physiology.*

Classifiers themselves have some claim to universality. Classifier use is widespread in world languages and the similarities between semantic classes (especially those based on a criterion of shape) in classifier languages in Asia, noun-class languages of Australia and Africa and "classificatory verb" languages of North America is striking and has been commented upon by many of the grammarians who have written on classifiers (see Lyons 1977, Allan 1977, Friedrich 1970, Denny 1976 etc.). This makes classifiers, if not truly universal, then at least of greater than intra-language significance. There are also clear semantic parallels to be found in non-classifier languages, such as "sheet of paper" in English. Waldron (1976:132) notes how easily shape-words in English (e.g. brick, ball, stick, etc.) can be applied to anything of the appropriate shape, regardless of composition.

* See Lenneberg (1967:356) on similarities in comparative studies in the "language of experience", and Rosch (1973:143) on perceptual salience as a factor in forming central examples from which classes develop. Friedrich claims (1970:403) that shape is a "semantic primitive", although not necessarily perceptually based. Gibson (1950:205) found that spacial aspects are among the most primitive concepts retained in cases of "psychic blindness" (visual agnosia). It is "generally accepted", according to Lyons (1977:247) that there "are perceptual and cognitive predispositions to acquire linguistically pertinent distinctions of sound and meaning". He also notes that even allowing for biological and historical universals, there is a great deal of structure remaining free to vary between individual languages.

The most remarkable evidence of the universality of classifier classes is the cross-language semantic correspondence between classifier classes and children's over-extensions, as pointed out by E. V. Clark (1973:79ff.). Other writers have pointed out similarities between cognitive development and semantic categorization (see Lenneberg 1967:332, for example).

In view of this near-universality of classifier classes and of perceptual parameters, I think it is not a controversial assumption to consider classifier classes to be based in the perceptual salience of various characteristics of physical objects.

This perceptual salience, however, must be mediated by cultural salience and by some kind of metaphorical extension to referents which are not objects. Cultural salience is based on significance in the technology, life-support system and belief-system of a society (see Denny 1974, 1976a, and especially Lenneberg 1967). Lyons (1977:248) refers to the "superimposition" of cultural salience on a biological hierarchy. Gibson (1950:213) found "overwhelming evidence to show that meanings react upon their perceptions to select or modify the spatial properties (color, size, outline) and that these properties therefore depend upon the personality and the culture of the perceiver." Allen (1977:296-7) concludes similarly that "It may be true that most noun classes have been established on a perceptual basis; but presumably most classification is fossilized by conventions that restrict innovation."

Denny relates the complexity and number of categories

directly to the level of technology of the culture. He gives examples of tribal people who do not have rigid flat classes since their technology does not involve planks, bricks, or such shaped materials (1976b:127). He also refers to a paper by Silverman on Gilbertese which posits "means of sustenance" as a possible core meaning for a class in Gilbertese which includes fish-hooks, plots of land and trees. If this is correct, ecological variables play an important part in classification as well. Dixon (1968:120) notes that Dyirbal classifies birds as female for mythological reasons.

Cross-language hierarchical principles of classification have been posited by various writers as well, but Becker (1975:112) argues that the organization of classifier systems is paradigmatic, not hierarchical. That is, the position of a given item in a given structure is defined by the relationships of that item to all other items in that structure, rather than by its relationships to superordinate and subordinate items only. This issue will not be dealt with here directly, as it is considered beyond the scope of this paper. Some implications are pointed out, however, in section 8. Generalizations about Thai cultural values are also restricted, since the relationship between language and culture is a notoriously complex one.

1.4.0 TERMINOLOGY AND CONVENTIONS

In Standard Thai, classifiers occur in close juncture with numerals, demonstratives, descriptive adjectives, relative clauses and other terms used to specify individual enti-

ties, units and amounts. There are two basic word orders which occur, one with numerals, and the other with the other environments mentioned above. The combination of classifier (CLF) plus numeral (NUM) appears in the classifier phrase HW + NUM + CLF where HW stands for "headword" (usually a noun). An example is

- 1.1 [✓]maa [✓]sāam tua
 dog 3 BODY-SHAPE "three dogs"

The other basic word order is exemplified by

- 1.2 [✓]maa tua dam
 dog BODY-SHAPE black "a black dog"

The basic elements here can be symbolized by HW + CLF + I where I represents the specifying categories of demonstratives, descriptive adjectives and relative clauses. These can be referred to as "Indicators" after Haas (1942).

Reference to salient characteristics of the shape of objects follows Denny (1976a) and others. The symbols used are: S1D - saliently extended in one dimension

S2D - saliently extended in two dimensions

S3D - saliently extended in three dimensions.

These were found preferable to simpler terms like "long thing, flat thing", or "round thing" since these latter expressions often obscured distinctions such as horizontality v.s. verticality, for example, and sometimes over-restricted a class which included square shapes with "round" things. For example, in Thai both round fruit and dice are classified with /lūuk/ "S3D shape".

1.4.1 TERMINOLOGY

As carefully as possible, I would like to use the following terms with the senses given below:

- (i) classes of headwords -as determined by co-occurrence with a given classifier in a typical classifier phrase. For example, all nouns for animals of any kind, for body-shaped articles of clothing and for tables and chairs are in one class because they can occur with the classifier /tua/. It is only practical to refer to the results of classification as classes. The extent, composition and criteria of membership of classes is an empirical matter.
- (ii) categories of classifiers -as provided by various linguistic analyses. Some categories mentioned already are Repeaters and Partial Repeaters, as well as Measures. The extent, composition and criteria of membership in categories is a theoretical matter.

Other terms with meanings specific to this thesis are defined or explained when introduced. Terms which are not explained are to be considered as used with their non-technical sense, for example the term "implication".

1.4.2 PHONOLOGICAL SYMBOLS

The symbols used to represent Thai words in a broad phonetic transcription are similar to those originally used by Haas (1942) and widely used by those who study the Tai languages:

TABLE 1
Phonological Inventory of Standard Thai

Consonants:						
Manner	1.	2.	3.	4.	5.	6.
STOPS: vless.	asp. ph		th		kh	
	unasp. p		t		k	ʔ
vd.	unasp. b		d			
AFFRICATES	asp.			ch		
	unasp.			c		
FRICATIVES		f	s			h
NASALS	m		n		ŋ	
FLAPS			r			
LATERALS			l			
SEMIVOWELS	w			j		
Vowels:						
Height	FRONT	CENTRAL	BACK			
HIGH	i, ii	ɨ, ɨɨ	u, uu			
MID	e, ee	ə, ɜɜ	o, oo			
LOW	æ, ææ	a, aa	ɔ, ɔɔ			
Tones:						
	˘ low		ˆ falling			
	˙ high		˘ rising			

Places of articulation:

1. bilabial
2. labiodental
3. alveolar
4. palatal
5. velar
6. glottal

Mid tone is unmarked. The glottal stop is not considered distinctive and is included in some examples only for convenience in identifying the item. Suprasegmental phenomena other than tones, such as stress, juncture, and intonation are not represented except where relevant to the point being

discussed. In fact the only case where representation of these distinctions is necessary is the use of a comma, glossed as PAUSE.

1.4.3 GLOSSES AND TRANSLATIONS

In general, glosses are intended as a kind of morphological breakdown, provided for the convenience of the reader, and not intended as comprehensive definitions of the forms used in the examples. Glosses are also used to try to show semantic differences between constructions and individual lexical items. They are written directly below the phonetic transcriptions of example sentences. Translations given in quotes directly to the right (or below) the glosses are loose equivalents and intended to convey the sense of the entire sentence without departing too much from the morphological breakdown. The translations are also used to try to illustrate the differences being shown in the examples.

Following Adams and Conklin (1974) glosses of classifiers will be given in capitals. This is useful especially in repeating classifier phrases where the form which appears in the function and position of classifier is lexically identical to all or part of the headword.

To show morphological divisions in examples in the running text, a plus sign "+" will be used. Generally, and where possible, quotes will be used to indicate the sense of an item, slashes to indicate the broad phonetic form and underlining to refer to the form in general (as opposed to the meaning).

Where the exact content of a definition is crucial to

the point being discussed, definitions are footnoted. Otherwise all definitions are my own responsibility.

2.0 DIFINITION AND SELECTION OF CLASSIFIERS.

Allan (1977:285) sees two basic criteria for the definition of classifiers: (i) they occur as morphemes in surface structures under specifiable conditions, and (ii) they are meaningful: they denote salient or imputed characteristics of the entity to which an associated noun refers (or may refer). Clearly, these two criteria are (i) structurally syntactic, and (ii) semantic. Most of the definitions in the literature on classifiers to date have been syntactic -that is, most of the statements that can be considered proper definitions. If we compare Allan's two statements, we see that the syntactic approach has a more precise and definite ring to it, while the semantic statement seems more like a mere general description. Nevertheless, I believe that it is the semantic definition which captures the true functioning of the classifier, although it may not provide the best means of identifying members of the category.

2.1 SYNTACTIC DEFINITIONS

Nùng is a Tai language spoken in North Vietnam. In her description of classifier constructions in Nùng, Saul (1966: 278) defines classifiers as those forms that can fill the CL slot in the Nùng classifier phrase: NUM-CL-HW-MOD, where MOD is a modifier.

Jacob (1965:145) identifies Khmer classifiers by their occurrence after numerals in close juncture. classifiers are defined quite similarly by Noss (1964) in the most comprehensive study of Standard Thai. Like Jacob, he uses both word order and phonological criteria to define classifiers

as "substantives occurring with weak stress directly before, and in construction with, demonstratives" (Noss, p. 104).

Classifiers do occur with normal stress, as do pronouns. But it is the classifier phrase (usually with head noun deleted) which substitutes for the antecedent, not the classifier alone. Furthermore, the occurrence of classifiers with normal stress is limited to cases where the numeral "one" is deleted.

The primary problem in defining classifiers precisely is to distinguish them from pronouns. Certain pronouns can function as classifiers in many contexts: e.g. /thán/ "respected person, /naaj/ "person-in-authority". Any definition of classifiers must resolve the problem of making this distinction between classifiers and pronouns. Greenberg stresses the fact that the classifier phrase (quantifier + CLF) constitutes a "modifying phrase which serves as comment to the head noun functioning as topic" (1975:41). One immediate problem with this is the occurrence of classifiers in environments other than the classifier phrase: when modifying verbs, for instance, or in constructions with /pen/ "be" and /lá?/ "each;per". Allan's criterion (ii) above also depends on an "associated noun", and this leads him to argue against Berlin's analysis (1968) of Tzeltal classifiers for actions of blinking, stabbing, etc. Allan's objections to such classifiers are weakened by his own acceptance later (1977:307) of classifier phrases modifying verbs in sentences where an abstract head noun (such as the words for "time", "distance", "weight" etc.) has been gapped.

To be acceptable, definitions like Noss's and Allan's would have to be rephrased to refer to headwords in general, rather than nouns. There remains the problem of classifiers occurring with classifier function in constructions with no apparent headword at all.

Of course, definitions of classifiers which are based on occurrence in a classifier phrase or with a head noun can be supported if it can be shown that a given lexical form found in other environments can also occur in the specified environment. In fact, this is the most convenient way to check the form-class of a lexical item.

Alternatively, as part of a structuralist grammar, all classifiers could be listed in the lexicon, to avoid the necessity of checking each doubtful form in the appropriate sentence-frame. Haas has provided such a listing in her 1965 dictionary. That is, she gives the classifier which commonly occurs with a particular noun. But she does not give a succinct definition of classifiers nor does she outline her criteria for selection of the classifier given, or for listing nouns as unclassified.

We can consider these two structuralist techniques as constituting two different types of definition. Lyons (1977: 291) has described two such traditional types: (i) definition by extension (listing all the members of a class) and (ii) definition by intension (listing all the common properties of a class). The drawbacks of an approach like Haas's are the lack of an overall intensional definition on the one hand, and the lack of a comprehensive list of the members of the

class on the other. "There has not been anyone who has attempted to compile the complete list of classifiers in Thai" (Warotamasikkkhadit 1972:23). Such a list would in fact constitute an extensional definition and is, in fact, a by-product of this thesis. However, with "marginal" classifiers like repeaters, the powers-of-ten group, pronouns which can function as classifiers, temporary measures like /kammiɨ/ "handful" limited classifiers like /phráp/ "moment" (discussed below) and the general classifiers which classify potentially and nouns, it is clearly necessary to impose strict defining criteria on the form-class in order to provide a definite number of forms which would constitute the extensional definition. Thus we see that the two types of definition are interdependent.

Syntactic definitions offer little insight into the head word - classifier relationship beyond establishing categories of classifiers (as Noss does) based on the distribution of classifiers and head words. However, they provide handy reference points for locating classifiers and judging the status of questionable items. For example, by the semantic criteria suggested below /phráp/ "a flash; a moment" is a classifier. If the verb is accepted as the headword in the following example, /phráp/ seems to fit into a classifier phrase:

2.1. kháw maa phráp diaw
 HEAD + CLF + I
 he come MOMENT alone
 "He came for only a moment"

However, by other syntactic criteria /phráp/ is rejected as a classifier. The examples below show that it cannot occur with numerals or with other indicators.

- 2.2a *kháw maa $\begin{cases} n\grave{a}ŋ \\ s\check{o}oŋ \end{cases}$ phráp
 he come $\begin{cases} one \\ two \end{cases}$ moment
- 2.2b *kháw maa phráp $\begin{cases} n\grave{a}ŋ \\ s\grave{a}n \\ th\grave{i}i s\check{o}oŋ \end{cases}$
 he come moment $\begin{cases} a \\ a \text{ short} \\ a \text{ second} \end{cases}$

In fact it occurs only in the fixed phrase with /diaw/.

There are a large number of such words which are called "limited" classifiers and are not considered in the categorizing which follows.

2.2 SEMANTIC DEFINITIONS

Semantic definitions are not limited to occurrences of classifiers within specific environments. An additional advantage, noted by Denny (1976:131) is that significant cross-language parallels would not be obscured by definitions based on function rather than distribution. These parallels are between criteria of classification and also between the types of speech-situation requiring the use of classifiers. Unrelated languages often have very similar classes, and the situations of listing, enumerating, serial counting, specifying, etc., seem to be required in most cases as well. These cross-language generalities could be captured despite wide variations in morphology. The similarities between classifier categories over a large number of unrelated languages has impressed many of the linguists investigating classifiers.

"The strongest evidence of semantic classification is

the ability of native speakers to classify new objects consistently and easily on the basis of their observed characteristics" (Allan 1977:290). Allan cites a list of languages where this ease of original classification has been reported. It includes Burmese, Dyirbal, Fula, and Navaho. Examples of Thai novel classification are relatively rare: satellites are classed as /duan/ "round or radiant spots"; automobiles as /khan/ "long handle" (like most wheeled vehicles); airplanes as /lam/ "trunk; passageway" (like boats). Most pieces of complex machinery are classed as /khrîan/ "machine" or as /an/ (the general classifier).

Allen also stresses the simple fact that classifiers have meaning and can be discussed in many (but not all) classifier languages by native speakers. Thai speakers are able to discuss Thai classifiers but this is probably due to the fact that most Thai classifiers also do duty as nouns. The only name I have found in Thai grammar for classifiers as a form-class is the functional description /lâksana`naam/ "a word to tell the characteristics of a noun". There are several classifiers which are difficult for Thais to gloss, and at least 2 which classify such a wide range of nouns that they cannot be assigned meanings at all by many speakers. These two are examined in section 7.

We have noted that Thai classifiers occur in environments both in and out of the classifier phrase. The common factor in all occurrences is the function of the classifier in providing unit reference in situations of enumerating, indicating, contrasting or emphasizing a particular aspect of the

referent. That this is the basic function of classifiers in Thai I shall take to be self-evident, since all the examples I can find exhibit it. That classifiers in Thai provide unit reference is clearly the opinion of Noss, who emphasizes that the meaning of unit classifiers is "one of this kind" (1964: 106). Adams and Conklin too allow that while a classifier may have an additional descriptive semantic load, it "often has 'unit' as its main force" (1975:13). They also state (1975:11) that classifiers have a specifying function but that evidence for such functions is difficult to obtain: "It is almost impossible to get data which unambiguously demonstrates the classifier as a specifier." They argue that enumerating also necessarily involves specifying, a relationship I find only reasonable. They do have clear examples showing a singularizing function, however.

Singularizing, specifying and enumerating are all compatible with the notion of unit reference.

As a semantic definition, then, we can use the criterion of provision of unit reference. Pronouns and proper nouns, however, also provide unit reference:

- 2.3 kháw cà paj
she Fut go "She'll go."
- 2.4 sǒmchaj cà paj
Name Fut go "Somchaj will go."
- 2.5 nákrían khon nǎj cà paj
student PERSON a Fut go
"A (certain) student will go."

But whereas 2.3 and 2.4 are definite, 2.5 is not. This is demonstrated by the redundancy of 2.6 and 2.7, but not 2.8:

- 2.6 *kháw khon níi cà paj
she PERSON this Fut go

2.7 *sómchaaj khon níi cà paj (assuming only one per-
 Name PERSON this Fut go son named Somchai is
 considered.)

2.8 nákrían khon níi cà paj
 student PERSON this Fut go "This student will go."

This of course parallels the defining criterion of occurrence with demonstratives used by Noss. Non-definite reference, then, may be a criterial part of the function of classifiers. However, Adams and Conklin (1975:11) state that with Indicators the classifier may "single out the noun for attention in a deictic-like process and definitize". This conflicts with the conclusion arrived at above. Adams and Conklin admit that they "have no single examples which clearly demonstrate definiteness as the classifier's function".

Following Chafe (1976:39) I will take definiteness to mean an assumption on the part of the speaker that the hearer is able to identify the member of a category which the speaker is referring to using a definite noun. Even furnished with a definition of definiteness, the concept is still extremely difficult to pin down. Nevertheless, some facts can be illustrated. Looking at the examples given of indefinite classifiers we should try to separate the semantic contribution of the classifier itself from that of the Indicator. Generally we can consider adjectives to be more neutral in this issue than ordinal numerals and demonstratives (which are quite definite) or /náŋ/ following the noun (quite indefinite). If an adjective is substituted for /náŋ/ in example 2.5, the result is

2.9 nákrían khon lǝ̀ cà paj	a.	{ "The }	handsome students
student PERSON handsome		{ "Some }	will go."
Fut go	b.	{ "A }	handsome student will
		{ "Some }	go."

As the alternate translations show, 2.9 could be a definite or indefinite sentence. Choice of either alternative would depend, for example, on the kind of question asked, to which 2.9 could be used as an answer:

2.10 khon năj cà paj
person which Fut go "Which person will go?"

2.11 khraj cà paj bâaŋ*
who? Fut go some "Who (in general) will go?"

2.9a answers 2.10 and 2.9b answers 2.11.

In introducing 2.10 and 2.11, we have introduced a new variable, the "pronoun substitute" function attributed to Thai classifiers (Adams and Conklin 1974:9). To eliminate this 2.9 can be imagined as occurring at the beginning of a conversation where "group of students" is given information for the hearer, but "group of handsome students" is not. Even in such a situation informants state that it is unclear whether the speaker would expect the hearer to know exactly which handsome students were being referred to. Thus the distinction between definite and indefinite is not clear to native speakers.

Evidence from occurrence versus non-occurrence of classifiers seems to give more weight to the claim of definiteness. Compare

2.12 khăw mii mǎa jàj sǎam tua
he have dog big 3 BODY-SHAPE

2.13 khăw mii mǎa tua jàj sǎam tua
he have dog BODY-SHAPE big 3 BODY-SHAPE
"He has three dogs, big ones."

* Haas (1964:287) notes that "When /bâaŋ/ occurs at the end of a question, it suggests that more than one item is expected to be mentioned in the answer..."

For some informants, 2.13 has an implication that the dog owner may have other dogs, smaller ones. Contrastiveness implies that the speaker assumes the hearer has a definite preference from among a limited set of choices for a given slot in a statement. This in turn makes it more likely that the hearer will be able to identify the contrasted item, although not necessarily so. But at least both speaker and hearer are conscious of the same range of possibilities. Thus I think that a contrastive function makes a definitizing function more likely.

Ultimately the matter must rest with the following summary: some occurrences of classifiers do seem to have a definitizing effect. This appears to be a secondary effect which results from a contrastive effect and an anaphoric function. It may also be limited to more formal usage: for example 2.13 is considered to be more formal than 2.12. In other cases (the majority) classifiers provide indefinite singular unit reference.

It is also desirable to be able to distinguish when a form is functioning as a classifier and as a full substantive noun. We should then add to our definition of classifiers something to cover this. Classifiers provide unit reference to some other entity, whether it is overthly expressed by a headword or not. This fact may be the criterion needed. When a form has substantive noun function (as does /khon/ in 2.10) or predicate function (as does /tua/ in 2.14 below) it does not occur with a headword. Consider the following example:

- 2.14 dèk tua lék
child body small "That child is small."

It might be argued that /dèk/ "child" in 2.14 is the headword, but this is not so. The form /tua/ must be functioning as a full noun (part of the predicate "to have a small body"). It cannot be functioning as a classifier because /khon/ "person" is the proper classifier and the use of /tua/ to classify humans (barring conscious insults) constitutes a categorical error:

- 2.15 *dèk tua lék cà paj
child BODY-SHAPE small Fut go

In other cases forms occur without headwords and yet their function is to provide unit reference to some mass, commodity, event or object which is not overtly expressed but which must be assumed to have been deleted for various reasons. An example with /pen/ "be" is given below in section 3.2 (example 3.10)

In order to distinguish between function as classifier and function as full substantive noun, the grammarian will have to take into account whatever discourse or anphoric factors require this first entity in a semantic structure containing classifiers. At any rate, in example 2.14, the relationship between the full substantive noun /tua/ and /dèk/ "child" is clearly not the same as the relationship between the classifier /khon/ "person" and the same headword in

- 2.16 dèk khon lék
child PERSON small
"a small child".

Thus with "limited" classifiers like /phráp/ "moment"

(examples 2.1 and 2.2 above) and with predicate and full noun function for forms which also function as classifiers, it is necessary to resort to distributional criteria to provide a practical working definition of classifiers. In fact the general rule of thumb used was occurrence with a numeral in a typical classifier phrase, accompanied by vigilance against limited classifiers and predicate or full nominal function. Note that the semantic definition is accurate enough, simply not practically useful enough.

2.3 CLASSIFIER SELECTION

At least for those classifiers which have a specific semantic relationship with the noun classified, it has proven possible to isolate semantic features within the noun classified, features which govern the selection of classifiers. Gething (1968:817) found, in a semantic set of 10 morphemes used to specify the ranks of Thai Buddhist functionaries, that he was able to subsume all the common features under [+ Buddhist] and the dimension of relative status. The first 5 morphemes of the set take the classifier /on/; the others, /khon/. The chief semantic correlates for this dichotomy are to be found in (i) the number of religious precepts the functionaries vow to observe, and (ii) the degrees of relative status.

In this study, then, Gething has been able to isolate distinctive components in the nouns classified which can be used to differentiate two classifiers semantically. Gething (personal communication) points out, however, that his find-

ings cannot be applied to classifier selection too widely, since a feature something like [+ 227 precepts], used to differentiate /on/ and /khon/ cannot serve to specify the selection of /on/ as classifier of nouns referring to inanimates. The inanimate objects classified by /on/ are revered things like holy relics, images of Buddha and stupas.

Multiple classification of a single noun by several different classifiers also presents a problem to the explanation of classifier selection, since the choice of different classifiers must be determined by the same noun. This problem is further complicated by the fact that most classifier languages, including Standard Thai, have a "wastebasket" classifier, used for objects with none of the commonly used salient characteristics and for objects of uncertain classification. This classifier thus becomes another alternative for the speaker to select.

It is usually considered an essential step in componential semantic analysis to define the domain to be analysed. This is often a very difficult step. Gething (1972) is forced to limit some of his sets arbitrarily. In cases where the domain to be examined is imprecise, it is often convenient to fall back on available syntactic criteria to help delimit the boundaries. The use of syntactic criteria to define the domain to be analysed can lead to unique problems if there are no direct semantic correlates to the syntactic criteria. Such a case occurs in examining the semantic extension of some classifiers in section 7. Gething concludes that "the

description of classifier use in Thai may be more conveniently handled as a semantic matter than as part of the syntax..." (1968:818). Burling (1965) comes to a similar conclusion in an earlier article on Burmese classifiers.

Becker (1975:112) is of like mind. He argues specifically against syntactic criteria in explaining classifier selection. To illustrate his point he contrasts the use of gender systems in IE with gender in English. He describes Indo-European number and gender systems as essentially taxonomic and syntactically relevant: they are overtly marked in most cases and serve to classify words. But in English gender is covert. A river may be classed as feminine in French and masculine in German, but in English it is masculine, feminine or neuter on different occasions, as used by different speakers. Becker says that one could write context-sensitive syntactic rules specifying choice of gender, "but the rules would suggest that the choice is more determined than it actually is" (Becker 1975:113). Covert gender, according to Becker, is typologically close to Burmese numeral classification. And while the use of classifiers in Burmese seems to be more open to original classification (especially in conversational repartee and poetry) than in Thai, the cases of multiple classification of a single noun and the other problems mentioned above are also subject to similar contextual and intentional constraints. Ultimately we must agree with Haas who wrote in an early paper on Thai classifiers (1942:203): "We cannot make rules governing the

choice of classifier to be used in every given instance". We can specify the likelihood of the choice of a certain classifier within certain situational limits but in many if not most cases there remains an element of speaker's intention. A formal system of classifier selection to the level of broad categories of classifiers (but not to the level of individual classifiers) is suggested in section 6.

3.0 REPEATERS

In section 1 we noted that grammarians have either listed repeaters as a major category of Thai classifiers or do not consider them to be classifiers at all. The former approach was termed inadequate, while the latter seems very unsatisfactory since repeaters do fill the semantic requirements to be classifiers. That is, they provide unit reference to a headword. They occur with numerals quite regularly, and they can also occur with demonstratives, although very rarely. For example,

3.1 phǒm cháj mǎi , mǎi níi "I used this hand."
I(male) use hand PAUSE HAND this

Although repeaters occur relatively rarely, it should be kept in mind that in the average text or conversation, even the most common classifiers do not occur very frequently. Most grammarians of Thai would agree with Hla Pe (1965: 163) that repeaters are a distinct category. However, just as Allen (1977:295) finds that the lack of a rationale for Burmese repeaters "mystifies" him, so Thai repeaters have eluded satisfactory analysis. In this section, defining criteria for repeaters are provided, but Adams and Conklin's criterion that "Repeaters, whole or partial, classify only themselves or compounds of which they are a constituent" (1974:4) is not yet considered. Their point of view is considered in section 6.1. At this stage, by "repeater" I mean simply those classifiers which have the same form as their headnoun.

Traditional grammarians have emphasized (see, for example, Silapasarn 1968) that classifiers are nouns: they are distinguished from other nouns merely by serving the special function of providing unit reference to some other entity. In general, this is a correct analysis, although some examples are presented in section 6 which show classifiers that have no alternative function as full substantive nouns. Since repeaters are identical in form with the headword, and classifiers are nouns, it follows that repeaters cannot classify headwords which are not nouns. Additional evidence for this conclusion is provided in section 4.2, page 54. Adams and Conklin further claim (1974:3) that a relationship of "lexical identity" holds between repeater and headword. By "lexical identity" I assume they mean identity of both form and sense. Support for this claim is provided in the following section, and in section 4.

3.1 IN SEARCH OF COMMON SEMANTIC FACTORS

Adams and Conklin (1974:3) found that their "data shows unclear boundaries between repeaters and non-repeaters..." They are probably referring to the fact that some nouns can be classified alternatively by repeaters and by other classifiers. For example, among the 486 repeaters listed in Haas 1965 are the following:

krathúuthääm	"principle; heading; (legislative) question" -classified by /khôo/ "point", /râan/ "matter" and by itself
kraphô?	"stomach" -classified by /lûuk/ (for small round things), /baj/ (for containers) and by itself
taakhâaj	"net" -classified by /an/ (as a physical object) /phân/ (as a large flexible, functional flatshape) and by itself

In all, 35 different classifiers occurred with repeaters. Of these, only 7 occurred more than 2 or 3 times. These were:

Table 2.

Classifiers Co-occurring with Repeaters in Haas 1965		
Classifier	Gloss	Number of Occurrences
1. hâæn	place	43 + 7 = 50
2. an	(for physical objects)	28
3. khâan	side	18
4. jâan	kind	10 + 5 = 15
5. baj	(for containers)	12
6. khôo	point	6 + 4 = 10
7. lûuk	(for small round things)	5

Of the remaining 28, 9 are relative synonyms of members of the first group of 7. Occurrences of these 9 are added to the totals of the respective synonyms in Table 2. Five of the 19 remaining classifiers refer to groups, 8 to objects classified by shape, 5 to parts and 2 to people. Most of

these 19 occur only once.

Table 2 confirms Allen's observation (1977:295) that there is a salient locative component in repeaters. Others have noticed that body parts and abstractions are prominent among repeaters; these are classified most often by /khâaŋ/ "side" (for body parts), /jàaŋ/ "kind" (and its synonyms), and /khôo/ "point" (for abstractions). The temptation is to look for a common factor of "part" or perhaps "semi-entity" in the sense of not having clearly perceived boundaries or having incomplete boundaries (see Whorf 1936 in Carroll 1956:140). However, many classifiers with a major semantic component of "part" are definitely not repeaters. Furthermore, semantic domains that are not usually associated with repeaters are revealed by classifiers 2, 5 and 7 in Table 2. These clearly show that repeaters can refer to discrete entities which are for the most part physical objects. Haas 1965 yields 54 repeaters that are discrete physical objects*. The senses of almost all of these items have to do with the defining of a specific space. The 54 words are

koŋ	"wheel, circle"	kroŋ	"cage"
kruaj	"funnel, cone"	krôo	"bailing scoop"
krôop	"frame"	krachoon	"strainer"
kradaŋ	"ladder"	krabôok	"cylinder"
krapăw	"purse, wallet"	krapô'	"bulb"
klôoŋ	"box"	klôoŋ	"pipe"
klàk	"small case"	kôot	"funerary urn"
khèŋ	"a kind of basket"	ŋâaŋ	"hook, barb"
côo	"screen for shadow play"	cùk	"stopper"
chəəŋkraan	"brazier"	sôoŋ	"envelope"

* The "discreteness" here is relatively arbitrary. For example /kradaŋ/ "ladder" also means "stairway, step". /krapăw/ "purse, wallet" also means "pocket".

tùm	"jar"	dân	"shield"
tian	"bed"	taw	"brazier, oven"
thùn	"float"	thôo	"pipe"
bùan	"noose"	thanuu	"bow (the weapon)"
bâw	"crucible, socket"	banlan	"throne"
pìn	"pin (for topknot)"	pâw	"target"
phâamûan	"silk loincloth"	făa	"lid, cover"
phuan	"garland, cluster, string"	phææ	"bamboo raft"
fææm	"folder"	monkùt	"crown"
mét	"seed, kernel, grain"	malét	"seed"
jaam	"shoulder bag"	ran	"nest"
lôo	"wheel"	lôo	"shield"
loon	"coffin"	won	"circle"
samôo	"anchor"	lôot	"tube"
huan	"ring, hoop"	hoo	"package"
aan	"bowl, basin"	aan	"saddle"

It can be seen that many of these are containers. In fact it seems to be the case that all containers are acceptable as repeaters, even though they are usually classified by /baj/ (as containers) or by other common classifiers such as /lûuk/, /an/, etc. This is true even of those common containers used often as inexact measures of material and commodities, such as /krapôon/ "can", /thûaj/ "glass, cup", /caan/ "plate", /chaam/ "bowl", etc., although to a lesser extent. One informant volunteered that for these containers, use as a repeater was "O. K., but not good".

A large number of the entire group of 486 repeaters can be seen as sharing a component of defined space. The most extensive domain of word-senses related to this notion is that of the various senses and compounds of the word /thôon/ "stomach; abdominal area; pregnancy". The compounds of this word cover an enormous semantic range. By considering any semantic connections made in the language (such as compounds, alternate and multiple senses and synonyms) it is possible

to account for some 400 of the 486 repeaters as members of a kind of semantic structure based on /thóon/. There is still a sizeable residue, however, and I am unable to state definitively a class meaning for repeaters*. I am not satisfied with this non-conclusion and feel that the wide extent of the notion of defined space has not been properly accounted for, especially when informants confirm that containers can be seen as the "place for" their contents and sometimes explain the meaning of a container in this way. This gives the locative component wider significance as well. Nevertheless, this avenue of enquiry will not be further pursued here since another approach, also semantic, has proven more fruitful. It is outlined in the next sub-section (3.2).

While it was surprising to discover that containers could occur in repeater phrases, it was even more surprising to discover that many other common nouns which are almost obligatorily classified by common classifiers can also be marginally acceptable as repeaters. For example, /sâa/ "garment" is obligatorily classified by /tua/ but

3.2 *sâa sãam sâa
 shirt 3 SHIRT "three shirts"

is not immediately rejected as would be a clearly erroneous combination such as

3.3 *sâa sãam kôn
 shirt 3 LUMP

*Other body parts also have large ranges of extensions, especially /taa/ "eye", /khãa/ "leg" and /húa/ "head". These sometimes coincide with /thóon/ extensions.

In a natural conversation one informant purposely used the construction in example 2 above and received an immediate unquestioning answer. In discussions later the second informant stated that she detected the unusual construction and wondered about it, but she had clearly been able to understand the question and had answered promptly. It is as if the use of these words as repeaters made some sense but served no practical function not served better or equally as well by the usual classifier. This marginal acceptability is probably due to the lexical transparency of repeaters. Thus they would make as much sense as a child's he goed in English.

3.2 DEFINING CRITERION

There is a single semantic factor which serves to distinguish repeaters from all other classifiers. This is the fact that repeaters can be considered as one-place predicates (1P predicates) in contrast to all other classifiers which are two-place predicates (2P predicates). For the purposes of formal logic it is fairly common to consider substantive words (but not proper nouns) as predicates (see Allwood et al 1977:169 and Bierwisch 1970:28). By a 1P predicate I mean a substantive word which can convey a full sense in actual speech and be understood without requiring another substantive to support it or to complete the meaning. Correspondingly, a 2P predicate requires another substantive. For example, "hand" is a 1P predicate:

3.4 $\exists x H(x)$ "There exists an x such that x is a hand".
while "part" is necessarily a 2P predicate:

3.5 $\exists x P(x,y)$ "There exists an x such that x is a part of y ."

Parts, kinds, groups, configurations and formal abstract units of things are usually 2P predicates in English. The fact that prominent semantic domains within the category of repeaters consist of parts- body parts, etc. -in no way conflicts with this analysis: body parts (for example) may be considered parts in English, but they do not require us to state what they are parts of. This in turn is related to what might be called the "background" of a sense. By "background" I mean the information supplied by expected linguistic context and non-linguistic situation of utterance. In many cases this is a locational factor. It causes considerable difficulty in the procedure described below.

What being a 1P predicate means in terms of actual speech is that the use of a 2P predicate without some input of a second substantive -from context, situation, shared knowledge, or other source- results in a breakdown of communication. For example, suppose your friend phones you up, and without any proper preamble, demands

3.6 How many parts do you have(over there)?
This question cannot be answered in any straightforward way until further information is supplied: parts of what? What kind of parts? Imagining the same situation, the question

3.7 How many hands do you have (over there)?

while quite odd, is a question which conveys a clear sense and can be answered. No further questions are felt necessary by the hearer. Of course certain attitudes must be adopted by the respondents in such a test, the most obvious of which is that the respondent must consider each request in a sort of naive social vacuum, responding only to the sense of the question itself. In fact such a situational test frame* can never be absolutely accurate, and several problems were experienced with this one. The original frame was

3.8 thíp mii N₁ jùu kii N₁
 NAME have N₁ stay how-many N₁
 "Tip, how many N's do you have?"

which worked fairly well in the majority of cases. One problem was with the use of the informant's name (a result of the telephone call format) which implied personal possession of N and a location identical to the informant's. Thus for some nouns the form had to be altered to

3.9 thii nân mii N₁ jùu kii N₁
 at there have N₁ stay how-many N₁
 "How many N's are there (over) there?"

This frame, in turn, was found to be too restrictive in loca-

*Boguslawski (1970:145) urges that only utterances from genuine communicative situations should be studied. While I quite agree, the practical limitations of such an approach are enough to make work impossible. Linguistics has always depended to a great extent on the ability of grammarian and informant to mentally supply context and situation to an utterance. When this aspect of language has been neglected the analysis has been correspondingly weakened.

tive terms, in which case the informant was asked to imagine a phone call from overseas. Fortunately phone calls from outerspace were unnecessary since informants had acquired a grasp of the distinction sought during the work on the majority of simple cases.

Other problems were encountered with the use of /pen/ (mentioned earlier in section 2.1). It was found that with /pen/ (and usually with an inchoative verb of creation, separation, division, accumulation, etc., but not necessarily) that a "false repeater" could be produced. For example

3.10 kháw sá̌ pen chin sǎam chin
 they buy be PIECE 3 PIECE
 "They bought 3 pieces (of it)"

As the gloss shows, the first occurrence of /chin/ is taken to be functioning as a classifier, not a head word*. Thus 3.10 appears to be an example of classifier as head. However 3.10 does not refer to "pieces of pieces" as this would imply. Both occurrences of the classifier /chin/ seem to be semantically related to the unexpressed head noun ("it" in the translation). Alternatively, /sá̌/ "buy" may be functioning as headword, as in Noss's analysis (1964:107).

Examples containing /pen/ were automatically excluded from consideration in the process of isolating forms which could function as repeaters. Partial justification for this lies in the fact that forms occurring classified with /pen/ can usually also occur in full classifier phrases, and thus can be judged on a more standard basis.

* Thus it was necessary to frame a wide enough definition to allow this function. That is, occurrence with /pen/ should be included, even though such occurrence is not in an overt classifier phrase.

The question form was chosen to be the most contextually neutral, as was the verb /mii/ "to have; to exist". The intimate connection of possession with existence thus contributed to the problems of implied location described above. Nevertheless, despite such patching of the test frame, I am reasonably confident that we have been able to clearly distinguish between 1P and 2P predicates for all the nouns listed in Haas 1965 as repeaters or as classifiers.

One-place predicates, then, can "stand on their own" in conversation, and bear a semantic burden which is sufficient for understanding. By "understanding" here I mean (as mentioned above) that no further questions are felt necessary by the hearer. It is the claim here, then, that repeaters can be distinguished from all other categories of classifiers on the basis of their status as 1P predicates, as represented in figure 1 :

Figure 1

Semantic Structure of Thai Classifiers

Classifiers	
repeaters	others

The status of 1P predicates is in consonance with the alternative function of repeaters as full substantive nouns. Only 1P predicates can perform both headnoun and classifier functions in the same classifier phrase.

Simple function as a noun does not, therefore, make a classifier a repeater. For example, /tua/ in the following sentence functions as a noun:

3.11 tua khǒŋ khǎw təm paj dǔaj phǎn khan
 body POSS he full go also rash

"His body is covered with rash." (from Sethaputra 1972:391) and similar examples have been given in section 2 (examples 2.51, 2.52) yet the repeater phrases in

3.12 *kháw mii tua sǒŋ tua
he have body 2 BODY

3.13 *khon sǒŋ khon mii tua sǒŋ tua
person 2 PERSON have body 2 BODY

are at best only marginally acceptable, and only in highly unusual or contrived situations. Furthermore the acceptable occurrence of /tua/ in 3.11 seems to be bound to occurrence with the possessive marker or a compound of which the possessive is a member, e.g. /tuakháw/ "his body". Other occurrences require the compound /tuaton/ which can be glossed as something like "corporeality", as opposed to spirituality:

3.14 phii mǎj mii tuaton
ghost NEG have body "A ghost has no body."

The best arbiter of acceptability as a repeater is the abrupt phone call scenario:

3.15 *thǎi nǎn mii tua jùu kǐi tua
at there have body stay how-many BODY

and this is just too ambiguous to be acceptable, partly because /tua/ enters into so many compounds with alternate senses. The occurrence of /tua/ in 3.15 above might be taken to refer to the sense of /tua/ in any one of these compounds, depending on various factors of situation, context (although these are greatly reduced here) or of expertise on the part of the listener. The various senses of /tua/ as compound member are listed in section 7.

Informants, in rejecting 3.15 as a valid question, report that they feel the questioner might be inquiring about

the body-shape of some animal or object, rather than their own bodies, even without the locative expression /thiinan/. Reference to the human body is usually with /raa kaaj/ "body, figure". Thus, although /tua/ can occur as a full substantive noun in some cases, it still cannot occur in a full classifier phrase. One reason why 3.12, 3.13 and 3.15 are unacceptable is that the sense of /tua/ as classifier is something like "body-shape" rather than "body" (as argued in section 7.5) and thus there is no relationship of lexical identity between headword and classifier. The classifier /tua/ also seems to have, as at least part of its sense, the notion of "animate or active." Since the form "body" (with the relatively abstracted sense it has in 3.12, 3.13 and 3.15) is neither animate nor active, we have an additional motive for the unacceptability of these examples.

A word like /khon/ "person", while clearly functioning as a repeater, also enters into a large number of compounds. However, compounds with /khon/ are remarkable in that /khon/ retains a single sense and that the sense of the entire compound is a hyponym of /khon/. This depends on the sense of /khon/ as compound member and the sense of /khon/ as classifier being identical.

One last implication of the claim that all repeaters are 1P predicates is that the categories of repeater and standard measure (defined in section 5) are mutually exclusive. Words for concepts such as "kilogram", "light-year" and "horsepower" are clearly 2P predicates as defined here. The implication that 1P predicates correlate exactly with

"entities" in Thai is also examined in section 5.

3.3 FUNCTIONS OF THE REPEATER CONSTRUCTION

Below are some examples which illustrate cases where repeaters bear clear semantic functional loads. First of all, they can serve to differentiate the basic sense of a noun from its extensions. The most common example is

- 3.16a *bâan* *sǒɔŋ* *bâan*
 house 2 HOUSE
 "two homes"
- 3.16b *bâan* *sǒɔŋ* *lǎŋ*
 house 2 PROTECTIVE COVER
 "two houses"

where the classifier /*lǎŋ*/ is a semantic extension from the noun /*lǎŋ*/ "back" and therefore implies a concrete physical configuration. This leaves the repeater construction available for emphasis on the total concept of /*bâan*/ as "home; location of the family; hometown; region of birth."

It is not clear whether the repeater must always give the most basic sense, since one could argue for example, that the basic sense of /*bâan*/ is given in 3.16a or that it is given in 3.16b. The notion of "basic sense" will be discussed more thoroughly in section 7, where it is a major theoretical point. It is interesting to note, however, that body parts in particular are a very productive source for semantic extension (as with /*thǒɔŋ*/ "belly") and since body parts are usually repeaters the semantic functional load of repeaters as markers of non-extended sense (=basic sense) is thereby increased. Regardless of which sense is selected for the classifier, the senses of the classifier and the

head are always identical. This is part of the "lexical identity" stressed by Adams and Conklin (1974:3) and illustrated in the discussion of /tua/ above. This fact may be taken as an additional defining criterion for the category of repeaters.

It seems to be the case, then, that for items where the use of alternative classifiers is common (for example, /baan/) repeaters bear the semantic function of focusing attention of the hearer on the referent of the head in total or in general. This focus is necessitated by the danger of ambiguity arising from the possibility of contrast with specific characteristics of the referent. The whole contrasts with each part.

When alternative classification is not commonly available, repeaters can function simply to mark indefinite unit reference for the head, reference which would not exist unless the repeater structure were employed. It would not exist because the bare noun in Thai is held to be unmarked for abstract or concrete, singular or plural, definite or indefinite (Lekawatana et al, 1969:88). Repeaters serve to provide unit reference without focusing on specific characteristics, on kind or on location. Along with simple unit reference they provide the force of singularity described by Adams et al (1975:11).

There is another sense often given for repeaters which at first seemed puzzling. One informant has consistently reported that in comparisons like

- 3.17a krabuaj nǎŋ baj
 ladle one CONTAINER
 "one coconut-shell ladle"

- 3.17b krabuaj n̄ŋ krabuaj
 ladle one LADLE
 "one coconut-shell ladle"

while the senses of the headnouns in 3.17a and 3.17b are generally the same, there is an implication of "kind" in the repeater phrase; that is, "kind of ladle". She reports that with the repeater phrase the implication is that you have "so many /krabuaj/", or that you have, say, a big one and a little one. This is clearly distinct from the full sense of "kind" in

- 3.18 krabuaj n̄ŋ j̄aŋ
 ladle one KIND "one kind of coconut-shell ladle"

Other examples where informants agreed on some implication of "kind" were the compounds /hũanâa/ "head, chief, leader", and /phũunam/ "leader". For example

- 3.19 phũunam s̄ŋŋ phũunam
 leader 2 LEADER "two leaders"

was clearly interpreted as two different kinds of leaders. Leader of a country (political) and leader of a religion were suggested.

Y. R. Chao (1968:597) observes:

...it may seem out of place to put measures with meanings like "type, quality" under group measures of things. However, things belonging to a group usually have some property in common, so much so that it is possible in formal logic to turn around and define "property" simply as membership in a class.

Chao elsewhere notes(pp. 496-7) that

...form classes can sometimes be defined by enumeration without stating any common property possessed by all of their members. [Continued in a footnote] This is in fact Russell's principle of abstraction, according to which the (common) property of a class of objects consists simply of the

fact that the objects are the members of that class. ... See Bertrand Russell, *Principles of Mathematics*, Cambridge, 1903, pp. 166, 219-220.

This equivalence of multiplicity and kinds could be the mechanism connecting "so many /krabuaj/" with "kinds" of /krabuaj/ as reported. There is another more direct connection, however.

The general assumption, as mentioned in section 2, is that classifiers classify the referents of substantive headwords into classes. The logical implication is that with repeaters, a unit is being classified into a class with only one member. The use of a numeral with the classifier signals the number of members of the class that are being discussed (even though it is the classifier which tells the class). When a plurality of members is indicated and members are semantically the equivalent of singleton classes, the logical result is a plurality of classes.

Semantically, the classifier and head noun must be identical. However, in formal logic member and class must be kept distinct. This may explain why Adams and Conklin (1974: 5) reserve judgement on whether the head or the classifier is more "central to the structure of the phrase". "Centrality" of this sort is most likely based on semantic relationships. A single classifier phrase with /khon/ "person" can be seen as having, alternatively, the head or the classifier as more basic:

3.20 nákrian sǝŋ khon
 student 2 PERSON "two students"

In terms of class membership, /nakrian/ "student" is a member

of the class of /khon/"people". At the same time it could be argued that /khon/ refers to an essential attribute of a student, his or her humanity. As a class from which members are isolated, /khon/ is more basic. As an entity to which attributes are predicated, /nákrian/ is more basic:

Table 3

Semantic "Basicness" in Classifier Phrases

<u>Head</u>		<u>Classifier</u>
member	→	class
entity	←	attribute

In Table 3 the arrows indicate the more "basic" element.

Some additional evidence for the semantic identity of head and repeater is presented in the next section on Partial Repeaters. There a lexicalizing function of the repeater construction is discussed in connection with noun compounds. One example is

3.21 khamthăam săam khamthăam
 question 3 QUESTION "three questions"

where the use of a repeater clause instead of an acceptable partial-repeater clause serves to establish the fact that /khamthăam/ is a single compound noun. The most interesting (and frustrating) possible function of repeaters is, of course, to classify the headword as a member of a class to which a specific class-sense can be assigned, as discussed above.

3.4 REPEATERS: BASIC SYSTEM OR "WASTEBASKET" CATEGORY?

It is common to view repeaters as a residue, as words which do not fit into the established classes and are repeated only to satisfy the requirements of the syntactic

pattern. Denny (1975:245-6) considers Burmese repeaters to be "dummy elements" which contribute no meaning to the phrase. He presents evidence for this, but the syntactic system in Burmese is quite different from that in Thai. Informants also point out that country folk who might not know the "correct" classifier often use repeaters.

In spite of this, the view I would like to present here is that repeaters are in some way very basic and represent an open category which includes potentially all nouns which are 1P predicates. In the case of 1P predicate nouns referring to objects with salient characteristics of shape, function, arrangement, etc. (and especially when these characteristics are focused upon in discourse), the relevant classifier replaces the repeater. The repeater remains, however, always potentially available. (Adams et al (1975:6) express this as repeaters being "created" when needed.) Support for this view is found in the following:

- (i) the overlap of more specific classifiers with repeaters, as described above, (especially in the occurrence of nouns referring to containers in repeater phrases)
- (ii) the tendency for items which are 1P predicates to be at least marginally acceptable as repeaters, as described above, and
- (iii) the possibility of a class-sense for repeaters, perhaps as locatives associated with defined space.

The use of repeaters as a wastebasket device by unsophisticated speakers, while seeming to contradict this general picture of repeaters, does not actually do so. Country folk would have less familiarity with certain abstract or technical concepts (e.g. of religion, law, or arts) and would tend

to use repeaters should the need arise to enumerate or specify the nouns referring to such concepts. This could very well be due to the large sub-domain of abstractions within the semantic domain of repeaters.

Because repeaters are so readily available, as proposed here, they are naturally quite useful as such a "catch-all" device. But this function is entirely secondary. The classifier /an/ functions in a very different way as a residual class. It is discussed in section 7.

4.0 PARTIAL REPEATERS

4.1 PARTIAL REPEATERS AS A CATEGORY

Adams and Conklin, we have noted, make a distinction between repeaters which can also partially repeat (like /khon/ "person") and repeaters which classify only themselves (like, say, /krachoon/ "strainer"). The former type will be referred to here as "PR Repeaters" (partially repeating repeaters) and the latter type will be referred to as "Exclusive Repeaters" where it is necessary to distinguish them. The term "full repeating" will be used for the dynamic relationship or process.

One drawback to Adams and Conklin's approach is the enormous task of discerning whether a given classifier classifies only itself. To do so would require a search of the entire lexicon (were such information available there) or testing of every classifiable head, in order to provide a definite negative result. And given the flexibility of the classifier system (in gapping, for instance) one could never be sure whether the item in question was a repeater or not.

PR Repeaters like /khon/"person", when functioning as nouns, enter into a large number of compounds such as

4.1 khon sák phâa
person wash clothes "laundryman, washerwoman"

while Repeaters like, say, /mîi/"hand" enter into very few compounds, depending on how the term "compound" is understood. The process of noun compounding in Thai is still very poorly understood and a thorough-going explanation is not attempted in this paper. Nevertheless, some of the problems involved

are discussed in section 4.3.3. Consider the following nouns:

kasikoon	"farmer; agriculturalist"
châaw naa	"farmer; country person"
khon tham naa	"farmer, on who farms"

all of which have a basic semantic component of "person" in varying degrees of lexical transparency: the first in the borrowed suffix /-koon/ (from Sanskrit); the second in the bound stem /châaw/ "dweller in; inhabitant of" (Haas 1965: 146); the third in the free lexical item /khon/. All three can be classified by /khon/. Only the last item, however, would be called a Partial Repeater by the syntactic criteria of repetition of the form /khon/. The first two would have to be considered as non-repeaters of some kind. Semantically the main difference between the last item and the first two is degree of lexical transparency. However, the transparency appears more to be a question of degrees of transparency rather than presence - or - absence. Gradients of level of formality and of lexiclization* are also to be found in these 3 examples. The first is highest in formality and degree of lexicalization, the last lowest. Partial repeating then can be seen as a syntactic relationship (repetition of a form) with semantic correlates. Both semantic and syntactic criteria involve the compounding of two forms into a single lexical unit which acts as head. This compounding and the related lexicalization are processes which operate independently of classification in most cases (but see speculations about the compounding of /tua-/ in section 4.3.3).

*Lexicalization in the sense of the creation of a new lexical item, as used by Lyons (1977:549)

To create three different categorical roles for /khon/ (N, Full Repeater and PR Repeater) obscures the uniformity of its sense in all three roles. Such uniformity of sense across roles is by no means the general rule among classifiers. (see Tables 6 and 10 below).

Some of the confusion about partial repeaters originates in Adams and Conklin's basic dichotomy of "repeaters and non-repeaters" (1974:3), the former category breaking down into "repeaters, whole or partial". While it is only logical to group repeaters and partial repeaters together, it is necessary to stress that while these categories overlap with each other, the partial repeaters also overlap with non-repeaters. Thus many partial repeaters are not full repeaters at all. As argued in section 3, repeaters are definable as a category. Partial repeaters are also a definable category, but the category is formed on the basis of different kinds of criteria and thus it can and does overlap the category of repeaters, as represented in Figure 2.

Figure 2
Categories of Classifiers

Full Repeaters		Others	
Exclusive Repeaters	Partial Repeaters		
	Full Repeaters which also partially repeat (=PR Repeaters)	Other Classifiers which also partially repeat	

The blank space in this figure will be filled in subsequent sections.

The strict distinction drawn between Exclusive Repeaters

and PR Repeaters may be justified by the fact that the former category must repeat fully to provide unit reference, while the latter may or may not repeat fully. However, the distinction has an unfortunate result: it obscures the fact that both categories are capable of a full-repeating relationship.

The categorization worked out in this paper, being based to some extent on the same distinctions, is also subject to these criticisms, and the stability of the categories is seriously undermined. Throughout the remainder of this thesis, therefore, the distinction will be made between static categories such as Exclusive Repeater (written with capitals) and dynamic relationships such as full repeating (no capitals). Since the latter type of phrase can become cumbersome (e.g. "a form X participates in the full repeating process") terms like "full repeater" will be retained as a kind of short-form cover term.

Assuming that we have already established that repeaters are a unique group among classifiers because they are one-place predicates, it remains to explain the mechanism of partial repeating.

4.2 SEMANTIC RELATIONS BETWEEN PARTIAL REPEATER AND HEAD

The most obvious characteristic of partial repeaters is that they classify complex headnouns, some of which are noun compounds. As with full repeaters, verbs cannot be heads of PR phrases. It may be possible to consider the classifier in

4.2	kháw	pháp	phâa	wáj	săam	pháp
	she	fold	cloth	in-place	3	FOLD

"She folded the cloth into three folds."

to be a partial repeater, but /pháp/ and /phâa/ seem to be less unified a construction (as V + N or verb + object) than an NP or a noun compound. /phâa/ can also be replaced by other nouns such as /kradaat/ "paper", /năŋ/ "skin, leather, etc." It is clear that the verb /pháp/ is classified here, not the predicate /pháp phâa/. The categorization of /pháp/ as a full repeater is also opposed by the distinct senses of /pháp/ as verb and as noun, the verb referring to the action, the noun to the resultant state. /pháp/ also fails the frame test for repeaters. It is better seen as an informal measure of cloth or as an occurrence, result or location* of the action of the verb. Thus for partial repeaters, as for full repeaters, the discussion will be restricted to noun heads.

Complex headnouns of partial repeater phrases can be both one-place and two-place predicates. The difference between the two types is illustrated in the reduced-context situation in Table 4 (see next page).

In Table 4 we can note two important points: first, that although 4.3b and 4.5b are not acceptable, 4.4b is. This makes 4.4b in terms of our test frame a 1P predicate, and this is confirmed by informants in Fasold 1968. Fasold found that most compounds could easily be glossed as relative clauses. For example, /khon ɲaan/ "worker" would be explained by informants as something like

*It can be seen as a location because /hăaŋ/ "place" regularly replaces /pháp/ in the classifier slot.

- 4.6 khon thii tham ʔaan
 person REL do work "a person who works"

Table 4
 1P & 2P Predicates as Bases of Simple, Compound & Complex
 Heads

1P Predicate Base	2P Predicate Base
4.3: Simple Noun Heads	
4.3a mii khon jùu kii khon have person stay how- many PERSON "How many people are there?"	4.3b *mii baj jùu kii baj have S2D-shape stay how-manyS2D-SHAPE
4.4: Compound Noun Heads	
4.4a mii khoncháaj jùu kii khon have person-use stay how-many PERSON "How many servants are there?"	4.4b mii baj máaj jùu kii baj have S2D-shape-wood stay how-many S2D-SHAPE "How many (tree)leaves are there?"
4.5: Complex NP Heads (N + Adj)	
4.5a mii khon dii jùu kii khon have person good stay how-many PERSON "How many good people are there?"	4.5b *mii baj jàj jùu kii baj have S2D-shape large stay how-many S2D-SHAPE

NOTE: /bajmáaj/ has two senses: leaf of any plant in general, and leaf of a tree. The former sense can be replaced by senses on an intermediately general level, e.g.: /bajphàk/ "vegetable leaf". Both senses can be replaced by specific terms, e.g.: /bajchaa/ "tealeaf", /bajtɔɔŋ/ "banana (tree) leaf".

Two classes of compounds, however, could not be glossed in this way by his informant:

- (i) plant parts, including /bajmáaj/ "leaf" and /tôn máaj/ "plant; stem, trunk", and
- (ii) locative nouns like /khâaŋnáj/ "inside".

In the case of /tôn máaj/, Fasold's informant could not break down the compound into a relative clause, "insisting that it was one word" (Fasold 1968:199).

In Table 4 both 4.3b and 4.5b are unacceptable in the

sense that a hearer invariably demands

- 4.7 baj áʔraj
S2D-shape what "Leaves of what?"

In terms of predicates it is clear that for 4.4b and 4.5b the second position still requires a variable to fill it.

The second important point about Table 4 is that 4.5a is also acceptable. That 4.4a is acceptable is unremarkable since /khoncháj/ "servant" is a very common word and most speakers would accept it as a valid compound. All native speakers I queried about this agreed that /khoncháj/ was a single idea. /khon dii/ "a good person" in 4.5a is just as clearly not a compound, yet it is acceptable. The conclusion to be drawn is that the head is a full NP, not merely a noun. Adams and Conklin (1974) also refer to head NP's.

Summarizing, we find that compounds, whether they are based on 1P or 2P predicates, are themselves 1P predicates but Noun Phrases based on 2P predicates remain 2P predicates, as in Table 5:

Table 5

Complex Nominals as 1P & 2P Predicates	
1P Predicates	2P Predicates
Compounds based on 1P predicates (e.g. /khoncháj/)	Complex NP based on 2P predicates (e.g. /baj jàj/)
Compounds based on 2P predicates (e.g. /bajmáaj/)	
Complex NP based on 1P predicates (e.g. /khon dii/)	

The main conclusions to be drawn from Table 4, then, are that partial repeaters are only acceptable with 1P predicate heads, and that there is no difference in acceptability

whether the head is a full compound or simply N + Adj.

There is, however, a further restriction on compounds based on 2P predicates (like /bajmáaj/ "leaf"): although they function as 1P predicates in our test frame, they are not as capable of repeating as simple 1P predicates. Thus

4.8 *bajmáaj sãam bajmáaj
leaf 3 LEAF

is only a very marginally acceptable alternative to the use of /baj/ alone as classifier. The restriction here may have something to do with length of the compound, but a more important factor is the fact that the compound is lexically transparent and based on a classifier which is used to classify a wide range of nouns. In discussing repeaters, the claim was made (section 4.2.4) that the repeater construction is always potentially available for 1P predicates when they are to be classified, but that the presence of salient characteristics in the referent of the head would cause the repeater to be replaced by a more common classifier focusing on that characteristic. Now if the head transparently contains a lexical unit directly referring to the salient characteristic, the process of replacement is much more likely, and in effect obligatory. A speaker would have to ignore (perhaps consciously) the pre-existing salient characteristic marker (in this case /baj/ in /bajmáaj/) in order to fall back on the more basic and more general system of full repeating.

There are other compounds which seem at first glance to disprove this general rule requiring the classifier in a compound to repeat:

4.9a lûukkuncææ sǎam dǝk
 subsidiary-lock 3 FLOWER-SHAPE "three keys"

4.10a khamthǎam sǎam khǝ
 word-ask 3 POINT "three questions"

As was pointed out in section 2.3, the final choice of a classifier, where more than one is possible, depends on several factors, including the intention and point of view of the speaker. We can look at the above examples in terms of what the result would be if they were used as partial repeaters. To begin with, we find that

4.9b *lûukkuncææ sǎam lûuk
 subsidiary-lock 3 {SUBSIDIARY
 SMALL-S3D-SHAPE

is only marginally acceptable, and then only with one of the glossed senses for the classifier. The alternative classifier /dǝk/ (used in 4.9a) is much preferred. To explain the situation in 4.9b we need to look at the semantic relations between /lûuk/ as member of the compound head and as classifier. Haas (1965:487) lists the following senses for /lûuk/ as the first member of a compound:

- (i) subordinate or dependent person
- (ii) young of animals and birds; larvae
- (iii) certain types of fruit (especially coconuts)
- (iv) certain S3D objects

(where senses (i) and (ii) probably should be combined). In contrast Haas has different uses for /lûuk/ as classifier:

- (i) for fruit of any kind
- (ii) for mountains
- (iii) for certain S3D objects

Thus the sense of "subsidiary device" is normally not available for /lûuk/ as a classifier. As compound member, /lûuk/ in /lûuk kuncææ/ has the sense of "subsidiary"

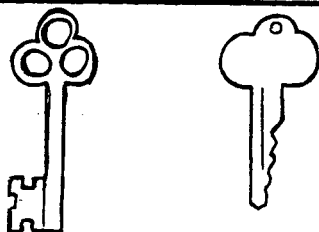
is supported by the fact that the full word for "lock" is /mææ kuncææ/, morphologically mother + lock.

Thus there are three possibilities for classifying /lûuk kuncææ/ "key":

- (i) Classify with /dòck/ as a "flower-shape". This sense apparently includes the impression of both blossom and stem, since keys are considered by informants to normally have a cluster-like design in their handles, of the following types:

Figure 3

Visual Impressions of Keys



Arrows, fireworks and incense sticks are also classified with /dòck/ in this sense. /luuk thanuu/ "arrow" contains /lûuk/ as the base of the compound also, and the semantic relationships between head member and classifier, including the restriction on the use of /lûuk/ as classifier, parallel those being discussed here for /lûuk kuncææ/. /dòck/ is also used for floral designs on printed cloth and patterns in general.

- (ii) classify with /lûuk/: (a) as a subsidiary member in a relationship, or as a subsidiary device, identical to the sense of the compound head. But these senses,

as shown by Haas(1965), are not normally available to /lûuk/ as classifier. The use of /lûuk/ in this sense is correspondingly only marginally acceptable. Informants say that country people might use it. There is also the danger of ambiguity with (ii)b.

(b) as a small round S3D object.

This sense is clearly incorrect since keys are saliently 2 dimensional and not 3 dimensional. Informants report that 4.9b, if acceptable at all, has sense (ii)a and not sense (ii)b*.

There is also the strong implication here that for classifiers, senses as physical objects (e.g. "small S3D object") tend to pre-empt more abstract senses (e.g. "subsidiary or subordinate element").

Similarly, in

4.10b *khamthăam săam kham
word-ask 3 WORD

the unacceptability lies in the classing of the complex notion of "question" as a single word. In fact /khamthăam/ is the sort of compound where the sense of the parts is lost in

* The ambiguity between sense (ii)a and (ii)b is the basis of a favorite joke on foreigners in Bangkok. Based on the common pattern of world languages of Numeral + Noun, foreigners learning Thai are likely to ask a question like *mii lûuk kii lûuk/ have + child + how-many + CLF, intending to inquire about the number of children a person has. Unfortunately, the appropriate classifier for children is /khon/ "person". The use of /lûuk/ as classifier would more likely be interpreted with the sense of "small round object" (unless mountains or fruit were being discussed). This forces a reinterpretation of the headword since in a repeating phrase the sense of the head must be identical to that of the classifier. Therefore the inquiry is interpreted as asking how many small round objects a person has. If the person being asked is a male, the likely answer is /sǒŋ/ "Two!" with accompanying howls of laughter.

the whole (these are discussed in section 4.3.3 below). The sense of the form as a compound member is unlike any sense of the same form in any other (unbound) grammatical role.

In summary, then, we find that compounds based on items which can be used as classifiers (whether the classifier is a repeater or not) will utilize that item as classifier. Exceptions can be explained in terms of divergence of the senses of the same form in its two functional roles: as base of compound and as classifier. This is an essential factor in establishing an additional defining criterion for partial repeaters: as with full repeaters the senses of the same form as member of the headnoun complex and as classifier must be identical.

This contention is supported by the fact that disparate senses of a repeated form simply do not occur, except by coincidence (see example 4.17 below). The lexical identity restriction also holds for classifiers like /baj/, for example, where two alternative senses are available in the classifier role:

- (i) the sense of "S2D-shape", as in the b sentences of Table 4 .
- (ii) the sense of "container" which occurs only in non-repeating classifier phrases such as

4.11	krabuaj	săam	baaj	
	ladle	3	CONTAINER	"three ladles"

While the gloss of 4.4b shows that sense (i) occurs in partial repeater phrases, the sense of "container" cannot. In all compounds based on /baj/, the form /baj/ has the sense

of "S2D-shape", never the sense of "container". The combination of sense (i) as head member and sense (ii) as classifier simply does not occur.

Further support is found in the example of /mɪɪ khwāa/, for which Haas (1965:406) gives three senses, the first straightforwardly referential, the other two more metaphorical:

- (i) right hand
- (ii) right hand man
- (iii) something that is second nature to one

These would be classified by (i) /mɪɪ/ "hand", (ii) /khon/ "person", and (iii) /jāaŋ/ "kind", respectively. The case where sense as head member is synonymous with sense as classifier (case(i)) is the only case where repeating occurs.

What our investigation so far has found, then, is that partial repeaters, while initially appearing to be a unified group closely related to full repeaters, are in fact defined by criteria shared with either repeaters or non-repeaters. Both partial repeaters and some non-repeaters can occur in compounds (loosely defined). In both partial repeaters and full repeaters, the sense of head member and of classifier must be identical.

This identity of head member and classifier, taken with the tendency of compounds to consist of a general term plus a specific term implies support for the view of a hyponymic relationship in partial repeating. We could then interpret partial repeaters in terms of sets and proper subsets. In Table 4, example 4.4a, the classifier identifies servants as one kind (and one proper subset of the class) of people, and

in 4.5a good people are classed as one kind of people. But in 4.4b the status of /baj/ as 2P predicate still prevents native speakers from considering it as an independent noun. It sounds odd to native speakers to say that /bajmáaj/ "leaf" is a kind of /baj/ "S2D-shape". The relationship of hyponymy between compound head and classifier is thus limited to only PR Repeaters. It can be extended to all partial repeaters only on formal or logical terms.

The implication of the hyponymic relationship with PR repeaters is that there are other members of the superordinate classes. This is in contrast, of course, to the claim that full repeaters are synonymous with their headwords, as described in section 3: for full repeaters there are no other members of the superordinate classes.

Since the category of partial repeaters overlaps with the category of repeaters and also with the category of non-repeaters, and further since the division of repeaters and non-repeaters is used here as the basic one, it is more convenient to consider the PR Repeaters as a subset of the category of Repeaters (as in Figure 2) rather than of some general category of partial repeaters. The overlap will be examined a little more closely.

4.3 CATEGORY OVERLAP

4.3.1 MULTIPLE SENSES IN DIFFERENT CATEGORIES

In many cases it is necessary to distinguish different senses of the same form which fall into different categories, for example the following:

Table 6

Items With Different Senses In Different Categories			
Item	As Partial Repeater	As Repeater	As Non-Repeater
kôn	bottom of a thing; buttocks of an animal	buttocks of a person	--
krabòk	cylinder; socket	bamboo vessel	cylinder; socket
klôŋ	tube	camera	tube
klùm	cluster; group; ball	group of personal friends	cluster; group; ball
kôŋ	pile; crowd; group; division of a department	troop, military division	pile; crowd; group; division of a department
khà	leg shackle; joining part	tiebeam; joist	--
baj	small S2D shape	--	container
tua	living thing; agent; representative; digit; letter of the alphabet; character or role in a play etc.	--	body shape
khan	long handle	--	(clf for) wheeled land vehicles except ox carts

With classifiers like those in Table 6, there is a direct relationship between the sense intended by the speaker and the syntactic form of the classifier phrase: repeater, partial repeater or non-repeater. This is in contrast, again,

with items like /khon/"person" which retain their single sense in all three types of classifier phrase.

4.3.2 HOW PARTIAL REPEATERS CAN BECOME REPEATERS

For Repeaters to become Partial Repeaters they must first enter into compounds. There are two ways in which Partial Repeaters which are not PR Repeaters (that is, they do not usually have an alternative function as Full Repeaters) can become Full Repeaters. The first way is illustrated by

4.12a klôŋ səam klôŋ
tube-shape 3 TUBE-SHAPE "three cameras"

4.12b klôŋ thàaj rūp səam klôŋ
tube-shape-emit-image 3 TUBE-SHAPE "three cameras"

Most informants, when /klôŋ/ is tested in the reduced-context frames, accept it as a full repeater with the meaning of "camera". Haas (1965:16) lists its senses as a noun as (i) pipe, (ii) camera, binoculars. Yet the full form for "camera" is the triple compound used in 4.12b. Apparently, of the many compounds into which /klôŋ/ enters, the one meaning "camera" has risen in frequency of usage for various social and technological reasons. Some reduction must have taken place which allows /klôŋ/ alone to substitute for /klôŋ thàaj rūp/. This seems to be a development over real historical time and this is supported by information volunteered by one informant. She said that for country folk, /klôŋ/ alone might be interpreted as a pipe for smoking, rather than a camera. That would be the most prominent tube-shaped object in their culture. See section 1.3 for a review of cultural salience.

The other way in which partial repeaters become repeaters is illustrated by other examples of compounds which are synchronically both full repeaters and also partial repeaters for a single speaker:

4.13a	khamnaam sǎam khamnaam	4.13b	khamnaam sǎam kham
	noun 3 NOUN		word-name 3 WORD
	"three nouns"		"three nouns"

Other words of this type are

koŋ phan	"battalion"
koŋ phon	"military division"
koŋ rɔɔj	"military company"
khɔɔ mɛi	"wrist"
chaanchaalaa	"(railroad) station platform"
etc.	

To informants, most of the members of this group exhibit little or no semantic difference between PR and Full Repeater forms. There is considerable disagreement, though, among informants whether all of the above examples are acceptable as both full and partial repeaters. The list was compiled from Haas 1965. The only generalization I can make about the acceptability of these forms in both full and partial repeater roles is that there is generally less acceptability (and less agreement) on these forms as partial repeaters. The greater acceptability of repeaters is again based on greater lexical transparency.

To my knowledge there is no necessary semantic restriction on the recursive application of this kind of compound-building. The main constraint seems to be of length. Such triple combinations as

koŋthápʔaakàat	
troop-force-air	"airforce"

are left unclassified in Haas 1965, but are acceptable as

classified by /kɔɔŋ / and by /kɔɔŋ tháp/. The latter is preferred. That makes both these classifiers partial repeaters.

These repeated compounds are exceptions to the general rule posited for partial repeating, namely that if a classifier appears in the overt form of the compound it will be used to classify that compound, unless identical senses of compound member and classifier are not available. In such a case, other classifiers or a repeater will be used. Lexicalization, since it unifies the compound into a single sense, contributes to this divergence of senses in the two roles.

Repeated compounds probably behave ambivalently like this because of their ambivalent status as compounds. When they repeat they are fully lexicalized (see section 4.2.3) Inconsistent lexicalization here may be due to the fact that most of the examples available in Haas 1965 refer to distinct subsections of society (especially the military) where lexicalization may correlate with expertise or cognoscenti point of view.

This kind of category crossover does not seem to depend on historical semantic change as much as was the case with /klɔɔŋ / "camera". Semantically, the partial and full repeater phrases differ only subtly, and seem to be alternatively available at any given point of time for my informants, with the preference noted above for the full repeater phrase.

4.3.3 HOW CLASSIFIERS CAN BECOME PARTIAL REPEATERS: COMPOUNDING

Fasold (1968) has written in depth about Thai noun compounding. Here, however, we should confine our discussion

to aspects of compounding which have implications for classification. Fasold's main aim was to generate noun compounds from sentences via relative clauses (Fasold 1968:79). Three general types are excepted from this process.

The first type is fully lexical compounds. These are forms which "have been assigned a sort of metaphorical meaning not derivable from the meaning of their members" (Fasold 1968:80). Y. R. Chao points out that the usual test for such transformed or idiomatic meanings is to ask "whether a given string of morphemes has the same meaning as the sum of their meanings, or a new meaning of the whole which cannot be gathered from the meanings of the parts" (Chao 1968:168). In this paper I will refer to this type of compound as "fully lexicalized" compounds. I think it is apparent as well that few, if any, compounds are 100% lexicalized and there is a range of degrees of opacity up to full lexicalization. Full lexicalization also reduces the likelihood of preserving the identity of head member and classifier senses. Thus it is generally the rule that with this "metaphorical" type of compounding, partial repeating will be disallowed. And it is therefore surprising that informants accept Fasold's example of a lexicalized compound in a partial repeater phrase, /taa-naám/ "underground waterway":

- 4.14 taanáam sãam taa
 opening-water 3 OPENING "three underground waterways"

Such acceptability must be explained in terms of lexical identity of head member and classifier, as I have tried to show in the glosses. The sense of "opening" rather than the

usual sense of "eye" is the best one to choose as the sense of the classifier because of the restrictions imposed by the occurrence of /taa/ in /taanáam/. The sense of "opening" was also suggested by an informant. /taa/ occurs in various compounds meaning "node; knot (of wood); meshwork, grid, grate; small hole or opening; point of time".

Thus Fasold's example of a "metaphorical" compound was simply a poor choice. The sense of the compound base is relatively recoverable (and not blended into the sense of the whole) and this can be shown just because the compound can be classified in a partial repeater phrase. The main implications of lexicalized compounds for classification have already been outlined in the discussion of words like

/bajmáaj/ "leaf" (e.g. 4.8), and
/khamthāam/ "question" (e.g. 4.10)

The classifier /tuajàan/ "example" is a better example of a "metaphorical" or lexicalized compound than /taa náam/ "underground waterway". Care must be taken to avoid confusion between degrees of lexicalization in compounds: an incompletely lexicalized compound (that is, one where native speakers can still recover individual senses for compound members) may be classified by one of its members functioning as a partial repeater. Examples are /khoncháj/ "servant" and /bajmáaj/ "leaf". Fully lexicalized compounds, however, may not be so classified. Consider

4.15 kháw jók tuajàan sǎam tuajàan
he raise example 3 EXAMPLE
"He gave three examples."

Here /tuajàan/ "example, sample" is not exactly a fully lexi-

calized compound since it is possible to imagine some semantic connection to the sense of the members in isolation: ("body" and "kind"). However it is obviously a very opaque compound. Unlike the compound /bajmáaj/ "leaf" which is only very marginally acceptable as a repeater (because it contains the form /baj/ with the same semantic value as /baj/ functioning as classifier) /tuajàan/ can be classified only with what appears to be a Full Repeater. Nevertheless, /tuajàan/ is not a Full Repeater as defined in section 3.2. It is unacceptable as a 1P predicate. The fact that it is classified only with a full repeater is explained by the fact that, like /baj/ "small S2D shape" it often occurs in an apparent full repeater phrase. The second predicate place is filled by context or situation.

Compare the following:

- 4.16a tòn níi mii baj láaj baj
 plant this have S2D-shape several S2D-SHAPE
 "This tree has a lot of leaves"
- 4.16b ?phâa níi mii tuajàan láaj tuajàan
 cloth this have sample several SAMPLE
 "(We have) several samples of this cloth"
- 4.16c phǒm mii phâa tuajàan láaj tuajàan
 I(male) have cloth-sample several SAMPLE
 "I have several (cloth) samples."

Informants report that 4.16b is acceptable though awkward. Example 4.16c is completely acceptable but here /tuajàan/ is functioning as a partial repeater, not a full repeater; that is /phâa tuajàan/ "(cloth) sample" is a unified compound.

In 4.16a /baj/ can occur as an apparent repeater only

when some word like /tôn/ satisfies the second predicate-place. In exactly the same way, /tuajàaŋ/ requires a word like /phâa/ "cloth". The positions filled by /tôn/ in 4.16a and by /phâa/ in 4.16b and c may be filled by other words or supplied by the situation - but the positions must be filled for meaningful communication to occur. /tuajàaŋ/ is a lexicalized compound but a 2P predicate.

Furthermore, /tuajàaŋ/ cannot be classified alone in a partial repeater phrase. There does occur a kind of construction which has the appearance of being a partial repeater phrase, but in such a case, /tua/ is the classifier for independent (or incidental) reasons:

- 4.17 khǝǝ duu pen tuajàaŋ sák tua
 request see be sample only BODY-SHAPE
 "Let's see a sample (of the fish, or of the animal,
 for example)".

On the basis of the principle already hypothesized, that semantic identity must exist between repeated forms, 4.17 is not an example of a partial repeater phrase since /tua/ as head member means something like "representation" while /tua/ as classifier means "body-shape". The occurrence of the classifier /tua/ depends on the second predicate position; that is the commodity or subject that the sample is of. If samples of paper were being discussed, the classifier would be /baj/ or /phææn/, the appropriate classifier for the material or commodity which the sample represents. Thus /tua/ in sentence 4.17 might be called a "false Partial Repeater".

There seems to be a tendency for senses of a compound member to extend in the direction of greater abstraction; that is, "abstraction" in the sense of indirect relation to basic visual and tactile perceptions. For example, see the common classifiers listed below:

Table 7

Divergent Senses of a Single Lexical Item as Compound Member
and as Partial Repeater

Form	Sense as Compound Member	Sense as Partial Repeater
lûuk	subsidiary; dependent; young	fruit; small S3D shape
tua	agent; representative; symbol	body-shape
kham	(nominalizer for verbal actions)	word
khri̯aŋ	paraphernalia; ingredi- ents; equipment; instru- ment; device, trick	complex machine; engine

NOTE 1: Identical senses which occur in both columns (they must exist in order for partial repeating to occur) are not listed in this table.

NOTE 2: The classifier /baj/ seems an exception here to the generalization that sense as compound member is less directly based on perception than is sense as classifier. However, as mentioned above, /baj/ does not occur as a Partial Repeater in the sense of "container" (which is less directly based in perception than the sense of /baj/ as compound member, "S2Dshape". /baj/ as "container" is a non-repeating classifier.

There also seems to be an opposite tendency for Partial Repeaters to focus on physical attributes of the referents of the headwords: shape, size, grouping and arrangement. Other more general attributes, such as occurrence or instance, kind, social status, location and various types of measures and those based on other senses, such as hearing, tend not to be expressed by the use of partial repeating.

The second type of compound Fasold cannot derive from a relative clause consists of compounds with at least one

bound member. /cháaŋphlaaj/ "bull elephant" is his example (Fasold 1968:80). The form /phlaaj/ occurs only in this compound (and in names). It is a bound form- but bound syntactically. That is, occurrence as a substantive is restricted distributionally in relation to other occurring forms.

In contrast to syntactic binding, forms bound in the sense of being 2P predicates are bound semantically. /baj/ "small S2D shape" can occur as a substantive alone- provided that additional information is available from previous mention, situation, etc.

In Table 4 we saw the unacceptability of /baj/ as a single headword and of /bajjàj/ "small S2D shape" + "large" as a compound. The crucial difference between this unacceptable complex head and the acceptable /bajmáaj/ "leaf" is the ability of the item /máaj/ "wood" to satisfy the requirements of a second predicate-position. Items with this ability are not restricted by syntactic category since the adjective /sǎmkhan/ "important" does just as well

- 4.18 baj sǎmkhan sǎam baj
 S2D-shape-important 3 S2D-SHAPE
 "three certificates or documents"

Verbs can enter compounds with equal ease. The criteria for suitability as a second predicate-position appear to depend in part on social factors responsible for frequency of occurrence, cultural prominence, etc. Factors of this kind caused /klɔ̌ŋ/ to undergo semantic change from the 2P predicate "tube" to the 1P predicate "camera". Lyons (1977: 549) assumes that lexicalization of compounds is a matter

that "can only be accounted for in terms of strategies, rather than rules...."

What is the essential difference between /-máaj/ and /-jàj/ in combination with /baj/? /baj/ is clearly the head of the compound, and we can think of the second member as supplying additional information about the head. But it does more than this since it also supplies information about how the second member is related to the first. This is called "the idiosyncratic residue" by Lyons (1977:540). This second lot of information may be along the lines of an implication; that is, given two lexical forms, certain relationships can exist between their referents, other relationships cannot. In the present example, given the combination of /baj/ "S2D shape" and /máaj/ "wood", the hearer can only relate the two within logical and experiential (or pragmatic) limits. Informants suggest that /bajmáaj/ means

4.19 baj khǒŋ tǒn máaj
S2D-shape POSS trunk-wood "leaf of a tree".

(It may also refer to the leaves of any plant, not only trees, as pointed out in Table 4.) The notion of possession is supplied in part by the juxtaposition of /baj/ and /máaj/, as well as by the senses of the two forms themselves. Fasold notes that relationships of possession, identity, similarity and "use for, use as" can regularly be recovered by informants when no verb appears in the overt form of the compound. In such cases the two members of the compound are usually nouns and are taken to be the subject and object of the underlying sentence. In other compounds the verb or adjective

appears and Fasold posits underlying subjects or objects. This discussion of an underlying structure gives us one hint as to the difference between /bajmáaj/ and /baj jàj/. Informants can recover a 1P predicate which serves as one of the arguments for /baj/ in their explanation of /bajmaaj/: This is the 1P predicate /tôn máaj/ "tree". No such 1P predicate fills an argument slot for /baj jàj/, however, since the most likely expansion of it is

4.20 baj tîi pen baj jàj
S2D-shape REL be S2D-shape large

which provides no more information than the compound itself. Thus we could speculate that the second member of an acceptable compound based on a 2P predicate must in some way supply enough information to suggest to the hearer a 1P predicate satisfying one of the argument positions of the base.

4.3.4 IRREGULAR COMPOUNDS

We have been considering examples where the first member of the compound is the head. This is not the only case, but is so generally true that when "the first constituent is not the head", according to Noss (1864:64) "the compound is irregular". There are several items listed in Haas 1965 which are listed as classified by the second member of the compound. For example

khanõmkhèn	sweet + basket	"basket-shaped Chinese pastry"
hũacùk	head + clump	"topknot"
chõõŋthaarj	opening + way	"way; means; opportunity"
phõmpia'	hair + queue	"queue, pigtail"
jaamét	medicine + pill	"pill; tablet"
aahãankrapõõŋ	food + can	"canned food"

In these cases, both compound members are nouns.

Another common factor is the simple fact that the member of the compound which best provides unit reference is the one which is used as classifier. This is clearly the case when the second member is a common classifier. This same principle explains why many combinations which have a container in the second position use the container as classifier (as in the last example above).

Other cases have the classifier in the center of more complex compounds, but the principle of selection of the classifier appears to be the same:

thùafàkjaaw	bean + pod + long	"long cow-pea"
hõnthaaŋkâækhăj	way + path + correct + turn	"a remedy for a difficulty"

/thùafàkjaaw/ is classified by /fàk/ "pod" since peas, if specified, are counted in the pod. Individual peas are counted as /mét/ "seeds." /hõnthaaŋkâækhăj/ is actually a compound of two double compounds: /hõnthaaŋ/ "way" and /kâækhăj/ "improve". The classifier is /thaaŋ/, since only it and /hõn/ provide unit reference and /hõn/ is usually used as a classifier for points of time, not paths or ways. /thaaŋ/ is also a far more common classifier.

There are further examples of double compounds where both members provide suitable unit reference and in fact either member can serve as classifier. The best example of these is

hâaŋráan	business + shop	"stores, firms, commercial establishments"
----------	-----------------	--

When classified by /hâaŋ/ the general commercial aspect is emphasized; when classified by /ráan/ the specific location

and structure of building, booth or stall is emphasized.

Notice that many of these compounds we have been discussing cannot be expanded to complete sentences because they are merely co-ordinate compounds where the relationship between members is simply one of addition. /háan ráan/ "firms" and /hǒnthaan/ "way" are examples of this type. The sense of such compounds is usually very general, but different from such compounds as /jaamét/ "pills; tablets" where, although the sense is still general, the second member of the compound serves as a modifier for the first. Co-ordinate compounds like the above examples are the third type of compound Fasold excepts from the process of derivation from sentences through relative clauses.

4.3.5 COMPOUNDING OF CLASSIFIERS

We have touched on some aspects of noun compounding in Thai but the most important question remains: Why are compounds formed with classifiers in the first place? We have seen that container classifiers can be added after a noun referring to a material. The classifier has a modifying role to show the type or the condition of the material (e.g. /nám taan píip/ "sugar from sugar palm, in solid form, in square 5-gallon cans"). In other cases a semantically bound classifier (i.e., a 2P predicate) often combines with the noun filling the second argument (e.g. /bajmáaj/ "leaf").

There are other less transparent cases, however. For example, why do small animals, insects and worms often require the classifier /tua/ to be prefixed, while larger, more "animal-like" animals do not require this prefix?

Why does /baj/ enter compounds as "S2D-shape" and not as "container"? One possible explanation, in the case of /tua/, is that since shape is the primary classificatory criterion, and prominence as food, transport, pets, etc. would make certain types of animals culturally salient, then insects, worms, larvae etc. are seen as only marginally animals by this criterion. They often do not have features easily recognized as arms or legs (like land mammals, for example) or as head and tail (like fish). Now the class of things classified by /tua/ includes all living things which are not plants or human (or superhuman). Perhaps to clear up ambiguity these marginal members require the /tua/ prefix to place them without doubt in the category of living things. This suggests some kind of modification of the basic classificatory system. Most classes are based on perceptual criteria, especially shape. However, with the development of biological knowledge*, other types of criteria come into use, in this case a factor of animacy. This creates a conflict between the perceptual units and the non-perceptual (perhaps logical) classes, which requires the compounding of some headwords in order to make them fit better into the classes. Many worms and insects have appearances and characteristic movements unlike the more easily studied animals, especially the animals which are prominent in the technology and culture. Many insects are felt or heard but remain un-

*The Buddhist emphasis on the extreme range of life-forms and the injunction to avoid killing of lower forms, including insects, may have had some influence.

seen. One informant added that they often do not seem to move at all. On purely casual perceptual terms, they might not be considered to be animate at all. But with closer observation they must be considered animate beings. Thus these creatures, when referred to, have the classifier added to their names in order for them to be classified unambiguously. In section 7 a group of compounds with /tua/ can be seen to have a common semantic factor of being active agents: robots, transformers, chemical reagents, kites, etc. These objects may also enjoy a sort of promotion to animate status through compounding.

Some informants emphasize that /tua/ has a connotation of respect. This would agree with the ideas presented above. Size is a criterion of respect and elephants, the largest animals, are highly respected. In traditional usage elephants had their own classifier.

Thus, compounding of a headnoun with a classifier can in some cases serve to reinforce the classificatory system.

In other cases the compounding does not affect the classification. /tua/ seems to have extended its sense or its function (or both) to place emphasis on the physical existence of a referent by means of a reflexive sense, as in English. In this sense it seems to have developed a complementary function to that of /an/. In a discussion of cassette tapes an informant was heard to say that her tapes were old. Least she be misunderstood as meaning that the content of the tapes was old, she emphasized that it was

the tapes themselves which were old by saying

4.21 tuathéep man 'een
body-tape 3P-PRO self "the tape itself"

/tua'een/ is the standard reflexive pronoun in Thai and can be applied to nouns in general. The nouns can be replaced by various status-related pronouns where necessary. Nevertheless, /tuatheep/ in the above example would be classified by the appropriate classifier /múan/ "reel" or by /an/, but not by /tua/. Thus it is also apparent that the compounding of classifiers can have various functions beyond reinforcing classification. It will be seen in section 7 that at least one of these functions is also performed by /an/ in its capacity as "wastebasket" classifier and marker of physical entity.

5.0 MEASURES

What are measures? Since they provide unit reference of a sort and can fill the classifier slot in typical classifier phrases, we should consider them to be classifiers. Measuring seems to occur most often with masses which have no immediately perceived natural units. But there are many cases where obvious natural units are ignored and groups of these units are considered in the same way as masses. For example, both apples and sugar can be sold by the kilogram. The natural units of apples (the individual fruit) are not relevant. Apples can also, however, be sold by the individual fruit or by the dozen. In such cases, the apples are still measured. Measures seem to provide unit reference without any dependence on natural units. Some measures use the natural units and some do not. One common aspect of measuring is that, as with classifiers in general, measures are measures of something: a commodity is presupposed and in Thai it must appear as the headword. Thus all measures are 2P predicates .

5.1 INTRINSIC & EXTRINSIC FEATURES

There is some disagreement in the literature on classifiers as to the degree of distinction between classifiers and measures. Greenberg (1975:30) found that "in numeral classifier languages the classifier construction is almost always identical with the measure construction, including

rules of word order." Jones (1970:7) also takes it for granted that where true classifiers occur, the measure construction will follow the same pattern. If the syntactic patterning is so similar, what is the motivation for the distinction between classifiers and measures?

One possible explanation of the difference between measures and classifiers is provided by Adams and Conklin (1974: 3) who point out that despite the uniformity in surface structure in classifier and measure phrases, there is a "radically differing" relationship (which we can safely assume to be a semantic one) between classifier and headnoun in the two types. The "true" classifier refers to an intrinsic feature of the head, while the measure refers to an extrinsic feature. Adams and Conklin offer no further explanation of this distinction, but other writers seem to have come to similar conclusions. Saul (1965:285) refers to "imposed quantifiers", a category in Nùng which she characterizes as "non-inherent". For a more detailed description of what is meant by "inherent" we may refer, as does Allan (1977:298) to John Locke's 1689 Essay concerning Human understanding. There Locke lists 5 primary qualities utterly inseparable from the body "in what estate soever it be". These seem to be based on the senses of sight and touch:

- (i) solidity
- (ii) extension
- (iii) motion or rest
- (iv) number
- (v) figure

Opposed to these Locke specifies the secondary qualities such as color, taste, smell and sound, which are not in objects

themselves, but are powers to produce these various sensations in us. Allan finds that none of these secondary qualities is the basis of classification in any classifier language, and he has done a very extensive survey. Classifiers referring to sounds occur in Thai but there is general reluctance to consider them nouns, probably because they are often innovated.

In Thai, the sense which is predominant in establishing the criteria of classification for objects is, of course, the sense of vision, supplemented by the tactile sense. The smell and taste of the referent have no import at all, and the sound only marginally, as mentioned above. Shape is most easily perceived by seeing and verified by touching.

In perceiving actions, vision is also the primary sense used, although sound is of some importance here.

Culturally salient criteria are also very important in Thai classes. These do not seem to be so restricted to dependence on vision: function of the referent and social status are two examples.

Thai standard measures are similar to measures in most languages: they are based on linear, areal and volumetric units as well as units of number. All these are regarded by Locke as intrinsic. Thai measures also refer to weight, price and time, which are not mentioned by Locke at all. Thus it is clear that if we want to characterize the difference between measures and other classifiers, we will have to isolate criteria other than those of Locke.

5.2 MEASURES AND REPEATERS.

Standard measures in general are mutually exclusive with full repeaters, as the unacceptability of 5.1 and 5.2 shows:

- | | |
|-----------------------------|-----------------------|
| 5.1 *kilokram sǎam kilokram | 5.2 *khǎæn sǎam khǎæn |
| kilogram 3 KILOGRAM | arm 3 ARM'S LENGTH |

Since its head and classifier are not lexically identical, 5.2 could only be acceptable as a "false (full) repeater"; even then the utter redundancy of measuring something with itself makes 5.2 unacceptable. Example 5.1 seems to be unacceptable because although /kilokram/ supplies unit reference it is not enough of an entity in its own right to be classified in turn. Some measures are related to full substantive nouns (like /khǎæn/ above) but others are not.

Another illustrative example is

- | | |
|--------------------|---|
| 5.3 klòŋ sǎam klòŋ | |
| box 3 | { a. BOX a. "Three boxes." |
| | { b. BOXFUL b. "Three boxes of boxes." |

which is ambiguously either a full repeater or a temporary measure. Example 5.3a is a repeater phrase where the head refers to a type of entity and three individual examples or occurrences of this type are being referred to by the NUM + CLF part of the phrase. There is the necessary synonymy between the head and the classifier, as required in a full repeater phrase, and therefore only one type of entity is being referred to here: boxes.

On the other hand, 5.3b is a measure phrase, where the headword is classed as a commodity (which in this case happens to occur in the real world in natural units, rather than as a mass. For the purposes of measurement the natural units are irrelevant). It was claimed above that measures are

2P predicates. Here the two predicate-positions (arguments) are filled by two different kinds of /klòõŋ/ "box": three larger boxes and several (empty) smaller boxes. The head-word refers to the smaller empty boxes as opposed to the larger full ones. These smaller boxes collectively constitute the commodity measured. The classifier refers to the units of measurement of that commodity, the larger boxes. Here the units of measurement are not standard; the larger boxes could be of any size.

Here also the conflict between static categories and dynamic processes is quite apparent: in terms of categories, the strategy or intention of the speaker to use 5.3 as a temporary measure makes the categories Temporary Measure and Full Repeater overlap. In terms of processes, the two processes of repeating and (temporarily) measuring are entirely distinct.

5.3 STANDARD MEASURES AS NON-ENTITIES

Standard Measures will be considered here as abstractions developed by complex societies to deal with their amassed commodities. These measures are standardized by comparison to some absolute standard, and the comparison must involve some kind of technology (such as weighing scales, standard containers, etc.) as mediators in the perception process. Another characteristic of Standard Measures is their exactness (see T'sou, 1977) a quality in clear contrast to that of visual impact.

As with all distinctions, there is an area of gray between opposing poles here. A good example is a unit of

weight. Coins have long served as units of both weight and value and even today Thai one-baht coins are used as an informal measure of weight (=15 grams). At what point did the form baht cease to refer to the concrete object (the coin) and begin to refer to the abstract concept of 15 grams?

Clearly no overnight change occurred and the development of the abstract sense may not even have occurred yet for some isolated villagers in remote areas which are not part of the money economy of the central developed areas. A basic assumption of this paper is that such a process of abstraction depends on a conceptual association between an object directly perceived (by vision primarily, verifiable by touch) and an attribute of that object which is not so immediately perceived. This second attribute may be understood, in most cases, only through the use of some sort of technical device. The simplest case would be an object as a measure of weight, length, or distance. Common recurrent events would become measures of time. But the point of transfer of sense from the object to some abstract standard measure depends on various cultural developments such as

- (i) conventional agreement or decree
 - (ii) a requirement of precision, in turn necessitated by refinement of material and amassing of collections of goods
 - (iii) a requirement of universality within a cultural area
- in short, all the trappings of higher level social organization. For this level of technology and organization, the old classification of objects on a personal basis, primarily by their visual impact and secondarily by their function, is ir-

relevant.

Standard Measures, then, contrast with the kind of non-standard non-technical unit based primarily on immediate visual impact, which is the basis of much of the Thai classifier system. Standard measures are exact, but they are not entities themselves. Thus unit reference and status as an entity are distinct. Lyons (1977:442-446) describes three ontological categories which are, roughly, the following:

(i) First-order entities:

...it is characteristic of all first-order entities (persons, animals and things) that, under normal conditions, they are relatively constant as to their perceptual properties; that they are located, at any point in time, in what is, psychologically at least, a three-dimensional space; and that they are publicly observable...[continued in a footnote] They are what Strawson refers to as basic particulars.

(ii) Second-order entities:

By second-order entities we shall mean events, processes, states-of-affairs, etc., which are located in time and which, in English, are said to occur or take place, rather than to exist ...

But second-order entities are much more obviously perceptual and conceptual constructs than first-order entities are; the criteria for re-identification are less clear-cut and the ability to refer to them as individuals depends, to some considerable degree, upon the grammatical process of nominalization.

... second-order entities are observable, and unless they are instantaneous events, have a temporal duration...

(iii) Third-order entities:

...by third-order entities we shall mean such abstract entities as propositions, which are outside time and space.

Ultimately, Lyons summarizes with the statement (1977: 445) "To say that something is an entity is to say no more than that it exists and can be referred to..."

Existence and capability of being referred to are basic to the acceptability of a given form as a repeater in the situational frame described above. Another requirement of the frame was plurality (which presupposes countability in English) but this may be an incidental factor. Roughly the same results can be obtained by using frames which do not require plurality.

Although status as a LP predicate (as defined above) and status as an entity (in Lyons' terms) are not proven identical, I will assume that the two statuses are equivalent and use the terms "LP predicate" and "entity" interchangeably in the remainder of this thesis.

Lyons later (1977:463) draws parallels between entities and quanta (read "measures") of a substance. He considers an amount of water or gold to be "individuated, re-identifiable and enumerable." It is true that expressions like "my drink" occur regularly in English, but the equivalent of such a phrase in Thai would be ambiguous between a limited quantum and a more general "kind":

5.4 lăw khǒŋ phǒm
whiskey POSS I(male) "my whiskey"

To make it a specific amount would require a container:

5.5 kǎæw khǒŋ phǒm
glass POSS I(male) "my glass; my drink"

Although the parallels which Lyons points out between measures and entities do exist, the structure of Thai makes a clear distinction between repeaters and (standard) measures, and one basis of this distinction is a division between entity and non-entity, reflected in the syntactic distinction

between those nouns which can repeat and those which cannot.

T'sou (1977:1215) maintains that units of weight, volume and distance imply no status as entity for their referents. On the other hand he sees certain collections and temporary measures as having a "definite sense of a well-defined discrete entity or entities" (T'sou 1977:1218), but with a sense of inexact quantity. T'sou gives some examples in English, adding that the range of each kind of measure may be different in different languages:

(i) two head of cattle	[+ exact + entity]
(ii) two herds of cattle	[- exact + entity]
(iii) 20,000 pounds of cattle	[+ exact - entity]
(iv) two kinds of cattle	[- exact - entity]

The first type seems to refer to physical entities, the second to groups, the third to standard measures and the last, of course, to kinds. T'sou's analysis agrees with the description presented so far here, namely, the contention that Standard Measures are not entities, but that temporary measures (such as physical entities and groups) can be. T'sou's four categories are supported by distributional evidence in Chinese: only category I can not occur with a Chinese particle glossed as "of" (as in "2 head of cattle"). Only category III cannot occur with ordinal numerals (e.g. *"the third pound of chicken"), and only category IV cannot occur with fractional numerals (as in *"half a kind of chicken").

Although Thai has no counterpart to the Chinese particle glossed as "of", the restriction on "half a kind" applies in

Thai as well as in Chinese. One area of difference which is more significant concerns the restriction on co-occurrence of ordinals and standard measures in Chinese: such a combination is possible in Thai:

5.6 sǎam wan rǎæk khǎw phǎw caj
 3 DAY first he satisfied
 "the first three days he was satisfied".

5.7 kiloo thǎi sǎam pen khǒŋ khun dǎæn
 KILOGRAM third be POSS Mr. NAME
 "The third kilogram (e.g. of rice, oranges, etc.) is for Mr. Dang."

5.8 kilomét thǎi hǎa nǐi kamlaŋ sǒm
 KILOMETER fifth this PROG repair
 "They're repairing the fifth kilometer (of this road)."

Use with an ordinal number presupposes some status as entity. It also presupposes that the entity be a member of a series or some kind of order. In both Thai and English, an expression like "the third pound of chicken" is slightly odd, but would be marginally acceptable if the sense of the standard measure were blended with the sense of physical entity, which in the case of meat would be a lump or a package. This blending is very common in casual speech and is probably the basis for the acceptability of examples 5.7 and 5.8 in Thai. In example 5.7 there need be no physical presence of a container. This sentence could occur in a shop, for example, when the customer is ordering, and before the goods ordered were actually measured out. Nevertheless, the examples do presuppose some second predicate-position (e.g. "rice" for 5.7) The time-lapse of some activity or state in fact constitutes the second predicate-position for measures of time. Thus in 5.6, being satisfied is the relevant state. Use with

an ordinal seems to presuppose the sense of entity to a lesser extent than use with a demonstrative. Use with a demonstrative implies more sense of entity since there must be a sense of nearness as opposed to distance, and the word is usually developed from a basic sense of pointing to a visible object. /wan/ "day", /kilokram/ "kilogram" and /kilomét/ "kilometer" can all be used with demonstratives. Thus, although 2 clear indications of status as entity occur with some Thai Standard Measures, these can be explained by

- (i) a blending of the sense of the measure with the culturally salient physical characteristics of the matter and form of the substance measured (e.g. 1 kilometer and 1 piece of road)
- (ii) the requirement of a second predicate-position which can be filled by previous mention or situation. The substance implied by this second predication is subject to the blending mentioned in (i).
- (iii) the existence of an alternate sense for some Standard Measures. In some cases this sense is a parallel perceptible entity (e.g. 1 day (24 hours) and period of sunshine)

Another indication of status as entity for Standard Measures is whether or not a classifier can itself be classified when it occurs as a noun. A simple test of whether a measure is standard or temporary should be to check whether the measure itself is classifiable. Unfortunately matters are not this simple. One problem is that there is a wide range of degrees of lexical transparency between senses of an item as measure and as full substantive. We have seen one example of a relatively transparent connection between temporary measures and full nouns with /klòŋ/ "box" (example 5.3). Other

examples are less transparent, for example

Table 8

<u>Lexical Transparency Between Measure and Full Substantive</u>		
Item	Sense as Measure	Sense as Noun or Verb
níw	inch	finger, toe
kham	mouthful, word	word, speech
thiaw	trip	to roam, to travel
dian	month	moon

Many items, like /níw/ "inch" and /dian/ "month" above belong to a group which, to further confound the issue, are ambivalently standard and temporary measures. Other examples of this type in English are words like a fathom, a foot, a barrel, etc. : all informal, roughly stable measures which have become standardized with the development of technology capable of supplying a more absolute standard. The classifier /wan/ "day" discussed above is a member of this group as well.

T'sou (1976:1239) finds that in Chinese the word for "pound" cannot co-occur with ordinal numerals. The word for "year", however, can. Therefore he argues that time measures are fundamentally different from physical measures, probably due to the antiquity of time measurements. If time units are indeed this distinct and ancient, I think it is probably because some of them are naturally occurring like "year", "month" and "day". These units have saliently perceptible correlates: the seasons, phases of the moon, dusk and dawn. The lexical items of any language which refer to these events would become standardized only relatively late in the exis-

tence of the language.

In contrast, units of weight and money are dependent on social interaction and technology. Only refined products need to be weighed. The use of simple balances and directly perceptible entities as measures would also predate standard measures of weight. The need and the means to measure weight and distance come relatively later in human development. The time units mentioned above are members of the "ambivalent" group; that is, they are naturally occurring entities but have been provided with standardized senses. Other time measures such as "century", "minute", and "second" seem to be much more primarily Standard Measures. Thus if significant differences can be found between time measures like /wan/ "day" (a directly-perceptible unit: roughly equal to a period of sunshine) and /natii/ "minute" (purely a standard measure) it would constitute good support for the perceptual basis of classification.

Unfortunately, both items seem to perform all the same functions: a Standard Measure like /natii/ cannot occur as a repeater. A construction like

5.9 *wan sāam wan
day 3 DAY

is marginally acceptable to the extent that in isolation informants can gloss the whole phrase as something like "three days" in the sense of 3 dawn-to-dusk periods or 3 working days. However, when a normal situation is sought for the utterance of a sentence containing 5.9 (i.e., informants try to make up a sentence containing it) none can be found.

Example 5.9 does not seem to occur in actual speech. Thus neither the natural unit /wan/ nor the Standard Measure /natii/ can occur as repeaters. With ordinals and with demonstratives /wan/ and /natii/ are equally acceptable and both must therefore be considered equally to be Standard Measures regardless of the fact that one is based on a perceptible unit and the other is not.

5.3.1 STANDARD MEASURES AS HEADWORDS

We have seen that Standard Measures are unacceptable as full repeaters. Compound Standard Measures do occur; for example

chânjlǎŋ	monetary or weight unit + government	= "official unit of money or weight"
kamlǎŋmáa	power + horse	= "horsepower"
piisǎæŋ	year + light	= "lightyear"
etc.		

But these are unacceptable as partial repeaters:

5.10 *níwfút sǎam níw
(English)inch 3 INCH

It is not to be assumed, however, that Standard Measures cannot occur in the headword position. A Standard Measure can be classified if the classifier is neither a repeater nor a partial repeater:

5.11 níw sǒŋ jàaŋ
inch 2 KIND "two kinds of inches"

The alternate sense of /níw/, "finger" is not considered relevant to the discussion here.

This kind of phrase could only occur in a sentence where the speaker is talking about /níw/ "inches". That is, the

non-entity is being referred to and (therefore) its existence is being asserted. That is, the concept of an inch is being objectified, reified, in a conversation which is, in a sense, a metalinguistic one: a conversation about measures, not the material or distance being measured. It is only in such a metalinguistic context that Standard Measures can occur as headwords. Note also that one criteria used to describe measures in general was the requirement that a second predicate-position be filled. In the example above, /niw/ acts as an independent entity and has no need of another noun. In fact it is functioning as a substantive noun and has lost its function as a Standard Measure. In this way it is true that Standard Measures are never themselves classified.

5.4 TEMPORARY MEASURES*

Temporary Measures are classifiers which perform the same kind of semantic function as Standard Measures: they provide indefinite unit reference and quantify a headword. They are thus 2P predicates and cannot be full repeaters, like Standard Measures. It is again Adams and Conklin who have expressed the central point about Temporary Measures. They are "...arbitrary, for anything can function as the unit of measurement" (1974:3. My emphasis.) Of course here they mean any noun, including classifiers, even Full Repeaters.

Temporary Measures differ from Standard Measures in that they are not standardized and not exact: a mouthful, a truck-

*Y. R. Chao's term (Chao 1968:585). Temporary Measures = nonstandard measures.

load or a day's journey are examples. Due to the arbitrariness of function mentioned by Adams & Conklin, it is not really possible to characterize temporary measures in a very precise way. Temporary measures provide information on quantity by referring to the physical unit involved (i.e. the group, arrangement, set, part or natural entity) or by referring to the container. There is no essential difference between the use of container-units and other units as temporary measures. In the last section we saw how the standard Measure sense is often blended with the sense of the natural unit involved. There is a similar tendency with container units, but the blending is easier to resist, since the container has existence when empty, as an entity in its own right. For example, consider the "ambivalent" measure /thǎŋ/:

- /thǎŋ/ N. 1. a bucket, pail, tub, barrel, tank. C.
 2. unit of capacity equivalent to 20 liters;
 (loosely) a bucketful, a barrellful, etc.
 (Haas 1965:214)

As classifier, /thǎŋ/ clearly refers to the contents, either exactly, as a standard measure, or "loosely" as a temporary measure. As noun it refers to the container, not the contents. There will always be some semantic spillover by association, depending on the cultural salience of the container in question, but the container as unit of measure and the contents as commodity measured are usually clearly distinguishable. No blending of Standard Measure and first-order entity takes place, as is the case with standard measures of weight.

There are numerous and complex indigenous Thai systems

of weights and measures, some well-standardized. These have been generally discarded (except for those associated with some very traditional crafts) in favor of the international metric system.

5.5 PRIMARY AND SECONDARY INFORMATION

We have seen how some forms can function alternatively as temporary measures and as full repeater. But what of the other categories? We have claimed that any classifier can be used as a temporary measure. This would include partial repeaters like /baj/ "S2D shape" and non-repeaters like /chín/ "piece". Even when such classifiers are not used as measures they still provide information on the quantity of the headword, but only incidentally. The primary function of /baj/ and /chín/ is to provide unit reference by means of focusing attention on a relevant attribute: the shape in the case of /baj/ and the partitive nature of the unit in the case of /chín/. This cannot be done without also providing some quantitative information. In fact the criteria of status as entity and quantification are inextricably bound up together.

This is also the case with second-order entities. Consider the colloquial /îîak/ "a gulp" where the status as entity is determined at least in part by the time elapsed during the action. Since the period is relatively short, it is perceptually an instantaneous or point-of-time occurrence. The quantity of water or liquid swallowed is also a very salient aspect of this action. Compare /îîak/ "a gulp" to

[^]/~~hi~~ak/ "a gasp or sigh" where the same sort of time element is involved, but the volumetric implication is clearly much less salient. A gulp can clearly be considered a non-standard measure of liquid volume, while a gasp or sigh is far less likely to be considered a volume of air expended or inhaled. Anything, however, is a potential temporary measure, and [^]/~~hi~~ak/ is no exception. Thus it is possible to conceive of unusual situations where a sigh or a gasp could be used as measures. The difference in the salience of a gulp as a volume, as opposed to a gasp as a volume is based on encyclopedic (as opposed to lexical) factors: a gulp of water is usually an intentional act focused on the volume of water; a sigh is often an involuntary act focused on some external or secondary significance (such as a signal that one is tired, etc.).

Returning to our comparison of measures and classifiers like /baj/ and /[^]chin/, we have seen that information provided by the former classifier is focused on the directly-perceptible attribute, the shape. But information is also provided on the quantity involved. Shape and "partitiveness" are aspects of natural entities, but not of indefinite masses or commodities considered generally.

The primary difference, then, between measures and non-measures (which are not full repeaters) seems to be that whereas the non-measures provide information on the perceptible unit primarily and information on quantity secondarily, temporary measures provide information on quantity primarily

and on characteristics of entities secondarily. Standard Measures provide information on quantity first and provide no information on the entity, whether or not some form of entity is salient in the commodity measured. These generalizations are summarized in Table 9.

Table 9

Primacy of Information in Classifiers		
Classifier Category	Primary Information (Focus)	Secondary Information
Full Repeater (e.g. /prathêet/ "country")	Status as Entity (itself)	Whole entity in contrast to any specific aspect
Standard Measure (e.g. /kilokram/ "kilogram")	Quantity	None
Others:		
(a) if measure function emphasized (e.g. /baj/ "S2D" shape")	Quantity	Salient characteristic of entity
(b) if status as entity emphasized (e.g. /baj/ "S2D" shape")	Salient characteristic of entity	Quantity

Whether the entity or quantity is primary depends on the speaker's intention and is often unmarked except for situational or contextual clues, such as the type of question one is responding to.

6.0 OTHERS

We have so far distinguished and described some of the major categories of Thai classifiers: Full Repeaters were seen as independent entities, providing enough unit reference themselves to act as their own classifiers. The repetition of the same form constituted a syntactic criterion for definition. Measures were seen as either Standard Measures (technical abstracted non-entities) or as (non-standard) Temporary Measures: units used as measures, according to the intention of the speaker, to express a quantity. Measures thus had no overt syntactic distributional criteria. Ambivalent measures were traditional units which had become standardized, with alternate senses as unit or as measure. Measures and Full Repeaters were seen as mutually exclusive. Partial repeaters were seen as compoundable morphemes, some (PR Repeaters) capable of alternatively acting as Full Repeaters, and others incapable of occurring without a second argument (e.g. /baj/ "S2D shape").

The remaining classifiers have not been labelled more specifically than "other", although many of them, like /baj/, are capable of partial repeating. Do they constitute a group equivalent to Hla Pe's "true classifiers" in Burmese? They do, in fact (provided that the partially repeating "others" are included in the group). Thus Thai classifiers can be categorized as three distinct and mutually exclusive types, the types of Hla Pe. There are two conditions, however. One condition is mentioned above, that Partial Repeaters

overlap with both Full Repeaters and Others. The other condition is that all classifiers which are not Standard Measures are potentially usable as nonstandard measures, some more likely than others.

These divisions could be represented in a table:

Figure 4

Categories of Classifiers in Thai			
Full Repeaters		Others	
Exclusive Repeaters	Partial Repeaters		Standard Measures
	PR Repeaters	"True" Classifiers	
		PR "True" Classifiers	

← potential nonstandard measures →

Here the residual group has been reduced still further. The final unlabelled group will be described more fully in this section. Nonstandard measures are not included in the boxes proper in order to illustrate their partial dependence on speakers' intention. That is, use as a nonstandard measure is only an alternative to use as a Full Repeater, PR Repeater, etc. Ambivalent measures are considered to be homonyms (primarily for ease of representation): one sense as Standard Measure, the other as non-standard measure.

There is a problem with the use of the term "True Classifier". For terminological clarity (I hope not at the expense of terminological simplicity) I would like to reserve the term "classifier" for the wide-ranging definition arrived at in section 2 of this paper. That makes Repeaters and Standard Measures no less "true" classifiers. Thus the term

"True Classifiers" is not an entirely happy choice for this group of non-measures which are not Full Repeaters. For lack of a better term it will be retained with quotation marks around "true".

The limitations of a static categorization have been reviewed above in section 5. Although categorization itself can be misleading (e.g. by setting up distinctions that do not exist in the language; by obscuring relationships that apply across categories, etc.), nevertheless the categories that have been set up do explain a great deal about the internal functioning of the classifier system and even provide a certain amount of information about classifier selection.

The most significant aspect of the categorical system proposed here is the criteria of categorization. These criteria are reviewed below in section 6.1, after the blank spaces of Figure 4 have been filled in.

6.0.1 GENERAL UNITS

Now we are in a position to examine the group of "Others" a little more closely. There are approximately 43 items in this group. The group itself splits into 2 subgroups. One of these, labelled "Extended Classifiers", is discussed in the next section. The other subgroup divides relatively neatly into the following (occasionally overlapping) semantic subcategories, with a small number of (inevitable) exceptions:

Kinds: /khanăan/	-a kind of medicine; a prescription or formula
/camphûak/	-group, type, species
/chanit/	-kind, sort, category, variety, type
/prakaan/	-kind, thing, item, point, count (law)

/praphêet/	respect, means -kind, category, class, type, distinction, difference, subdivision
/phan/(^{W33A})	-sort, group, class
/phan/(^{W33A})	-kind, type, sort
/phan/(^{W44})	-strain, breed, species
/jään/	-kind, sort (in general)
/sathään/	-(eleg.)kind, item, respect, means

Occasions:

/khrân/	-occasion
/khamróp/	-time, round, turn
/qúat/	-occasion, time, period (of a larger period)
/taa/	-eye; turn (in a game); crucial moment; time
/thôót/	-section, part, relay, shift
/thii/	-time, instance, occasion (recurrent)
/nát/	-shot, round; meeting, event
/hôn/	-time, occasion
/tôn/	-part, section (of space or time)
/hâak/	-a sigh or gasp
/júk/	-age, era, period
/sòot/	-case, instance, section, part
/rôóp/	-round or cycle
/waarâ/	-time, occasion, period
/chabáp/	-issue, edition, copy; banknote; lottery ticket; letter; document

Sides:

/khâan/	-side; one of a pair
/dâan/	-side; part (of a room); section (of a city); field (of study); viewpoint
/bâan/	-side, part
/fâaj/	-side, team, party, group
/thít/	-direction, point of the compass

Parts:

/sòot/	-case, instance, section, part
/súan/	-part, portion
/chín/	-piece, part (of anything whole)
/maatráa/	-section or clause (of law)
/tôn/	-(severed) part; section (of space or time)
/thôót/	-section, part, relay, shift
/siañ/	-piece, part, fraction

General Characteristics:

/tammæn/	-position, rank
/hææn/	-place, location
/khanaat/	-size, extent, degree
/santhään/	-shape, appearance, outline, form, charac- teristic

What is the semantic basis (if any) for the category of

which these groups are members? The first and most obvious semantic factors have already been described in the isolating of the group: as non-repeaters they are 2P predicates and non-entities. They are not compoundable and therefore not capable of partial repeating. They are not Standard Measures.

Further, a high level of generality can be noted, both in the senses of all the General Units so far presented, and in the range of nouns they can classify. "Generality" is a difficult concept to describe precisely, but the General Units seem to be based on criteria of classification which are more complex than, say, those classifiers based on a criterion of visual impact. General Units (with exceptions listed below) do not give information on the specific shape of the object classified. For example, /lúuk/ "3D shape" can be seen as a direct result of the visual impact of an object, but /jàaŋ/ "kind" involves the assessment of perceptual information plus the added cognitive operation of relating the object to a superordinate category. Similarly /chín/ "piece" requires the additional operation of relating the object to some whole, some collection, or some mass of which it is part.

A classifier like /sǎnthǎan/ "shape" is undeniably perceptually-based, yet still involves the additional operation of relating the object to some superordinate category as in

- 6.1 mii laksaná' sǎnthǎan klom
 havè characteristic SHAPE round
 "(It) has the characteristic of round shape."

Some vague or indistinct shape, on the other hand, would be classified by /rûup/ "image, form, shape" (a partial repeater), or by various nouns meaning "form, image, etc." which do not normally function as classifiers. For example,

6.2 chan hěn pen rân̄takhûm
 I(fem.) see be shape indistinct
 "I saw an indistinct shape."

Similarly, among the General Units are several items like /sòot/ "case, instance, etc." which do not refer to any physical object or event at all. I assume that these also require complex cognitive operations to identify.

An exception to the generality of reference of these General Units is the sub-category of Occasions. This group is quite unique and could alternatively be seen as a kind of measure of the action or event occurring on each occasion. However, the group has been included here to avoid the necessity of setting up yet another subgroup of measures. The Occasions are certainly not Standard Measures and they do refer to naturally-occurring perceptually salient units, but they refer to second-order units of occurrence rather than substances. The similarity of this group to measures is a product of their frequency of occurrence as temporary measures and of the factor of time essential to their sense.

The factor of generality of reference is not common to all the remaining General Units, either. There are some exceptions which are unmistakably uncompoundable yet supply information on specific shape characteristics:

/thăəw/	"line, row; section, district"
/phāin/	"strips, sheets; sections, plots"
/wām/	"slice; ring"

Except for these items, the General Units group could be said to convey very general information about the head, as opposed to the more particular information found in the PR Natural units, such as /baj/ with the sense of "S2D shape", /tua/ with the sense of "body shape", etc. As an example of the generality of the group of General Units, consider /sǎnthǎan/ "shape, appearance, etc." This item is a hyponymic superordinate of the partial repeating classifiers above, as well as of the exceptions, the General Units which convey information on shape.

Of the atypical General Units which refer specifically to shape, /thǎæw/ "line, row, etc." can be seen as a repeater, but only in an inchoative sense, as with a verb of creation or construction. For example

- 6.3 thahǎan tân thǎæw sǎam thǎæw
 soldier set-up line 3 LINE
 "The soldiers formed three lines."

/thǎæw/ does occur in some compounds but these are mostly verbal and do not occur in classifier phrases.

The classification of /thǎæw/ as a General Unit is based on non-occurrence as a partial repeater. This restriction of occurrence in turn is based upon some sort of unsuitability of /thǎæw/ for further specification in compounding, although adjectives are acceptable in constructions with /thǎæw/. For example, */thǎæw thahaan/ line + soldier, is unacceptable, but /thǎæw jaaw/ "a long line" is quite all right. The additional senses of /thǎæw/, "section, district" are limited to occurrences with demonstratives and are thus

not considered full classifiers.

There is disagreement among informants on the acceptability of a structure like

6.4 phǎ̌nthĩidin sǎam phǎ̌in
 land 3 {a.* LARGE S2D SHAPE
 b. PLOT

On the basis of the requirement of synonymy between repeated elements in a classifier phrase, 6.4a would be rejected.

/phǎ̌in/ in the compound /phǎ̌nthĩidin/ "land" refers to an area, not a shaped object. One informant who considered 6.4 to be unacceptable explained that "land" is fixed and cannot be flipped over like a S2D object. With the sense of "plot" for the classifier, 6.4b would be acceptable, making /phǎ̌in/ a Partial Repeater, not a General Unit.

With the exceptions noted, then, General Units can be characterized as providing unit reference by referring to more general characteristics of the referents of the headnouns.

The General Units also exhibit a high level of formality with many borrowings. However, there are many very common (therefore less formal) classifiers here as well, especially /jàaŋ/ "kind" /hǎ̌æŋ/ "place", and /chín/ "piece".

The only explanation I can offer as to why the members of the category of General Units are not compoundable is to hypothesize that the level of generality may be a relevant factor: at a certain level of generality, concepts do not admit of hyponymic varieties, only individual cases. It is these varieties that usually require a compound when they are expressed. For example, the concept of "size" has an

unlimited range of examples from big to small, but there are no commonly accepted kinds of size. I have no satisfying explanation either why the exceptions are not compoundable, only some suggestions. This unsuitability for compounding might be related to the inchoative sense of /thǎæw/ as something formed rather than something simply existing.

However, other compoundable classifiers are "formed" units, including several similar in meaning to /thǎæw/. These items are:

/tâp/	"a thatch (S2D object); a row"
/thiŋw/	"row of trees, row of mountains"
/thiāk/	"line of mountains; line of descent; line (in general); order; sort"
/nææw/	"line; row; strip"
/phǎit/	"line; row; range or chain of mountains"

All of the above are capable of partial repeating and all (except /thiŋw/) can occur with the inchoative verb /riaŋ kan/ "be arranged".

There may be another possible common factor among the exceptions in the General Units group: they all have secondary (or "double") shape features. For example,

/thǎæw/	is a line	(S1D) of standing objects	(S1D)
/phǎin/	can be a strip	(S1D) of cloth or land	(S2D)*
/wân/	can be a slice	(S2D) of anything	(S1D) or (S3D)

One generalization is for certain: Because the category of General Units is based to a large extent on the fact that its members can not enter compounds, the process of compounding becomes even more important in understanding the process of classifying.

* As pointed out by Denny (personal communication).

6.0.2 EXTENDED CLASSIFIERS

Among the "Others" are four words which have developed senses as classifiers which differ to varying degrees of transparency from their senses as nouns. All four can be said to have lost their senses as full substantive nouns and thus can only be entered in a dictionary (in the role as classifier, not as noun) as simply "classifier for..." plus a list of the nouns they classify. Some of them in turn have lost any clearly perceivable connection to the full range of nouns they classify. The four are listed in Table 10:

Table 10
Classifiers with "Extended" Senses

Item	Use as Classifier	Use as Noun
ch ^h ak	CLF for elephants	-with sense as "rope"
ton	CLF for giants, demons, hermits, etc.	-in compounds with sense as "self; body; substance"
l ^h em	CLF for knives, books, oxcarts, candles, etc.	-none
an	CLF for small S1D physical objects; physical objects in general, odd-shaped objects; also used to provide unit reference to general terms (as instances) -a "waste-basket" category of classification.	-none

The similarity of Table 10 to Table 6 is not accidental. The items in Table 6 (and many more like them) exhibit extended senses like those of Table 10. The senses as "non-repeater" given in Table 6 could be added to Table 10 as long as it is kept in mind that items in Table 10 are not repeaters of any kind, and that items in Table 6 have multiple senses, with only one (or some) of which they are non-repeaters. Thus we could consider /baj/ "S2D shape" as a Partial

Repeater. /baj/ (with the same sense) can be classed as an Extended Classifier when it is used as a non-(partial) repeating classifier as in

6.5 kradàat sǎam baj
paper 3 S2D-SHAPE "three sheets of paper"

Thus, any classifier which has no alternative function as a full non-compounded substantive noun also functions as an Extended Classifier in the cases where it does not partially repeat. Items with this alternative function are characterized by (i) use as a "class term"

(ii) difficulty for native speakers in supplying the item with a meaning, and in some cases

(iii) lack of a function as full substantive noun.

The use of classifiers in this role is very common. Most items refer to shapes. Some examples are:

6.6 mǎmúan sǎam tǒn
mango 3 PLANT "three mango trees"

6.7 lúukkuncæ sǎam dɔɔk
key 3 FLOWER-SHAPE "three keys"

6.8 mǎa sǎam tua
dog 3 BODY-SHAPE "three dogs"

An exception is the classifier /khon/ "person" which is a class term but retains the same sense in all of its functions: full repeating, partial repeating and as Extended Classifier in such cases as

6.9 dèk sǎam khon
child 3 PERSON "three children"

The items in Table 10 make a good example of degrees of lexical transparency, from relatively transparent to total opacity. The classifier /chǎak/ is rapidly dropping out of

use as elephants lose their significance in modern society. However, for Thai speakers who still would use /châak/ there is probably a great deal of conflict between the two uses of the form, as listed in Table 10. With /ton/ the situation is similar, except /ton/ no longer appears as a free morpheme. Finally, with /lêm/, no connection at all is left to any substantive noun sense, and exclusive function as classifier has developed. In this sort of scale of transparency/opacity, classifiers like /châak/ and /ton/ can be seen as transitional between senses as nouns which can also do duty as classifiers and senses restricted to classifier function only.

In this connection note that in Table 10 there are two items which do not occur as nouns at all, and a meaning cannot be assigned to them even in their function as classifiers. In one conception they could be considered the only two "true" classifiers in Thai. However, we are reserving the label "True" Classifier, as mentioned above, for classifiers which are not Full Repeaters and not Standard Measures. These two "meaningless" classifiers (namely, /lêm/ and /an/) are discussed in detail below.

6.1 CRITERIA OF CATEGORIZATION

The biggest problem in categorizing classifiers (and in fact the one which has prevented a straightforward semantic analysis) is the mixture of semantic and syntactic criteria. Repeaters, we have claimed, can be isolated by semantic criteria, subsumed under the term "entity" (or perhaps "entity-in-general"). The syntactic criterion of full repetition correlates with this status as entity. Partial Repeaters are

distinguished primarily by their syntactic structure and only secondarily by hyponymy between head and classifier. Finally, consider the group unlabelled in Figure 4: the "True" Classifiers. This group is isolated primarily by negative syntactic and semantic criteria, as non-repeaters and non-entities. The clearest common positive characteristic of these residual words is their basic function as classifiers: they provide reference to various characteristics of whatever the headword refers to, and these characteristics are in turn used to provide unit reference.

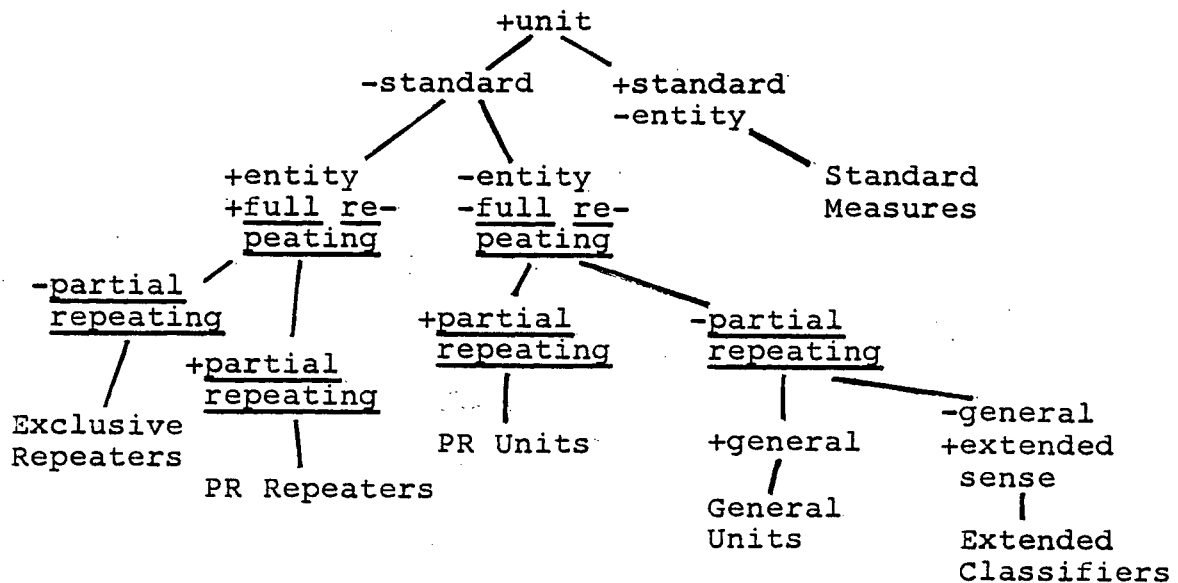
"Natural Entity" is a term which nicely emphasizes the distinction between the units discussed above and the "artificial" units of Standard Measures, isolated on the basis of this artificiality and on the basis of their non-entity status. However, we have earlier emphasized that only Repeaters are in themselves complete entities. Furthermore, the term proposed is a controversial one. The claim here then will be simply that while all classifiers provide unit reference, Standard Measures provide standardized units and Repeaters provide units which are entities.

The residual group is further divided into those classifiers which are capable of partial repeating and those which are not. We have been using the initials "PR" (for "partially repeating") for repeaters of this type. The label "PR Units" will be used for these words, which mostly refer to shapes, functions, groups and parts.

The second group of residual words, those which cannot enter into compounds or partially repeat, contains the two

subgroups discussed above: General Units, characterized by a high level of generality, and Extended Classifiers which are specific and have vague meanings or none at all as classifiers. These criteria can be represented in terms of two-valued features as in Figure 5 below. The features proposed here and later in this thesis are ad hoc elements selected for their criteriality in the specific distinctions being examined. No claim of universality is made. In Figure 5 syntactic features are underlined.

Figure 5
Criteria of Classifier Categories



In Figure 5 the feature [+standard] refers to the use of a technologically-derived standard to quantify the headword exactly. The negative value of this feature, [-standard], refers to the use of

- (i) direct perception (vision, verified by touch) to provide unit reference to first-order entities.
- (ii) direct perception (vision and hearing, primarily) to

provide unit reference to second-order entities, and
(iii) cultural values and distinctions (including logical
distinctions) in interaction with (i) and (ii) above,
to provide unit reference to third-order entities.

An alternative to the feature [\pm standard] is T'sou's
(1976) feature [\pm exact], which makes approximately the same
distinction.

Figure 5 also provides the rough data for a schematiza-
tion of classifier selection, at least to the general level
of the broad categories specified here.

7.0 EXTENSIONS

7.1 BASIC SENSE

Before we can examine the two classifiers mentioned above, for which senses are not readily available to native speakers, we need to look generally at how senses could be derived and, more importantly, whether such senses are indeed worth positing. I do not think that it is necessary to insist that all lexical items have a sense (for example, to in English infinitives). Yet it is a basic assumption of this paper that except in very general citation-form examples, lexical or syntactic differences always cause semantic differences. It is a factor of the total communication situation whether these differences are significant or not. Jones (1977:9) concurs. Within the broad categories being described here, classifiers group items together according to semantic criteria in the majority of cases. This fact makes it worth the effort to examine carefully at least the possibility of providing a sense for those classifiers not readily glossed. Sometimes these senses must be expressed in lengthy paraphrases or lists of characteristics. The inconvenience of glossing such senses is a different matter from their validity.

There are more "meaningless" classifiers than these two. All of the classifiers of this type, however, refer to physical characteristics (in at least one of their senses) and seem to be difficult to furnish with meanings because they refer to non-entities like /baj/ "S2D shape" or because through a his-

torical process of extension of meaning the relating criteria have been obscured.

Underlying any attempt to furnish these "meaningless" classifiers with a sense is the assumption that the criteria of classification can be equated with the sense of the classifier.

J.P. Denny (personal communication) has emphasized that the meaning of a classifier cannot be derived from the related noun sense. He stresses that it can only be derived from an examination of the words classified by the classifier in question. He does allow, however, that the sense as noun can be a useful clue to the understanding of the grouping that does occur.

In Thai, almost all of the classifiers have alternative functions as nouns, with the same or related sense. In those cases where the senses in the two different syntactic roles are identical, there seems to be no significant semantic difference between the following styles of listing in Haas 1965:

- (i) separate, but identical senses:

/wan/ N. 1. day. C. 2. day (p. 501)

- (ii) "classifier for":

/hò/ N. 1. package C. 2. clf for packages, for things wrapped in packages. V. 3. to wrap, package (p. 577)

- (iii) identical senses:

/phajaan/ ...N,C. syllable. (p.355).

/rian/ ...N. coin; medal; dollar. C. 2. idem. (p. 591).

where N=Noun, C=Classifier, and idem=the same in meaning as the preceding. Of these examples, only /rĭan/ (for the first 2 senses) and /phajaan/ are listed by Haas as repeaters*.

For those classifiers which do not have alternative functions as full nouns with identical senses, native speakers are able, in most cases, to come up with a meaning. This is probably done unconsciously in a way similar to that outlined on p.116 according to Denny; namely reviewing the kinds of headwords with which the given classifier usually occurs.

Some classifiers do have clear, easily elicited senses, but no sense as noun. With these again there is variety in Haas 1965 as to the style of entry: some entries simply have a sense as classifier. Others have additional information with "classifier for...". For example

/chín/ C. 1. piece (of anything whole) hence, classifier for pieces of clothing, furniture, bread, meat, bones, work (a specific task) etc. (p. 147)**

/jàan/ C. 1. kind, sort, variety (hence clf for articles, utensils, sports, etc.) (p. 604)

*In some cases Haas furnishes an entry with a classifier but does not supply the entry with sense as a noun or verb. These must be errors since a classifiable form must be able to act as head and therefore be a full substantive.

**/chín/ can be used to classify clothing which is incomplete: cut but not yet sewn. In this sense /chín/ classifies pieces of cloth, not clothing.

In other cases /chín/ can classify collections or generalizations like /khrĭan mĭi/ "tool" /khrĭanjót/ "insignia of rank" etc. Here it seems to be referring to parts of a whole collection which may themselves be discrete objects. /chín/ may have a generalized specifying function when it classifies such collections, much like the classifier /an/ with which it is often joined in elaborate colloquial expressions. Following the pattern of this second sense, /chín/ can probably classify /khrĭanrĭan/ "furniture" and /krĭan nŭnhòm/ "clothes, wardrobe", although I have no agreement from informants on this.

There are other entries as well which list only a sense as classifier in the style "classifier for...". For these I have supplied my own gloss, based again (rather informally) on the nouns classified and the relation of the classifier to those nouns. Such glosses are the "small S3D shape" type, quite unfamiliar to native speakers. Such glosses are quite pragmatically useful and can be justified by reference to nouns classified and contrasts with other classifiers. They are relatively easy to posit, since the majority of classifiers which are not easily given meanings by native speakers (or which do not occur as full substantive nouns) classify a range of nouns which is quite uniform in terms of salient common characteristics.

With the two "meaningless" classifiers, however, such an informal process becomes inadequate because of the wide range of senses of the nouns they classify. It is necessary to find a more accurate way to supply a sense for /lêm/ and /an/.

As has often been pointed out (see Noss, 1964:105, for example) the connection between the nouns classified by these items has obviously been obscured by semantic change due to cultural and historical factors. There has obviously been some extension according to criteria of shape and function, not only in the case of /lêm/ and /an/, but in many of the other classifiers. In order to explore the path of this extension, including the end-point and the beginning, it is necessary to have a place to begin, a point of entry. We have such a point in the range of nouns within one class. This semantic range constitutes the end-point. Various paths of

extension can be traced using evidence from

- (i) polysemy
- (ii) compounding
- (iii) common classification
- (iv) semantic relations perceived by native speakers between items
- (v) known facts about the behaviour of classifiers, including those proposed in this paper, and the most common criteria such as shape and function.

The path of extension can be fairly well traced if the final result is known, as well as something of the possible routes along the way. However, an essential factor is still missing, the starting-point. Here such an original sense will be referred to as the basic sense.

There are at least four ways to establish the central sense of a closely-knit overlapping set:

- (i) choose the sense which links the other (more peripheral) meanings.
- (ii) choose the sense associated with the form when it is used in isolation. (the first two methods are suggested by Nida 1975:143)
- (iii) directly elicit the "best example" of the set. (from Rosch 1973:143)
- (iv) choose the sense with the greatest number of semantic components in common with the other members of the set.

These methods apply best to close-knit overlapping sets, and have limited use when applied below to the problem of finding a basic sense for /lêm/ and /an/. The same is generally true of the application of the methods listed above for tracing the path of semantic extension. However, a great deal of information can be amassed in this way, and at least a rough indication of the semantic structure resulting from the extension can be provided. One major question remains, and that is whether or not this exercise is to be a historical reconstruction or not.

7.2 DIACHRONY AND SYNCHRONY

The approach used here has clear implications for the historical semantics of Thai and in fact makes verifiable claims about historical fact. Nevertheless the conclusions of this paper are best seen as synchronic statements derived from semantic evidence as it is revealed in present-day data. Since the claims made here are based on synchronic evidence they must agree with other synchronic linguistic and psychological evidence. As will be apparent below, the structures posited here can be disproved by historical or cultural evidence.

A completely diachronic approach would require a good knowledge of both traditional and classical Thai culture, and of Thai ancient history. Such an approach is ultimately a worthwhile endeavour. Lyons refers to the widely-recognized principle that "the history of the vocabulary of a language cannot be studied independently of the social, cultural and economic history of the people speaking that language" (1977: 620). Both Denny (1976b:128) and Noss (above) point out the importance of historical study.

On the other hand, a totally psychological approach (for example, using questionnaires and association tests) would be subject to factors of idiosyncrasy and current events.

I have claimed that the method to be employed below is synchronic rather than diachronic because it is based on evidence that is neither historical nor psychological. This is not an absolute distinction, since factors of a psychological nature are clearly significant, especially the emphasis plac-

ed on perceptual salience. Also, in difficult cases where several possible paths of extension exist, the axioms of "personal sense before social sense" and "technologically simple before technologically complex" have definite influence. Nevertheless, I consider the approach taken below to be a primarily linguistic one since it depends essentially on data supplied by dictionaries and native speakers. In actual fact, the basic sense (if it can be specified at all) is probably identical with the historically original sense as noun, but this is not an essential claim of this thesis. It is because of this close connection with historical development that historical evidence contradictory to the semantic structures outlined below for three classifiers would necessitate a reformulation of these structures to bring them into accord with the historical facts. Put in other words, the structures presented below are the results of historical change of meaning and inevitably reflect that process of change. But like a fossil record they exist wholly in the present. In this way "...the study of the lexicon is at the crossroads of a historical and contemporary (synchronic) view of language..." (Leech 1974:226).

7.3 IN SEARCH OF A SENSE FOR /lēm/

7.3.1 THE CLASS OF /lēm/

The only way that /lēm/ can be entered into the dictionary is as "classifier for...". The referents listed below in Table 11 and 12 have been reported from various sources to be classified by /lēm/. Some are relatively doubtful but all

possibilities have been included here. Doubtful cases are, for example, the classification of /chóon/ "spoon" and /sôm/ "fork" by /lêm/ since modern speakers use other classifiers for these. The classification of /ŋaa/ "(elephant's) tusks" by /lêm/ is attested only by Frankfurter (1900:53), and such classification is today obsolete.

Table 11
Classifiers Co-occurring With /lêm/

classifier:		/dâam/	/khan/	/an/	others
/mîit(phráa)/	"knives"	x		x	
/khwään/	"axe"	x		x	
/kankaj/	"scissors"			x	
/khiaw/	"sickle"	x			
/kanchiaŋ, phaaj/	"paddle, oar"	x		x	R (/kanchiaŋ/)
/chóon/	"spoon"		x	x	
/mîitkoon/	"razor"	x		x	
/siw/	"chisel"	x		x	
/còp/	"hoe"	x		x	
/dâap/	"sword"	x		x	
/dâapplaajpîin/	"bayonet"			x	
/thuan/	"lance"	x			
/ŋaa(cháaŋ)/	"(elephant) tusk"			x	/khâaŋ/
/sôm/	"fork"		x	x	
/khêm/	"needle"			x	
/khěmmùt/	"pin"			x	/tua/
/kwian/	"oxcart"			x	
/lîan, lóo /	"sled, sledge"			x	
/năŋsăi/	"book"				/chabàp, rîaŋ, phũuk/
/phát/	"fan"	x		x	
/thian/	"candle"				/thăaŋ/
/rôm/	"umbrella"		x		
/wii/	"comb"			x	
/((thăj)khrâat/	"harrow, rake"	x	x	x	
...	"wheel-barrow"			x	

Notes: Straight razors take /dâam/ "handle, hilt, holder, sheath". Modern style razors take /an/ (the general classifier). The classifier /khan/ means "long handle". The "others" column contains classifiers with the following senses: R means "repeater"; /khâaŋ/ means "side; one of a pair"; /tua/ means "body-shaped"; /chabàp/ means "issue; copy"; /rîaŋ/ means "story"; /phũuk/ means "(tied) bundle" and

/thæ̂əŋ/ means "bar, ingot". There is no Thai form given for wheelbarrows because they are seldom (if ever) used by Thais, and thus they are not commonly referred to.

An x in a classifier column opposite an item means that at least one informant, dictionary or grammatical source has listed that item as being classified by that classifier. The item /hǎaŋsǎa/ "rudder, tiller, helm" might also be classified by /lēm/ but the informant who suggested this was not sure.

Table 12
Criteria of Classification by /lēm/

CRITERIA:	of shape					of function	
	S1D	S2D	HAN	CUR	PNT	CUT	PCE
knives	x	x	x	(x)	(x)	x	(x)
axe	x	x	x			x	
scissors	x	x			x	x	(x)
sickle	x	x	x	x	x	x	(x)
paddle, oar	x	x	(x)			(x)	
spoon	x	x	x	x		(x)	
razor	(x)	x	x			x	
chisel	x	x	x	(x)		x	
hoe	x	x	(x)			x (dig)	
sword	x	x	x	(x)	x	x	x
bayonet	x	(x)	(x)		x	(x)	x
lance, spear	x		(x)		x		x
tusk	x			x	x		x
fork	x	(x)	x	(x)	x		x
needle	x				x		x
pin	x				x		x(hold)
oxcarts			x*	x*		x *(transport)	
sled, sledge		x	(x)*	(x)*		x *(transport)	
books	(x)*	x					
fan		x	x				
candle	x			x*	x		
umbrella	x	(x)	x		x		
comb	(x)	x			x	(x)(comb)	
harrow, rake	(x)	x	x		x	(x)(rake)	
wheelbarrow			x			(transport)	

In Table 12 an x in a criteria column means that I am reasonably confident that the item opposite possesses that characteristic; further, that that item exhibits the criterial characteristic to an extent sufficient for that character-

istic to be perceptually salient. The various salient characteristics which are criterial are:

S1D: saliently extended in one dimension (length)
 S2D: saliently extended in two dimensions (flat)
 HAN: with a handle, either long or short
 CUR: curved or round
 PNT: pointed
 CUT: primarily used for cutting or chopping
 PCE: primarily used for piercing, stabbing, jabbing, etc.

No x for a given combination of item and characteristic means that I feel the item does not exhibit the characteristic enough to be considered salient. Bracketed x's mean that I have insufficient factual information on the item in question, but assume that the criterion of that column is exhibited to a significant extent by that item. An asterisk after an x indicates what may seem an unusual combination of salient characteristic and object. These cases are explained in the text below.

The first question about Table 12 is, of course, concerning the criteria selected as salient. The salience of a given characteristic depends to a large extent on the shape, and to a certain extent on the function of the implement listed. Further, more ethnographical and technological information is required to match salient characteristics with implements. For these reasons, a definite claim about the exact routes of semantic extension on the basis of the purely linguistic evidence presently available may be premature. This is primarily due to the highly culturally-variable shape and function of implements in general and knives in particular. There are an unusually large number of shape characteristics essential to an object before it can be called a knife, at least in

English: it must be long, flat and sharp, usually pointed, and with a handle. Such a list of essential and prominent characteristics may be the reason for knives appearing in classes together with a bewildering array of things: Allan (1977: 291) refers to a class in Fula for trees, bladed instruments (knife, razor, sword), grass shelters, armpits and life! Even more variable is the cultural salience of a given shape or function characteristic.

Despite the considerations mentioned above, some possibilities are more likely than others, as is shown by the classes which are actually formed in Thai and other languages. A comparison of classes containing knives in neighbouring and related languages allows the selection of the criteria used in Table 12. The patterning in Table 12 eventually allows the positing of a basic sense for /lêm/.

7.3.2 CRITERIA OF CLASSIFICATION FOR KNIVES IN NEIGHBOURING AND RELATED LANGUAGES

From the limited comparative data available to me, a full pattern **emerges** for only one of the items in Table 12. This patterning depends very much on the criteria selected and below is an attempt to justify the selection of these particular criteria.

The criterion of "flatness" or S2D shape is used in a neighbouring language with a classifier system constructed on similar lines to those of Thai. Kaiping, a southern dialect of Chinese has the classifier tsiang 33 which is used to classify the following referents: chairs, tables, papers, maps and knives, according to Chang (1977:100).

Chinese speakers report that the basic sense of tsiang 33 as a full substantive is "to extend, to stretch" and that it refers to a flatness, an S2D shape.

Another case of extension by a criterion of S2D shape is found in White Meo, a dialect of a language whose relation to Thai is disputed. Heimbach (1969:274) reports that rab is a classifier in White Meo for implements and tools, things held in the hand, things with handles. Items classified by rab are knives, spoons, axes and hammers. Elsewhere other items are listed as belonging to the class: scissors, guns, and chisels (Heimbach 1969:455). rab is also listed (in a separate entry) as classifier for a large area of field. Al

Although S2D shape is salient to these items in these languages, this does not constitute direct evidence of its salience in Thai. Nevertheless, the existence of such a connection in nearby languages at least shows that such connections are possible.

S1D shape is also very prominent in similar grouping in classifier systems in South East Asia. Mhong Njua, a Meo language of Vietnam, is reported (Lyman 1974:91) to have a classifier, cán, which is used for "long pointed objects, long flat objects, vehicles (certain tools and weapons)". Examples of classified items include letters (epistles), pieces of paper, wagons, automobiles, boats, machetes, needles planting sticks, hoes, razors, pocketknives, axes, spears, sickles, scythes. A separate entry gives "trunk (of a dead tree), hollow tree" as the sense of the same form with a func-

tion as noun.

A similar grouping based on SLD shape is also found in Chrau, a Chamic language of the Malayo-Polynesian family. Chrau speakers are found in Vietnam. Thomas (1971:133) lists the Chrau classifier tong with the sense "long, thin" for a list of objects including knives. Knives are (alternatively) classified in Burmese with châun for "long slender objects" (Burling 1965:251).

The factor of roundness or curve is prominent in many of these groupings. Chrau (above) includes rings and mortars in the tong group. White Meo includes "Thai-style" curved hoes, knives with hooked ends, half-moon rice-cutting knives and rice sickles in the rab class (Heimbach 1969:492). Burmese, which neighbours Thai but is unrelated, has the classifier sîn which is used for cutting tools, transport, paths and arcs of a river (Denny 1976:128). The notion of curved shape seems to De ny to be significant. Furthermore, the following entries are found in Haas (1965:476 & 495):

- /lân/ 1. to move along; to slide, to skid
2. a sled; a sledge used in harvesting (classified by /lêm/)
- /lô/ 1. a wheel of a cart or wagon
2. to roll (a wheel or round object)
3. crude oxcart used in harvesting (classified by /lêm/)
- /lô lân/ wheeled vehicles (a collective term)

These polysemous entries show clear connections in Thai between sliding and rolling transport in the restricted domain of rough harvest vehicles. Manitcharoen (1977:827) also gives a wide definition of /lô/ including anything round

used to support and move a vehicle, or round things in general, such as a coin. He clearly describes /l^han/ as a device pulled along on long wooden rollers instead of wheels (1977: 755). There is a clear connection here to the process of manufacturing candles. Manitcharoen defines the compound verb /f^han thian/ as to press and roll wax into cylinder-shaped candles using hand, foot or wooden instrument. This compound verb is common and listed in most dictionaries. But the clearest use of the criterion of roundness to classify knives is found in Lao, a Tai language very closely related to Thai. There knives are classified by dua:ng which is listed in the Lao-English Dictionary (Kerr 1972:550) with the following entry:

1. n. shape 2. n. ball, anything round. 3. n. disc.
4. clf. for lights, stars, stamps, knives, round objects.

Lao /dua:ng/ is cognate to the Thai classifier /duaj/, which is used for almost exactly the same range of nouns except, of course, for knives. In Thai the sense of /duaj/ is usually given as "round thing; source of light, etc." Especially in view of the senses of the Lao cognate, it is clear that here the criterion of classification is primarily roundness.

Finally there is a clear indication that the handle of these objects may be a salient enough characteristic to act as a criterion of extension of the class. We have already noted that the White Meo classifier rab classifies things with handles and things held in the hand generally. Campbell and Shaweevongse (1962:346) include in their list of objects classified by /l^hem/ "things with handles such as oxcarts,

wheel barrows etc." This is probably reference to the long bars which run parallel along each side of Thai oxcarts (/kwian/). Burling shows (1965:252) that in Burmese knives can also be classified by le?, a classifier for "hand tools".

This review has centered on criteria of shape, but criteria of function are often equally as significant. For example, note that grooves, lines or cuts can be made by bladed instruments, pointed instruments or wheels, especially in a soft material. Some informants say that oxcarts are counted with /lêm/ because of the way they cut into the soft earth of the wet-rice fields. Burmese sîn seems to encompass "tools or machinery which are used for transportation or for cutting" (Burling 1965:251) through a linking of boats "cutting" through water. Evidence against such a connection is found in the fact that plows, line-drawers and cutters of the earth par excellence, are classified in Thai by /khan/"long handle" rather than by /lêm/.

7.3.3 A BASIC SENSE FOR /lêm/

If we apply the 4 methods suggested above (p.119) to posit a basic sense for /lêm/, then methods (ii) and (iii) do not prove very useful. In isolation (approach ii), /lêm/ means "something long and possibly round" to some speakers, but nothing at all to others. The "best examples" of the set of words classified by /lêm/ (approach iii) are either knives or books. However, both the sense in isolation and the best example are skewed by the fact that all informants are educated city people with little acquaintance with traditional agricultural implements or with weapons. The senses

given are simply the most prominent members of the class in contemporary culture. It might be assumed that methods (i) and (iv) are equivalent, but a comparison of the discussions of /lêm/ below and of /tua/ in section 7.5 shows this is not wholly so: a basic sense for /lêm/ can be posited using approach (iv), while this is insufficient for /tua/ as will be described in section 7.5.

In Table 12 there is only one item which exhibits all the salient characteristics of the class of /lêm/. This item is /khiaw/ "sickle". It is doubtful if piercing is a salient function of sickles, but this is not a great shortcoming as it is demonstrable that the function of piercing is dependent upon a pointed shape to a far greater extent than, say, the function of cutting is dependent upon any particular shape. It has already been noted above that various instruments can affect a mass material in various ways that all have a common effect: creating linear lesions. In fact cutting may be the most productive criterion of semantic extension if all these operations are seen by native speakers as similar. Thus /khiaw/ "sickle" exhibits all the important criteria of classification. Knives in general exhibit the same range, since roundness and pointedness are bracketed only because of the generic nature of the item. Thus, as the basic sense of /lêm/ in Thai we can posit the sense of a bladed, pointed cutting instrument with a handle and either a straight or curved blade.

It is probably relevant that ox carts, sleds and sledges are associated with sickles in the process of harvesting.

It is possible that these items are classified indirectly through chains of criteria. For example the cutting action of a sledge may have been the criterion for transfer of /lêm/ class status from knives to sledges and from these the common harvest transport function of sledges and early carts may have been the criterion of extension to carts. Frankfurter, writing at the turn of the century (1900:54), thought that /kwian/ "oxcart" was in the class of /lêm/ "perhaps from the traces it leaves on the ground". All other vehicles are classified with /khan/ "long handle", and this leads to the suspicion that early carts and sledges were not built with a single tongue projecting in front. One informant felt that oxcarts traditionally had a triangular sort of extension in front to which oxen were yoked. The "handles" of the cart and extension to wheelbarrows suggest that the farmers themselves often had to push the carts out of ruts, or soft fields.

7.4 IN SEARCH OF A SENSE FOR /an/

7.4.1 NOUNS CLASSIFIED BY /an/

The classifier /an/ is for small, long objects and is used loosely when a speaker is unsure of the proper classification of something, usually, but not always, a physical object. With /pen/ "be" it also functions as kind of relativizer or nominalizer in formal writing, as in the following example:

7.1 kháw chōp mâak
he like much "He likes it very much".

7.2 kháw chōp pen an mâak
he like be NOM much "He likes it a great deal".

This is actually a fixed construction for a number of expres-

sions, including

/pen an khàat/	"absolutely, definitely not"
/pen an dii/	"very well; willingly"
/pen an tòkloŋ/	"it's agreed"
/pen an mâak/	"in great quantity, in great numbers"

Of the 300 entries in Haas 1965 which are classified with /an/, 21 are compounds beginning with /máaj/ "wood" which refer to sticklike implements such as staffs, rods, clubs, spears, etc., and by extension to some symbols in the Thai alphabet. There is an additional group of 20 words of varied morphological form which refer to sticklike implements.

The second most common group of compounds begins with /khrîaŋ/ "sign; machine; ingredients; paraphernalia; equipment, etc." with nine occurrences.

From the foregoing it would appear that there is an important factor of a sense of "implement" in this class. However, among the words classified by /an/ are several whose referents are abstractions in the sense of being third-order entities, thus not physically perceptible. The group is as follows:

/cùt'ɔn/	"weak point"	/muynhèet/	"cause"
/ubaaj/	"trick, device, plot"	/phî:n râap/	"(geom.) plane"
/kron/	"(math) root"	/najoobaj/	"policy"
/rátthaprasāasanoobaj/	"governmental administrative policy"		

A similar and overlapping group consists of words that could be considered either abstract or concrete, as general type or specific example. This second group is

/tuajàaŋ/	"sample, example"
/nimit/	"sign, omen"
/bæəpjàaŋ/	"set example, pattern"
/bæəpchabàp/	"pattern, model"

/phǎæn/	"plan, scheme"
/phǎænkaan/	"plan, project scheme"
/phǎænphǎn/	"plan, layout, scheme"
/khrǎanmǐ/	"tool, instrument"
/khrǎanfajfáa/	"electrical appliances"
/khrǎanjót/	"insignia of rank"
/khrǎanalàj/	"spare parts"
/khrǎanwát/	"measuring instruments"
/khrǎanmáaj/	"sign, mark, symbol, signal"
/khrǎanmáaj khrǎanmǐ/	"tools, instruments"
/khrǎanmáajkàakabàat/	"mark with crossed lines"
/khǒnkhwǎn/	"gift"
/khǒnláp/	"genitalia"
/sǐnkhǒn/	"things"
/khǎawkhǒn/	"belongings, equipment"
/kon/	"mechanical device"
/khǒnphèet/	"limit"

One explanation for the use of /an/ with this second group is as follows: Where a word or phrase is of high generality and is ambiguous between the general sense and a specific exemplary sense, /an/ is used to indicate the latter. For example, with /khrǎanmǐ/ "tools, instruments", if the speaker refers to tools in general, he will not need to classify at all. If the speaker refers to kinds of tools, he will use /jàan/ "kind" or one of its close near-synonyms. If he refers to a specific example as being a member of the class of tools of instruments, he will use /an/. In this case the sense added to a phrase or sentence by the use of /an/ is the same as that added by the use of any classifier: "one unit of the type specified", except that with /an/ the unit is not very closely specified, at least not when /an/ is used loosely to provide unit reference to general terms like "device, tool, thing," etc. The classifier /an/ is suitable for such a concretizing function due to its association with hand tools, and other physical objects held in the hand.

The most common semantic sets among the 300 words classi-

fied by /an/ were:

- (i) SLD objects: 119 occurrences.
- (ii) hand implements (tools, weapons, etc.) or hand-held parts of complex devices: 83 occurrences.
- (iii) signs, indicators, symbols, insignia, etc.: 45 occurrences.
- (iv) machinery, moving parts: 43 occurrences.
- (v) SLD wooden "stick-like" objects: 41 occurrences.

7.4.2 CLASSIFIERS CO-OCCURRING WITH /an/

Not much information is to be gained by examining alternate occurrence of other classifiers and /an/. The most commonly occurring alternative classifier is /jàaŋ/ "kind" with 14 occurrences. Next is /chín/ "piece" with 13. The classifier /jàaŋ/ is a potential classifier for almost any head. Co-occurrence with /chín/ reinforces the sense of physical object, as shown in the following common idiom:

- 7.3 pen chin pen an (elaborate colloquial) "to be a good
 be PIECE be CLF solid piece; well organized, well
 constructed" (Haas 1965:148)

Other alternative classifiers occurring more than 5 times are

/tua/	"body shape"
/phaen/	"large S2D shape"
/lúuk/	"small S3D shape"
/khrɛ̃aŋ/	"machine"
/lém/	CLF

In all, 21 different classifiers are alternatives to /an/.

7.4.3 HYPOTHESIZED STRUCTURE

The large number of nouns to be considered here, plus their extremely wide range of meanings, makes an approach like that used for /lém/ impractical. In addition, no clear comparative evidence is available to me, unlike the case with /lém/. There is another source, however, for a basic sense of /an/, a source not available for /lém/: the tendency for

many headwords of /an/ to be compounds. The predominance of compounding elements allows a rough hypothesis of a basic sense and structure of extension for /an/. Using a sort of method of approximations, we can then try to refine the picture.

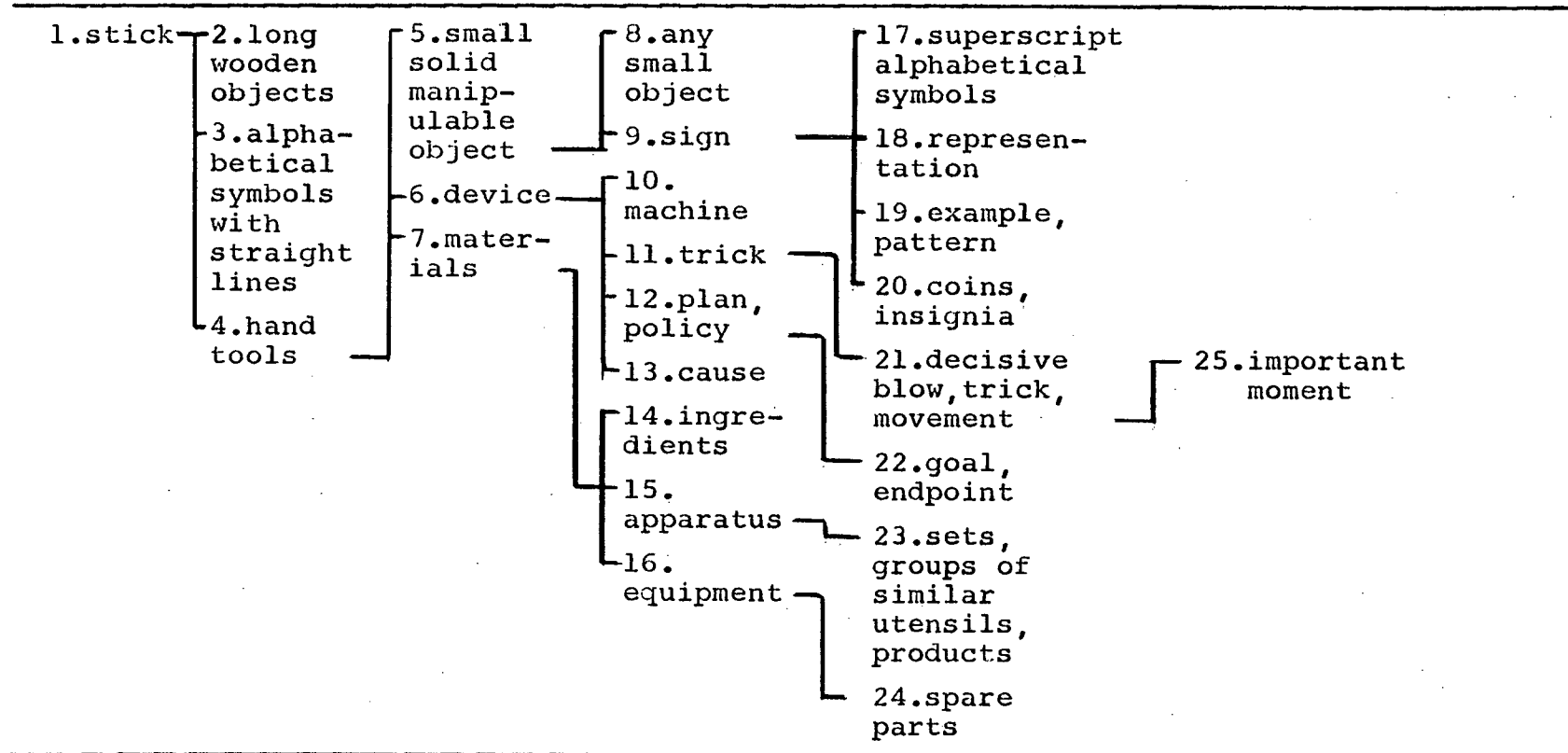
Using frequency of occurrence of **compound** heads as a criterion for a basic sense of /an/, one possible hypothesis of the paths of extension of /an/ is represented in Figure 5 (next page). In Figure 5 the basic sense of /an/ is taken to be "stick" because the most frequent compound head classified was /máaj/. The sense of /máaj/ in these cases is related to wood in the form of a stick, and is easily related to /khrîaŋ/ (in its various senses), which is the next most common compounded headword. The sense as "stick" is also the most technologically primitive, the simplest and the most concrete.

It is possible to support some of the internal connections in Figure 5. For example, /máaj/ and /mîî/ "hand" occur in a large number of alliterative or euphonic pairings such as /khrîaŋmáaj khrîaŋmîî/ listed above. This idiomatic grouping relates all three items: /khrîaŋ, máaj/ and /mîî/. Haas (1965:420) states that such pairings are "chiefly for the sake of alliteration" and indeed sometimes nonsense syllables are innovated to fulfill the requirements of these pairings. Nevertheless it is true that many of the pairs are formed on the basis of a semantic relationship between the paired members, often a relationship of synonymy.

Regardless of arguments for and against various internal

Figure 6

Rough Semantic Structure of /an/



Some examples from group 2 (long wooden objects): shoulder pole, yoke, mast, axle, cross, railroad tie, coat hanger

Some examples from group 4 (hand tools): hammer, spear, broom, pike, axe, rudder, club, harpoon, cane, staff, crutch, hook, switch, rod, match stick, shovel, racket, lever, paddle, ladle.

connections in the hypothesized structure, there is again a residual group which cannot easily be accommodated in the structure outlined in Figure 6. This group contains items like

/keesǝn/	"pollen"
/hũukratǝaj/	"bow tie; bowknot" (ear + rabbit)
/ŋǝn/	"comb (of fowl)"
/cũtʔǝn/	"weak point" (point + soft)
/cũa/	"gable"
/khriip/	"fin"
etc.	

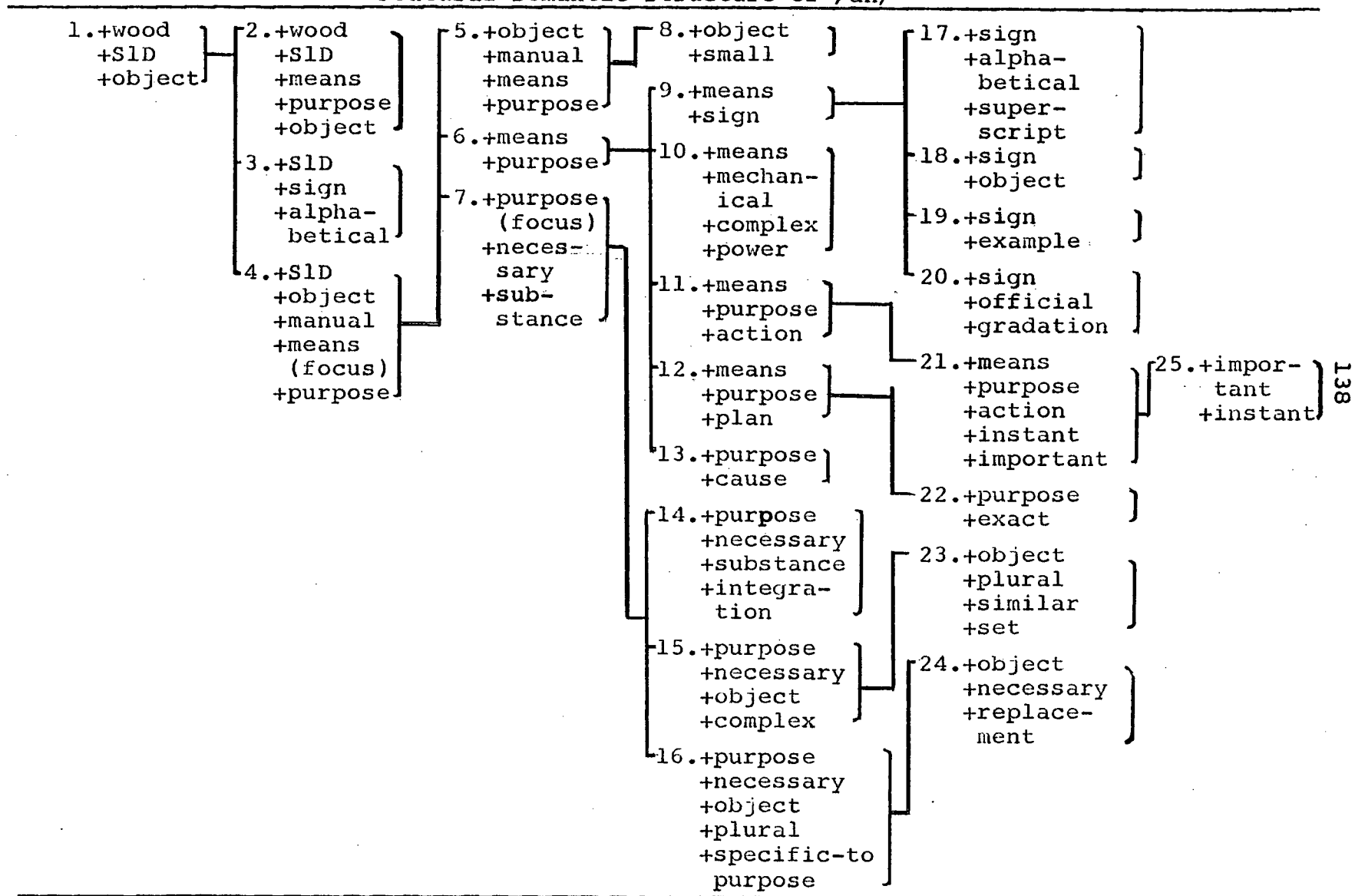
7.4.4 COMPONENTIAL REFORMULATION

It might also be objected that the items occupying the various nodes of Figure 6 are too semantically amorphous, and, because they are actual words in English, that they carry various connotations not explicit in the representation. More suitable items, perhaps, would be more like formal semantic components, more universal in application and correspondingly less language-dependent. In fact such components could be provided and the general structure maintained. The result is Figure 7 (next page), where

- +object = first-order entity
 - +manual = usually held in the hand, handled
 - +means = method of achieving a goal
 - +purpose = goal to be achieved
 - +instant = momentaneous, point-of-time
 - +necessary
 - = necessary to achieve some goal (=necessary-to-purpose)
 - +integration
 - = uniting various substances in one mixture
 - +gradation
 - = occurring in a series which is graded according to some criterion such as rank, value, etc.
 - +specific-to-purpose
 - = specifically created for a given purpose
- (focus): a component with (focus) is more salient than the same component without it

The type of componential analysis presented here differs

Figure 7
Featural Semantic Structure of /an/



from other componential analyses in certain ways. First of all, items in formal componential analyses are usually required to have common components which are used to relate either the multiple senses of a single form or the members of a unified semantic domain. The components are usually presented in a hierarchical arrangement with the "unique beginner" component being (redundantly) included in all the items of the set. Common components and a hierarchical relationship, then, serve to unify the set semantically. The analysis then consists of positing components which distinguish the members of the set.

In contrast, when trying to represent a classifier class we are involved in the description of a loosely knit group, because the unifying criterion is not semantic. It is phonological and syntactic, in that the class is created by co-occurrence (syntactic criterion) with an identical form (phonological). Thus the main problem is to relate the items semantically rather than to differentiate them. Proceeding to the right in the tree structure in Figure 7, then, we find in passing from one node to another that sometimes a feature is dropped and in other cases a feature is added. There is only one essential principle evident in the structuring of Figure 7. That is that each node must have at least one feature in common with the node that dominates it. The features in common are in fact criteria of extension, and should be distinguished from the criteria of classification which are represented by the total of non-redundant features at the node where a given item is listed. For example the

criteria of extension from node 1 to node 2 are:

[+wood], [+S1D] , and [+object] . The criteria of classification for node 2, however, are a different group:

[+wood], [+S1D] and [+means]; that is, all the non-redundant features at node 2. [+object] has been dropped from the list because it is implied by S1D shape; [+purpose] has been dropped because it is redundantly implied by [+means]. Of course the whole process is based on the assumption that extension takes place by some psychological process of association of common features. The specific criteria of extension between each node are given in Table 13 (next page)

The first way in which the present analysis differs from the more usual type of componential analysis is in the way the class of items is unified, then. In seeking to explain the paths of semantic extension we are trying to explain the relationships between items with no components in common, in some cases. For example, oxcarts and candles were seen to be classed together by /lêm/, yet neither shared a common feature of shape or function. This is not a defect in describing classes, however. As pointed out below, the unifying criteria are more than simply semantic. Furthermore, Clark & Clark (1977:467) cite evidence from Rosch & Mervis 1975 that basic type categories in English (e.g. fruit, vehicles, weapons, etc.) have no features common to all items. This was the case because Rosch and Mervis included a range of typical and atypical examples for each basic type. Thus their fruit category included apples and oranges as expected, but also olives and coconuts.

Table 13

Criteria of Extension in Figure 6 & 7

Extension From Node	to	Node	Criteria
1	...	2	+S1D, +wood, +object
1	...	3	+S1D
1	...	4	+S1D, +object
4	...	7	+purpose (with shift in focus from +means)
4	...	5	+manual, +object
4	...	6	+purpose, +means
5	...	8	+object
6	...	9	+means, (specification to [+sign])
6	...	10	+means
6	...	11	+means, +purpose
6	...	12	+means, +purpose
6	...	13	+purpose, (with shift in viewpoint: goal becomes result)
7	...	14	+substance, +necessary, +purpose
7	...	15	+necessary, +purpose
7	...	16	+necessary, +purpose
9	...	17	+sign
9	...	18	+sign
9	...	19	+sign
9	...	20	+sign
11	...	21	+means, +action, +purpose
12	...	22	+purpose
15	...	23	+object, (specification from [+com- plex] to [+plural], [+set])
16	...	24	+necessary, +object
21	...	25	+instant, +important

Note: Bracketed criteria are superordinate criteria which are not actually features listed in Figure 7. They express relationships between features rather than the features themselves. Although they seem to be a different kind of criteria they do express relationships between the posited features.

From these and other findings Rosch and Mervis argued that fruit coheres as a category not because each member shares any defining features of fruit, but because each member shares a "family resemblance" with the other members of the category. The greater the resemblance, the more central it is to the category. (Clark & Clark, 1977:467)

Thus a common feature in every member of the class is not an essential part of this analysis.

Another difference is the significance of the tree structure itself. The directionality of the trees in Figures 6 and 7 (left to right) refers to direction of extension, not to any hierarchical relation. Again no claim is made as to historical reality, although implications from the structure presented here to actual historical development (and vice versa) are undeniable. The structure represents one interpretation of clues given in the syntactic and semantic structure of the language as to what actually happened over the course of the centuries.

7.4.5 ALTERNATIVE STRUCTURES

Figures 6 and 7, then, represent a possible description of the semantic structure of the class of /an/ as it has been produced by semantic extension. Little can be said to support this hypothesized structure against other equally as likely structures. There is a further refinement, however that can help to assess the information gathered so far. This step is simply to look at the relationships between items classified (in this case broad groups of items classified) and the criteria of extension as hypothesized. This is done in Table 14.

Table 14

Items Classified by /an/ and Criteria of Extension													
Items by Group	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. stick	x	x	x				x						
2. long wooden things	x	x	x	x	x								
3. (straight) letters	x			x	x	x		x					
4. hand tools w. long wooden handles	x	x	x	x	x	x	x						
5. small hand-held objects	.	.	x	.	.	x	.	.	.	.	.	.	.
6. device			(x)	x	x								
7. materials				x	x				x	x			
8. any small object			x			x							
9. sign			(x)	x	x			x		x			
10. machine	.	.	x	x	x	.	.	.	.	.	.	.	.
11. trick				x	x						x		
12. plan, policy				x	x						x		
13. cause				x					x		x		
14. ingredients				x	x				x	x			
15. apparatus	.	.	(x)	x	x	.	.	.	x	.	.	.	.
16. equipment			(x)	x	x				x				
17. superscripts				x	x	x			x				
18. representations				x	x				x				
19. example, pattern			(x)	x	x				x				
20. coins, insignia	.	.	x	x	x	x	.	x	(x)	.	.	.	.
21. decisive trick, blow, move				x	x						x	x	x
22. goal, end				x									
23. sets			x	(x)									
24. spare parts			x	x					x				
25. important moment												x	x
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.

The criteria of extension are:

- | | |
|---------------|---------------|
| 1.+slid shape | 7.+manual |
| 2.+wood | 8.+sign |
| 3.+object | 9.+necessary |
| 4.+purpose | 10.+substance |
| 5.+means | 11.+action |
| 6.+small | 12.+instant |
| | 13.+important |

Here it can be readily seen that no horizontal line is complete; thus, unlike the case with /lêm/ no single item exhibits all the criteria of classification. This may very well be an indication of a faulty hypothesis in basing the structure on /máaj/ "stick". There is at least one criterion which is common to all groups of items except the most general; that is, except groups 5, 8 and 25. This is the feature of [+purpose]. Since [+purpose] and [+means] are very closely associated, this may be an indication that a different basic sense is more accurate: perhaps node 6 "device". No matter which node in the structure is posited as basic, however, Table 14 would remain unaffected. Notice also that according to the structure hypothesized, extension has proceeded in chain-like fashion so that nodes 1, 8 and 25, for example, have no features in common. Thus no rearrangement of basic sense or criteria of extension is likely to produce as neat a picture as with /lêm/. Probably with such extreme extension to such a wide wastebasket-like sense no description of the structure of /an/ would be neat.

7.4.6 /an/ AS WASTEBASKET

As mentioned above, /an/ is the closest equivalent in Thai to the wastebasket category common to other classifier languages (cf Benton 1968:128, Adams et al 1975:5, Lyons 1977:461, etc.). Thus it is necessary to explain how, although certain (small long) objects are primarily classified by /an/, other second- and third-order entities can be classified in the same class.

It must be kept in mind that a structure like

7.4 *phǒnlamáaj sǎam an
fruit 3 CLF

would be unanimously rejected by all Thai speakers. Thus there are limits on the use of /an/ as a wastebasket, as there are limits on the occurrence of Repeaters, and the main constraint in both cases is the same: classification by salient natural unit pre-empts classification by more comprehensive units (as with Repeaters) or more general units (as with /an/).

The sense of /an/ has a dual sort of nature, then. It refers to small physical objects and through this reference has a concretizing, exemplifying function when used to classify very general nouns (as described above). It also can be used to refer to odd entities not easily classified by other more common classifiers or by Repeaters. In this latter function it is used more widely by children and the less-educated. In section 3.4 it was argued that Repeaters, while capable of functioning as a wastebasket when common classifiers were unsatisfactory, were only able to do so because of the wide range of referents in the category of Repeaters: any natural entity can repeat. The fact that /an/ seems to redundantly perform this same function, yet (as is argued here) is secondarily derived by a process of semantic extension, constitutes evidence that Repeaters do not primarily fulfil this function.

To account for this wastebasket function of /an/, figure 7 could be extended at nodes 8, 25 and 22, where refer-

ence to objects, moments or actions, and intellectual points (first, second and third order entities, respectively) becomes very generalized.

7.5 THE SEMANTIC EXTENSIONS OF /tua/

The classifier /tua/ would be categorized as a PR Natural Unit according to the criteria of categorization worked out above. Although native speakers consistently give it the meaning "body", and it has a limited function as a noun with the same sense, it occurs with just as confusing a range of headwords as do /lêm/ and /an/. We can apply similar techniques to /tua/ to arrive at a description of the routes of semantic extension, the criteria of extension, and the basic sense.

In this case, unlike the previous two, there is an additional factor: the sense as noun. In fact the sense as noun constitutes a whole complex of factors, since the sense of the noun in compounds has also undergone considerable extension.

In attempting a representation of extended sense (not a reconstruction, please note) there are three essential requirements:

- (i) the representation must reflect distinctions and connections derived from the language rather than from any "universal"* system of epistemology.
- (ii) the basic sense and criteria of extension must be clearly shown.

*As Whorf has pointed out, the system used is often culturally biased toward Western philosophy. I do not, however, discount the idea of a universal epistemology eventually being developed. It would have to be based on linguistic distinctions found to be most extensively relied on by the languages of the world.

- (iii) the nodes or stages representing the result of a particular extension must correspond to actual lexical items in the language.

In the case of /an/ (section 7.4) requirements (i) and (iii) were difficult to follow, mainly since there was such a large number of items classified by /an/, covering a wide semantic range. Thus the device of the rough semantic grouping was employed. A given noun might be included as the result of the extension to a "wastebasket" function. I am not sure whether each of the 300 items classified by /an/ can be specified by the 25 nodes of Figure 7.

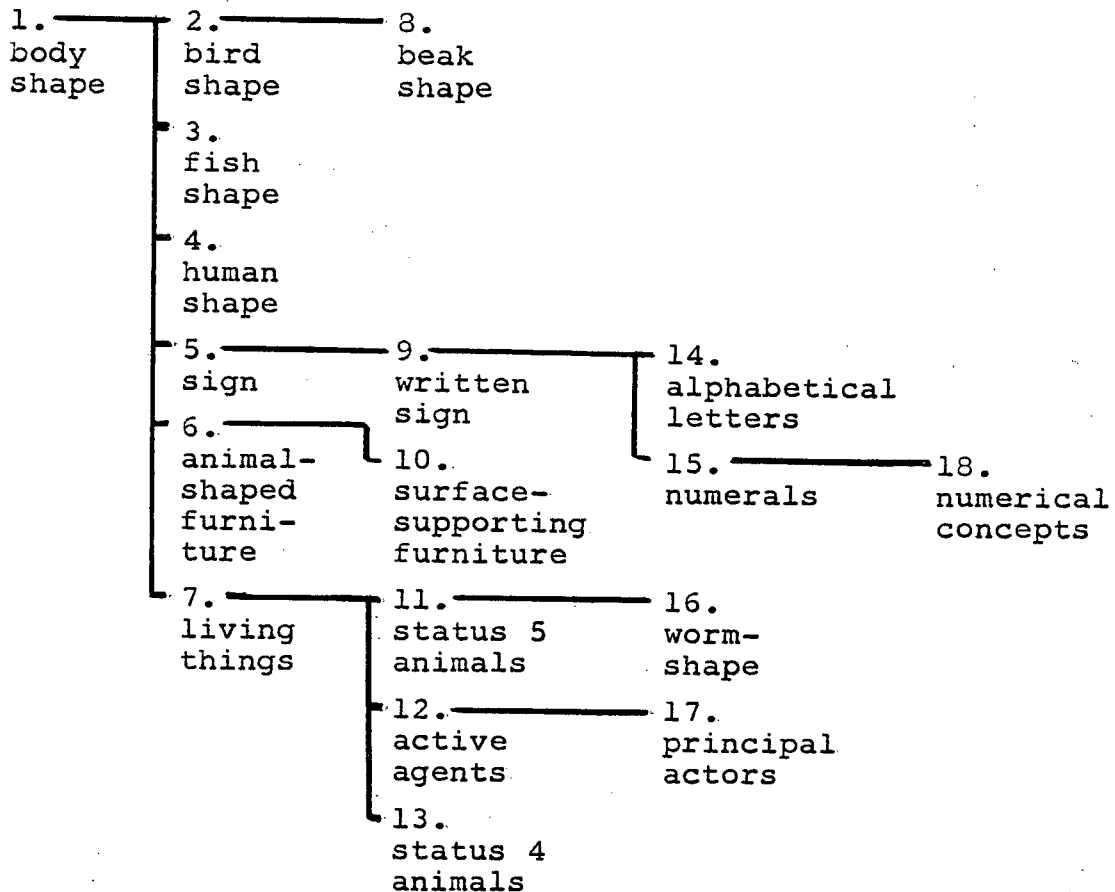
In the case of /tua/, there are approximately 120 items listed in Haas 1965 as being classified with this form. They form a much more closely-knit group than the headwords for /an/. Thus it is possible to specify where each item is represented in the suggested semantic structure of the class of words created by the use of /tua/ as classifier.

Again, the first step is to choose a basic sense. The two most likely candidates, on simple inspection, are "animal" and "body shape". There are several reasons for choosing "body shape" as the basic sense.

First of all, "body" is more general than "animal" in that, as Nida recommends, it more easily relates other senses. For example, if "animal" were basic and "body" a secondary extension from it, then it would be necessary to explain how "animal" can extend, through the sense of "body shape" to items with human shape (see Figure 8 next page). If shape is the basic sense, then human shapes (node 4) are direct, easily motivated connections.

Figure 8

Rough Semantic Structure of /tua/



sign = one entity referring to another

active agents = things capable of performing some role or duty

status = one of the following 5 roughly-divided groups on a scale of respect and deference paid to animate things by ordinary Thai people:

Status 1: highly respected (kings, gods, Buddha images, etc.)

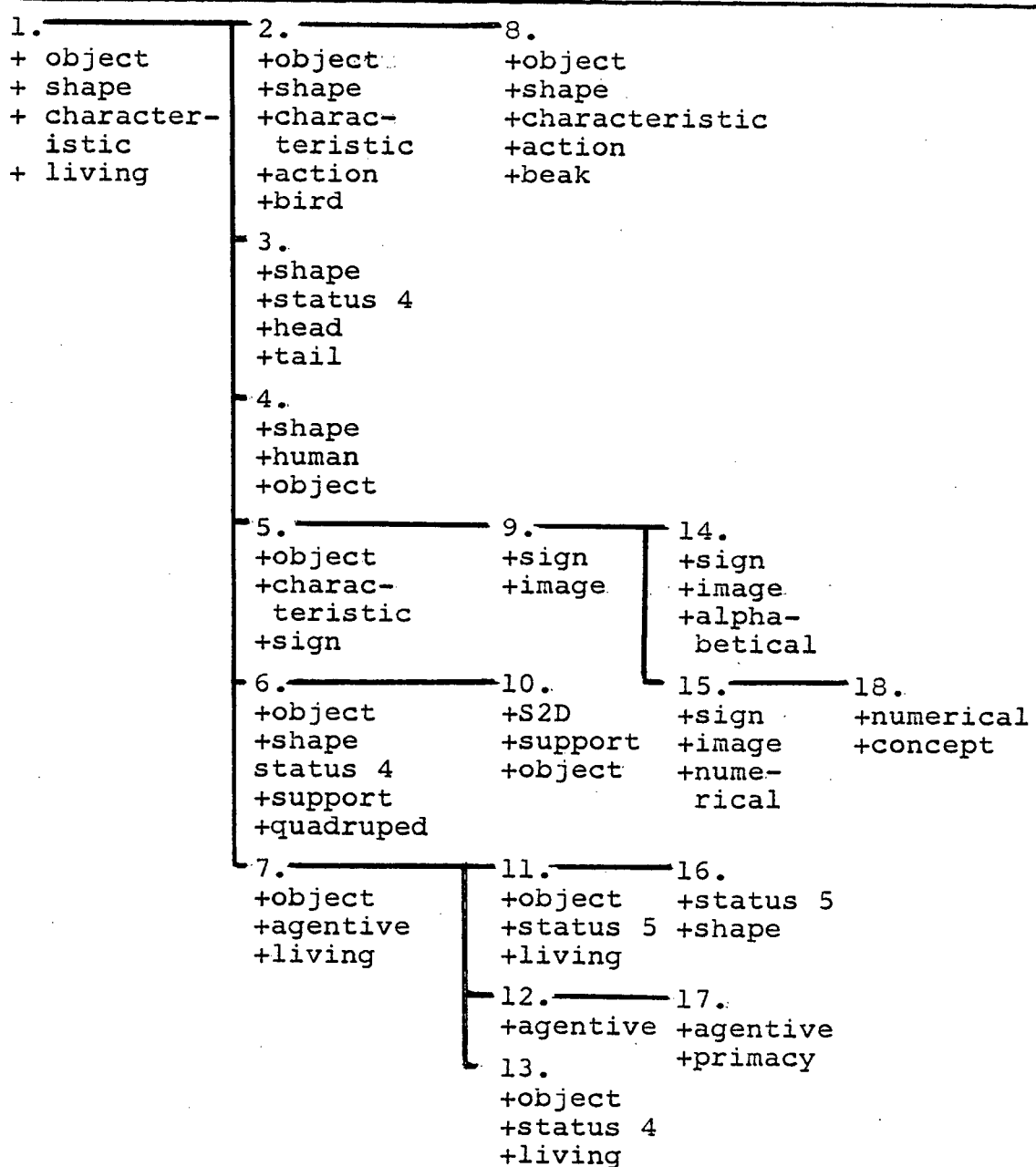
Status 2: respected (nobles, leaders, etc.)

Status 3: equal, human

Status 4: larger animals with clear appendages, such as head, limbs, tail

Status 5: tiny living things and low-status larger animals (insects, micro-organisms, some aquatic invertebrates, worms, some rodents, some lizards)

Figure 9
Featural Semantic Structure of /tua/



agentive = capable of performing some role or duty

support = the main function (of an object) is to support a flat surface for utilitarian purposes

object = first-order entity

The decisive factor however, is the fact that as a noun, /tua/ is consistently given the meaning "body" by native speakers. The sense "body" implies shape, but not necessarily that of an animal body. There are a large number of the 120 items classified by /tua/ which are noun compounds with /tua/ as a sort of prefix. For example:

7.5 tuatalòk sǎam tua
agent+funny 3 BODY-SHAPE "three clowns"

Not all /tua/ compounds are classified by /tua/. We have already discussed /tuajàaŋ/ "sample", example" in examples 4.15 and 4.16, of this paper. Other examples are /tuathææn/ "representative; substitute; proxy" (Haas 1965:195) and /tuacamnam/ "hostage". Both of these items refer to humans exclusively, and must be classified with /khon/ "person". Other items like /tua rót/ "body of a car" are classified by /an/, /chín/ "piece" or by a repeater.

It might be objected that in considering both sense as noun and sense as classifier, we are confusing two different cases and types of extension, as implied by Table 7. The difference is not so great, however, if we remember that /tua/ is a Partial Repeater in many cases. Since synonymy must exist between repeated elements (as argued in section 4.2) the sense as noun and the sense as classifier must be identical. Thus any sense of /tua/ as compound head (or prefix; it is difficult to judge) will be reproduced in the classifier as long as partial repeating is the process

of classification. In this manner it could be said that additional senses as compound member "create" identical additional senses as classifier.

Figure 8 then, represents a hypothesis about the various routes of extension of the meaning of /tua/.

Figure 9 translates these into more abstract semantic features in order to extract the precise criteria of extension. Table 15 below lists the 120 items classified by /tua/ in Haas 1965 or containing /tua/ as first member of the compound in McFarland 1944 and Sethaputra 1965 (1972). Questionable items were confirmed by two or more informants as being classified by /tua/.

Table 15

Headnouns of /tua/ According to Position in the Structure
in Figures 8 & 9

Node in Figs 8 & 9	Item	Gloss
1. body shape	sānthāan	shape, appearance, etc.
2. bird-shape	nók wāw	bird; hammer of a gun kite
3. fish-shape (head and tail)	khǎo } taʔkhǎo } bèt máajtàjkhúu mùt khěmmùt taʔpuukhuan taʔpuu tualēek (tua)aksǎn tuanǎnsǎi bùʔrǐi	hook hook fishhook short vowel marker "ə"(9) tack; peg; very small screw pin screw nail written numeral (9) written alphabetical character (9) written alphabetical character (9) cigars, cigarettes
4. human shape	tuanǎn tuachǎet túkataa hùnkraʔbòk	shadow puppet (5) puppet (5) doll (5) marionette (5)

	hùnjon	robot (5)
	kraproon	skirt
	sìakák	vest
	kaan'keen	trousers, pants;
	iam	apron-like garment for babies
	sâa	shirt
	jókson	brassiere
	saroon	sarong
	tuasâa	"body" of shirt or coat (with out the sleeves)
5. signification	sănjălák	symbol, sign, mark (12)
	khoon	actor (12)
	tuacam'uat	clown, buffoon (12)
	tuatalòk	clown, jester (12)
	tuasadææn	actor; rôle (12)
	tualên	a performer (12)
	tualá'khon	a performer; the cast (12)
	phâj	traditional playing cards (representing an animal)(9,12)
6. quadruped ob- jects w. pri- mary function of supporting flat surface	tó?	table
	tó? khrâan	
	pææn	dressing table
	máajaaw	bench
	kâw'îi	chair
	kratàaj	bench with coconut grater
7. living things	sàt	animals (of any kind)
8. beak	(tua)pàakkaa	penpoint or nib
9. written cha- racters	phâj	traditional playing cards (representing an animal)(5,12)
	(tua)aksôn	character, letter (3,14,12)
	tualéek	numeral (3, 15, 12)
	tuaphim	printing type (12)
10. surface-support ing furniture	as in 6, but	not necessarily quadruped
	bó'rontháaw	hassock
11. status 5 animates	tuamalææn	insects (any kind)
	(tua)sâjdiian	earthworm
	(tua)dàkdææ	chrysalis (7)
	(tua)bûn	hairy caterpillar
	tuakâæw	caterpillar; larva
	tuakhrân	scale-insect
	tuatùn	bamboo rat; mole
	tuatææn	hornet
	tuakaaran	coral polyp
	tuaphân	bee
	tuânôn	worm; caterpillar
	tuamăj	silkworm
	tuaciit	trichina (worm)
	tuatâit	intestinal worms


12. active things
- | | |
|-------------------|----------------------------------|
| pracùʔfajfáa | (electr.) charge |
| plinj | leech; staple, clamp |
| wâw | kite |
| wâwchulaa | kind of kite |
| tuakhuun | (math.) multiplier (18) |
| tuachâam | (tech.) binding or joining agent |
| khriâjplææŋ | (electr.) transformer |
| tuanam | (electr.) conductor |
| tuahãan | (math.) divisor |
| tuakhûapkhuum | (tech.) regulator |
| tuaban̄kháp | (tech.) governor |
| tuacàk | cogwheel |
| tuasuj, tuasaniat | a jinx |
| tuakratham | (chem.) a reagent |
13. status 4 animates*
- | | |
|---------|-------------------------------------|
| sàtbòk | land animals |
| bâa | wild animals |
| maŋkoon | dragon |
| lûuk | offspring of animals |
| sintoo | lion; Chinese lion |
| hôn | swan; legendary bird |
| amanút | supernatural being (of animal form) |
| nâak | Naga, legendary giant snake |
| khрут | Garuda |
14. alphabetical characters
- | | |
|--------------|-------------------------------|
| (tua)aksjɔ̃n | letter (3,9,12) |
| tuanãjsɛɛ | letter (3,9,12) |
| phajanchanaʔ | consonant (9,12) |
| saráʔ | vowel (9,12) |
| aksjɔ̃nsũuŋ | "high" class consonant (9,12) |
15. numerical characters
- | | |
|---------|--------------------------|
| tualêek | numeral, number (3,9,12) |
|---------|--------------------------|
16. worm-shape
- | | |
|-------------|---|
| tuajɛ̃tjɛ̃ɛ | worms, creepy-crawly beings; doodles, scribbles |
|-------------|---|
17. principal actors
- | | |
|----------|---|
| tuamaan | Mara the evil one (12) |
| tuaʔeek | principal character, role, actor (5,12) |
| naaŋʔeek | heroine; wife(5,12) |
| phráʔeek | hero; husband(5,12) |
| tuakaan | main culprit; principal actor (5,12) |
| tuaʔêe | main person; the one responsible (5) |

*Specific names of this type of animal are too numerous to list and have not been included in the basic 120 items of this table.

tuakèn	the most desperate outlaw in a gang; the star of a performing troupe; the trump card, winning card; the favorite horse or candidate (5,12)
tuatân,tuatii	the one responsible; the chief promoter of a cause or project (12)
tuasămkhan	chief culprit (12)
khũn	king (chesspiece) (5)

18. numerical concepts

tuachapó?	(math.) prime number (9,15)
lêeknùaj	(math.) cardinal number (9,15)
lêekkhîi	(math.) odd number (9,15)
tuatân	(math.) dividend; multiplicand (the number to be divided, multiplied, etc.) (9,15)
tuabùak	number to be added (9,15)
tualóp	number to be subtracted (9,15)

In Table 15 the numbers in brackets after items indicate possible alternative structure; that is, the items could also be classified with /tua/ for other reasons. These other reasons are possible association with the group indicated by the number in brackets. For example, /tua'èek/ "principal character, role or actor" is grouped with principal actors (group 17) or it could be associated to /tua/ by the path of active agents (group 12). There is no reason why an item cannot appear twice. For example, informants point out that kites resemble birds both for their body-like shape (e.g. head, tail and wings)* and for their characteristic activity of flying. Similarly, alphabetical characters in Thai start with a characteristic circle (or head) and the subsequent linear form can be seen as a body and tail, as, for example, in the letter  /th/. Letters are also prime examples of symbolic

* Kites are highly personified in traditional Thai culture. There are male and female kites as well.

representation.

In a case like letters, perhaps a single criterion was the original actual path of extension (probably either shape or symbol). However, the semantic evidence from the lexicon tells us only that either way is possible and perhaps both paths were taken, reinforcing each other. Thus a modern speaker may class a letter or numeral as /tua/ because he feels it to be an active agent in some way. Simultaneously the visual impact may suggest a snake or fish shape which also requires /tua/ as classifier.

Another example is the hammer of a gun. It has both the characteristic shape and activity (pecking or dipping the head) of a bird. I doubt very much the necessity of positing one criterion as primary, the other as secondary.

In Figure 8, the connection between groups 1 and 5 seems to me to be the weakest link in the structure of /tua/. However, it is reinforced by the fact that /sǎnthǎan/ "shape, appearance, etc.", the word used by Thai grammarians for the criterion of shape (cf Poosakritsana 1960, Silapasarn 1968), extends in sense to general characteristics of some objects, according to informants and to McFarland (1969:846). Actual physical shape is expressed by /rûupsǎnthǎan/ which adds the form /rûup-/ "form, image". Now the word for "symbol", /sǎn-jalák/ can also be used to refer to non-physical characteristics such as the characteristic habits of a person or animal. Thus "characteristic" is used as the connecting link in Figure 8.

Alternatively, the sense of /tua/ could have extended to

visual symbols and actors through the criterion of group 12, active agency. I have been largely unsuccessful in ascertaining what connections are made by modern-day speakers, using a method called the "triad method" which requires informants to group items and introspect to the criteria for the grouping. Ultimately, psychological information of this sort is only valuable when gathered from a sufficiently wide and controlled sample. Such an endeavour was considered to be beyond the scope of this thesis.

In Figure 8 and Table 14, it will be noticed that the groups of living things and actors are both split. Living things are divided into status 4 and status 5 animals. Actors are divided between symbolic representations (group 17) and principal agents (group 6). The main motivation for dividing animals was the fact that criteria of shape are relevant to status 4 animals but not to status 5 animals. This is probably due to the size of status 5 animals: they are often too small for shape to be perceptually salient. It may also relate to a factor of respect (since some larger animals are included in the status 5 group), but this is related to size: the largest animal, the elephant, had its own unique classifier in traditional culture.

Actors were split mainly because the factor of primacy among "principal actors" formed such a clear and large group, some of which could be seen as symbolic representations, some not. Furthermore, the group of marionettes, puppets, dolls, etc. blends gradually into the group of actors through clowns and jesters, etc.

This could be taken as another possible route of extension, but I have no evidence to posit primacy to clowns over dramatic actors. Any such primacy, of course would be chronological priority. Thus matters of historical precedence creep into consideration surreptitiously. Indeed, such matters cannot be ignored and serve to underline the need for historical and cultural information to support the linguistic evidence, before any historical claim can be advanced.

In contrast to the splitting of some apparent groupings, it will be noticed that group 16 is composed of two distinct groups: what we might call models of the human form and clothing*. These two were merged because of the primacy of the criterion of shape throughout the classifier system. The criterion of human shape alone is sufficient to distinguish and to relate these items regardless of their two distinctive functions.

The criteria of extension are given in Table 16.

It was considered unnecessary to present a comparison of criteria of extension with all the items classified, since in the study of /an/ it was shown that that approach was ineffective when extension proceeds by chain-like steps, as it clearly does here.

*That shape is the criterion for inclusion of articles of clothing is very clear: only clothing which takes the shape of the body it covers is classified with /tua/. Thus hats and shoes are not /tua/ and skirts and sarongs are ambiguously /tua/ or /pháin/ "S2D shape". Many names of common articles of clothing are not listed in Table 15 because of this clear generalization.

Table 16

Criteria of Extension for the Semantic Structures of /tua/
as Given in Figures 8 & 9

Extension from to Node Node	Criteria
1 - 2	+shape, +object (specification)
1 - 3	+shape (specification)
1 - 4	+shape, +object (specification)
1 - 5	+object, +characteristic
1 - 6	+shape, +object (specification)
1 - 7	+object, +living
2 - 8	+shape, +object, +characteristic, +action (part-whole)
5 - 9	+sign
6 - 10	+object (function)
7 - 11	+object, +living
7 - 12	+agentive
7 - 13	+object, +living
9 - 14	+sign, +image
9 - 15	+sign, +image
11 - 16	+status 5
12 - 17	+agentive
15 - 18	+numerical

Some general observations on the relations between the various criteria and on the overall significance of the hypothesized structures are made in the following section.

8.0 CONCLUSION

8.1.0 SUMMARY

8.1.1 CONFIRMATIONS

This thesis has served to confirm the following facts about Standard Thai classifiers already stated in the literature about the language:

- (i) Thai classifiers are nouns.
- (ii) They can in some cases classify verbal headwords.
- (iii) Their basic function is to supply unit reference to the referent of some other lexical item.
- (iv) The various syntactic categories which are apparent upon inspection of some examples of Thai classifiers are not discrete categories.
- (v) Full Repeaters are an open category.
- (vi) Classifier selection depends, in many cases, on cultural factors and on individual speakers' intentions, but there is a perceptual basis which may be common to all languages.
- (vii) Shape is a very important criterion of the classification (and perception) of first-order entities.
- (viii) Most classifiers have a meaning for native speakers. Of the few which do not, many can be assigned senses by a cursory examination of the nouns they classify, because they classify according to a single criterion (usually shape). The remaining classifiers can be explained in terms of semantic extension over historical periods.
- (ix) Repeaters have a salient locative component.
- (x) The relationship of full repeating depends on the lexical identity of repeated elements.

- (xi) Even closely related dialects may differ in the selection of a criterial feature for classification of the same object action or concept.
- (xii) Classifiers modify NP's rather than simple nouns.
- (xiii) A mixture of semantic and syntactic factors are involved in the classifier system and in classifier selection.

8.1.2 CONTRIBUTIONS

This thesis has provided some data and made some claims which should be useful contributions to the understanding of the Thai classificatory system, to the comparative linguistics of South East Asia and possibly to the lexicography of that area:

- (i) A relatively comprehensive list of Thai classifiers has been compiled. Practical considerations make the extent of the list rather arbitrary, depending on which syntactic defining criteria one uses to restrict the list to a manageable size. For this reason, and also for reasons of space, the list has not been included in this paper, but is available on request.
- (ii) Comprehensive lists have been provided of the entire classes of nouns classified by /lēm/ and /tua/. Other classifier classes have also been enumerated but not published here. The basic data has been collected for future compilation of such lists for each classifier.
- (iii) Some light has been shed (in section 4) on the puzzle of the centrality of the head or the classifier in the clas-

sifier phrase. As an attribute of the head, the classifier is subordinate; as the expression of the class of which the head is a member, it is the head which is subordinate.

(iv) "Independent" classifiers classify verbal heads.

(v) There is a semantic correlate of the repeater construction: full repeaters are entities in terms of

(a) being directly referred to

(b) their existence being asserted

and (c) their status as LP predicates, as defined in section 3.2.

Most repeaters have a locative sense which may in fact constitute the class-sense (in Bloomfieldian terms) of the syntactic category.

(vi) There is a semantic correlate for the process of partial repeating: the entire headword is a hyponym of the classifier. This relationship is restricted to a formal nature in the case of those partially-repeating forms which do not also fully repeat (i.e. the PR Units), since informants do not accept hyponymic statements using these forms as semantically unbound morphemes (e.g. /bajmáaj/ is not a kind of /baj/ because /baj/ does not occur in isolation).

Partial Repeaters, like Full Repeaters, require lexical identity between repeated elements.

(vii) Some information was provided about the process of compounding in Thai. Some lexical items are semantically bound forms (like /baj/ "S2D shape") and require compounding in all occurrences as full substantive nouns. Some items seem to require the prefixing of a classifier to reinforce the clas-

sificatory system (as in /tuamalæəŋ/ "insect"). Other items referring to commodities often have a classifier to show the container or the state of the commodity (as in /plaakrapǝŋ/ "canned fish"; i.e. fish + can). In still other cases compounding seems to be a case of innovation to emphasize the sense of physical object (as in /tuatéep/ "the tape itself" or /lémthian/ "candle", used in describing the results of the process of manufacturing candles).

Further, it was hypothesized (and some examples were given) that the sense of a form when it functions as compound head tended to be more abstract, while sense as classifier tended to be more concrete.

(viii) There is an implication of "kinds" in full repeating. This implication is explained in terms of lexical identity between head and classifier. Repeated forms constitute a singleton class and the enumeration of members is equivalent to the enumeration of classes.

(ix) Standard Measures are mutually exclusive with repeating. This is not the case, however, with Temporary Measures.

(x) If a distinction exists in the semantic structure of Thai between naturally-occurring units and standardized units derived by the use of technology, it is not apparent in either Standard Measures or Temporary Measures, both of which may refer to naturally-occurring first-, second- or third-order entities.

(xi) A defining characteristic of classifiers is their function of providing unit reference to another substantive, the referent of the headword, whether this second substantive is

overtly present or not. This characteristic distinguishes classifier function from function as a full substantive noun.

(xii) Repeaters function to allow attention to be focused on the entire entity as opposed to various characteristics of that entity.

(xiii) Repeaters function as a "wastebasket" or general category only in a limited and secondary way. Innovation of repeaters is at least marginally acceptable due to their lexical transparency.

(xiv) Standard Measures cannot occur as headwords.

(xv) One category of Thai classifiers is the General Units. They refer to characteristics of referents which are generally on a higher taxonomic level than other categories (e.g. "size", "shape", "kind", etc.). General Units cannot repeat or enter into compounds. They have meanings and alternative function as full substantive nouns. With some exceptions, they do not refer to shape characteristics of the headword.

(xvi) Extended Classifiers, like General Units constitute a category on the (syntactic) basis of their non-occurrence as repeaters or compounds. They refer to more concrete characteristics of the head-referent than the General Units. They are further distinguished by differing semantically (to varying degrees of lexical transparency) from the sense of the same form as full substantive noun. In two cases there is no associated noun at all and the classifiers have little or no meaning for native speakers.

(xvii) The basic sense of one of these two "exclusive" classifiers, /lêm/, is "a bladed, pointed cutting instrument with a

handle". The sense of /lêm/ has extended directly (as opposed to extension in chain-like fashion) to first-order entities only. Extension has proceeded in several directions, presumably due to the large number of salient shape and function characteristics of knives and their importance in early technology.

(xviii) The basic sense of /an/ could be a stick of wood, since many of the nouns it classifies are compounds with /máaj/ meaning "stick" or "wood". The sense of /an/ has extended in chain-like fashion through the sense of "device" to classify very abstract third-order entities.

(xix) The probable basic sense of /tua/ is "body shape", where the body is that of a sentient being. This basic sense has extended in chain-like fashion in several different directions. In some cases extension has been according to alternating criteria of shape and function.

(xx) Two different kinds of criteria of extension were found in studying /lêm/, /an/ and /tua/: criteria such as shape, characteristic action, function, etc., and "meta-criteria" of a more general nature, such as, focus of attention on a different aspect of the same referent, and specialization.

8.2 THEORETICAL IMPLICATIONS

As mentioned in section 6, the explanatory value of static categories is very limited, and in some cases obscures dynamic syntactic or semantic relationships. The sole basis of a distinction between Exclusive Repeaters and PR Repeaters is that the former must repeat while the latter can repeat.

Tables of static categories cannot deal with such distinctions except by overlapping the categories, which in turn undermines the usefulness of the category. The limitations of this kind of "taxonomic" linguistic analysis were outlined in early Generative Theory (see Chomsky, 1957).

The insights gained in the discussion of the various categories and their limitations (resulting in Figure 5) could be reformulated in a series of phrase-structure rules to account for the choice of a broad category, but not for the choice of specific classifiers within that category. The information already presented informally could be used by a grammarian who was interested in writing such rules. Ultimately, the contribution of the speaker's intention and contextual and situational factors shown to be of crucial significance in many cases could only be captured by formal rules of great complexity and these, as Becker (1975:112) has pointed out, "may suggest that classifier choice is more determined than it actually is".

The semantic correlates of the major syntactic categories are criterial in the case of repeaters (repeaters are 1P predicates or entities-in-general) but not so in the case of partial repeaters. Although it is a defensible claim that in all partial repeating the head is a hyponym of the classifier, other categories can also be hyponymic; for example, /khon/ "person" functions as an Extended Classifier in

8.1 dèk sǎam khon
 child 3 PERSON "three children"

but the relationship between head and classifier is one of

hyponymy.

Lyons (1977:438) finds a positive but inexact correlation between syntactic structure and semantic function. He adds that "what is ontologically indeterminate may be determined differently by the grammatical categories of particular languages" (1977:499). This seems to be the case with the data here: the only justification for Repeaters as some kind of entity is the fact that speakers of Thai seem to consider them to be such entities. This may also apply to the locative sense of body parts and bureaucratic or social divisions, if location is indeed a common semantic factor in these groups of repeaters.

It is interesting to speculate as well that in the process of extension and the concomitant divergence of senses of the same form as classifier and as full substantive noun (or as noun compound member) we can see the process of "fossilization" at work, converting semantic values into syntactic functions. This is the case with the two "meaningless" non-compoundable classifiers /lēm/ and /an/. Further, with the loss of a meaning the semantic functional load is reduced almost to zero and the syntactic role becomes the sole function of the item. In such a case, the need for a large number of distinctions (and therefore lexical items) within the category of classifiers is also reduced. The logical result is reduction of the number of classifiers, and there is some evidence for this in Thai. The special classifiers /pân/ for sawblades and /châak/ for elephants are for practical purposes obsolete. If all that is required is a single marker of

unit reference, we can expect the rise of a general classifier, and this appears to be the case. The classifier /an/ is replacing many of the special classifiers for implements of the old manual technology as Bangkok (if not Thailand) moves into the electronic and the computer eras. Most of my informants regularly use /an/ when old-fashioned objects are discussed. There is also considerable evidence that other languages are reducing their classifier inventory as technical change and semantic extension exert their influence. For example, Greenberg (1975:34) cites evidence to this effect from Gilyak, as do Dunn and Yanada (1958:50) for Japanese.

We have also noted above that the compounding of classifiers in some cases serves to reinforce classification. The prefixed classifier may occasionally replace the classifier in its usual position.

The inadequacy of the situational sentence frames used to categorize items as repeaters points out another puzzling theoretical problem. The "background" information required constitutes a sort of frame of reference or universe of discourse. Reference to hands, for example, presupposes bodies and people to which they are attached. This in turn necessitates a hearer making such a presupposition in order to make sense of a query about the number of hands. There is a close association between status as entity and possession in Thai. Not only because the existential verb /mii/ also means "have", but also because the possessive marker /khǎw/ also means "thing, possession" (with stress and length modifications) as in the following example:

8.2 khǒŋ khǒŋ kháw
 thing POSS he "his things"

Perhaps this notion of possession is the mechanism which allows "parts" such as those items commonly used in repeater phrases (e.g. /mǎi/ "hand", /thalee/ "sea", etc.) to be seen as entities not requiring second predicate-positions (arguments) to be filled. The second argument need not be stated if it is presupposed by some expected relation of possession.

One method of exploring a native speaker's concept of entity is to elicit a folk taxonomy of "things". In initial sessions of the fieldwork for this paper, this area was explored, especially since Mathiot (1962) was so successful in relating Papago folk taxonomy to syntactic categories and real-world distinctions such as shape. However, a full taxonomy proved more difficult to elicit than expected, partly because of the sophistication of the informants, who were all generally well-educated. Denny (personal communication) advises that the relation between linguistic and folk taxonomic structures is still a relatively unknown area and it is difficult in most cases to draw inferences from one to the other.

A close relationship between criteria of classification and criteria of categorization did not appear. Although there was some overlap, it is generally true that categorization proceeds by a mixture of syntactic and semantic criteria while classification is a semantic matter based to a large extent on qualities extant in (or imputed to) first-order entities classified, and on cultural parallels from these entities to second- and third-order entities. These parallels

were not investigated carefully here, but with the increasing evidence for parallels in English between words referring to space and words referring to time (see especially H. Clark 1973) the assumption of the existence of such semantic connections is not controversial. There is some syntactic influence in classification, however, as seen in the effect of a classifier overtly present in the compound headnoun (as described in section 4) and in the tendency for /an/ to expand and generalize its function to become a marker of unit reference in general.

There was only an indirect relationship to be seen, as well, between criteria of classification and criteria of extension. It is true that many of the same criteria are used in the two processes since extension takes place by working its effects on the criteria of classification. But the choice of a specific criterion of classification as the basis of a semantic extension is still the product of a variety of motives, only some of which are linguistic, and few of which are clearly established. Also, extension often involves "meta-features" or relationships between features (such as shift of focus, generalization, shift of viewpoint, part-to-whole, etc.) which seem to have no place in straightforward classification. The relationship between criteria of classification and criteria for compounding was discussed in section 4.

8.3 APPLICATIONS

The most important applications of the findings of this thesis are in the areas of lexicography and comparative lin-

guistics.

The criteria of classification listed in Figure 5 could be the basis of a comprehensive classification of the various senses of a given item. For example, it is relevant and important to note that /khon/ can occur in three distinct environments: as a Repeater, a Partial Repeater and as an Extended Classifier. Further it is important to note that /khon/ retains its basic sense in all three roles. The item /khon/, then could be represented by a single entry with 3 code symbols for the three roles. A classifier like /baj/, on the other hand, would require at least three sub-entries since /baj/ "S2D shape" is a PR Unit, whereas /baj/ "container" is an Extended Classifier, as is /baj/ "S3D shape". An item need be listed as noun only if it actually occurs with full substantive function (i.e., not in the role of supplying unit reference to the referent of some other overt or implied head-word). Further, full substantives can be listed as:

- (i) commonly classified (with the most frequent classifiers supplied)
- (ii) not usually classified
- (iii) usually classified with General Units (which need not be supplied)

"Classifier for..." will still be a useful piece of information but the list of nouns classified can be more comprehensive yet at the same time more compact since better generalizations can be made. If specific routes of extension are known, they can be referred to. They could be a useful mnemonic device, especially in bilingual or students' diction-

aries.

There is an ever-present danger of confusing historical development with present-day distinctions. For example, it is doubtful if modern speakers relate the form /lēm/ directly to a sickle. Nevertheless, knives are perhaps the most prominent sub-domains within the class of /lēm/, and most speakers probably see oxcarts, candles and boat helms as somehow marginal members of the set. Many of the more marginal members of the set are alternatively classified (as shown in Table 11), and use of /lēm/ for needles (for example) is restricted in modern times to professional tailors and dressmakers (Adams & Conklin 1974:7). Many of these marginal members are already obsolete, for example the use of /lēm/ for elephant tusks, reported in Frankfurter (1900:53).

Not all the marginal members are likely to disappear, however, for some are subject to a kind of petrification to relic status and are unlikely to be replaced easily. The noun /kwian/ "oxcart" is an example. Therefore, although rapidly changing cultural values and technology threaten some of the more semantically specific classifiers, some classificatory connections usually remain and the only accurate explanation for this is a historical one.

An interesting corollary to this fact is the probability that if the historical basis of some of the classifier classes were more widely known, the use of the respective classifiers would probably decline. It is easier to accept and use an item as a part of the syntactic system of one's own language than it is to accept the same form knowing the "un-

modern" associations of its historical derivation. Of course city folk would be more prone to this kind of effect than the more traditional country folk.

The implications of this paper for semantic reconstruction of earlier forms of Thai are, I feel, quite significant. Gething has already made advances in the historical semantics of Thai using comparative data (see Gething 1977).

One major obstacle to such reconstruction (and its implications for clarifying the picture of genetic relations in the area) is the lack of reliable data on many South East Asian languages. Fortunately, many grammars and dictionaries are now being published, the result of an upsurge of interest in the area during the Vietnam-American war. In addition, many capable linguists from South East Asian countries have now completed their training and their future contributions are eagerly anticipated.

A further caution is necessary. Semantic reconstruction cannot proceed at all without detailed knowledge of historical and cultural factors (as was stressed in section 7). To an equal or perhaps greater extent, semantic reconstruction depends on complementary evidence from phonological reconstruction. Without the latter it is difficult, and in many cases impossible to tell whether items are cognate or not. The claims made about the basic sense of /lêm/ were based on the inclusion of any item glossed as "knife" in the class of a "meaningful" classifier in other languages. In most cases the classifier did not seem to be a cognate of /lêm/, but one cannot be sure of the status of these other classifiers

without comparative studies of the phonological relations between languages, if any. Further insights based on cognate items could help to establish many proto-meanings to a point near surety. For example, Thai contains a verb /lem/ "to crop, browse, nibble or graze (on field stubble); to trim or hem woven cloth; to cut a little, to cut little by little, etc." (from Manitcharoen 1977:852, and Haas 1965:491). Are these two forms (/lém/ and /lem/) cognate? The only difference is the tone, and tonal quality is perhaps the least stable phonological parameter. Lao has a similar word. Should phonological information allow us to relate these two words it would open up an entirely new criterion of classification for Table 12 : a notion of slow gradual movement like that of a heavy object on rollers, a grazing animal, or a worker reaping a large field by hand. It is my impression that such a sense is unlikely, but there is some amount of association with harvesting activity in the class of /lém/, and fresh evidence can alter the possibilities radically in some cases.

8.4 FURTHER RESEARCH

Areas that need further study have already been pointed out in the discussion of weaknesses in this thesis. These areas are mainly as follows:

- (i) The distinction of "inchoative" versus "established" may have wider significance in the semantic structure of Thai than it has been allotted here.
- (ii) The same is true of the notion of possession. Some kind of inalienable possession may very well be the criterion

of status as repeater in some cases. The possessor is part of some kind of background knowledge. In the case of body parts the background knowledge is a universal of the paradigm type of communication situation: it is a "known" piece of information that the hearer is a human. A folk taxonomy of the domain of "things" would also be a valuable contribution to this unclear area.

(iii) The factors which regulate noun compounding in Thai are essential to an understanding of classification. While Fasold 1968 is a valuable contribution to this area, the crucial connections between compound members, connections which govern compounding, seem to depend on more than derivation from deep structure sentences. Much more needs to be learned about compounding and classifying and the strategies employed by speakers who use these processes.

(iv) Ultimately, insights into the intricacies of the classifier system should be applied to furthering Thai lexicography. A first step in this direction is to carry out the original aim of this thesis: an analysis of the semantic distinctions between the members of the overall category of classifiers. This would have to proceed by semantic domains which are more or less arbitrarily delimited. This thesis has only marginally touched on the criteria of classification proper, and there is of course a great need to have a thorough picture of the relations between classifiers at this level.

Further study of the distinctions between classifiers,

the content of the classes, and in particular the paths of extension in cognate classes in related languages should yield solid evidence to support or enlarge on what is known at present. about semantic relations between headwords and classifiers and about the overall semantic structure of Standard Thai.

BIBLIOGRAPHY

- Adams, K.L., Becker, A.L., & Conklin, N.F. 1975. "Savoring the Differences Among Classifier Systems". Paper presented at the Eighth International Conference of Sino-Tibetan Languages and Linguistics.
- Adams, K.L., & Conklin, N.F. 1973. "Toward a Theory of Natural Classification", in Papers from the Ninth Regional Meeting of the Chicago Linguistic Society. Pp. 1-10.
- Adams, K.L., & Conklin, N.F. 1974. "On the Numeral Classifier in Thai". Paper presented at the Seventh International Congress of Sino-Tibetan Languages and Linguistics.
- Allan, K. 1976. "Collectivizing", in Archivum Linguisticum 7: 99-117.
- Allan, K. 1977. "Classifiers", in Language 53.2: 285-311.
- Allwood, J., Andersson, L.G., & Dahl, O. 1977. Logic in Linguistics. Cambridge University Press: Cambridge.
- Basso, K.H. 1968. "The Western Apache Classificatory Verb System: A Formal Analysis", in Southwestern Journal of Anthropology 24: 252-266.
- Bazell, C.E. 1966. "The Sememe", in Readings in Linguistics II, E. P. Hamp et al. (eds). University of Chicago Press: Chicago. Pp. 329-340.
- Becker, A.L. 1975. "A Linguistic Image of Nature: The Burmese Numeral Classifier System", in Linguistics 165: 109-122.
- Benton, R.A. 1968. "Numeral and Attributive Classifiers in Trukese", in Oceanic Linguistics, Vol. 7.2: 104-146.
- Berlin, B. 1968. Tzeltal Numeral Classifiers: A Study in Ethnographic Semantics. Mouton: The Hague.
- Bierwisch, M. 1970. "On Classifying Semantic Features", in M. Bierwisch & K.E. Heidolph (eds) Progress in Linguistics. Mouton: The Hague.
- Bloomfield, L. 1933. Language. Holt, Rinehart & Winston: New York.
- Boas, F. 1964. "Geographical Names of the Kwakiutl Indians", in D. Hymes, (ed). Pp. 171-181.
- Boguslawski, A. 1970. "On Semantic Primitives and Meaningfulness", in A. Greimas et al (eds) Sign, Language, Culture. Janua Linguarum, Series Major I.XX. Mouton:

The Hague.

- Burling, R. 1964. "Cognition and Componential Analysis: God's Truth or Hocus Pocus?" in American Anthropologist 66: 20-28.
- Burling, R. 1965. "How to Choose a Burmese Numeral Classifier" in M.E. Spiro (ed), Context and Meaning in Cultural Anthropology. The Free Press: New York.
- Campbell, S. & Shaweevongse, C. 1962. The Fundamentals of The Thai Language. Thai-Australia Company: Bangkok.
- Carter, R.M. 1976. "Chipewyan Classificatory Verbs", in International Journal of American Linguistics 42.1: 24-30.
- Chafe, W.L. 1970. Meaning and the Structure of Language. University of Chicago Press: Chicago.
- Chafe, W.L. 1976. "Givenness, Contrastiveness, Definiteness, Subjects, Topics and Point of View", in C.N. Li (ed), Subject and Topic. Academic Press: New York.
- Chan, Mae-chu. 1977. "Classifiers", in Aspects of The Kaping Vernacular: A Field Study Report. A group of term papers for Chinese 632, Linguistics Institute, University of Hawaii (Manoa). Pp. 86-104.
- Chao, Y-R. 1968. A Grammar of Spoken Chinese. University of California Press: Berkeley & Los Angeles.
- Chomsky, N. 1957. Syntactic Structures. Mouton: The Hague.
- Clark, E.V. 1973. "What's in a Word? On the Child's Acquisition of Semantics in his First Language", in T.E. Moore, (ed).
- Clark, H.H. 1973. "Space, Time, Semantics and the Child", in T.E. Moore, (ed).
- Clark, H.H. & Clark, E.V. 1977. Psychology and Language. Harcourt, Brace & Jovanovich: New York.
- Conklin, H.C. 1964. "Hanunoo Color Categories", in D. Hymes, (ed).
- Conklin, H.C. 1972. Folk Classification: A Topically Arranged Bibliography of Contemporary and Background References Through 1971. Department of Anthropology, Yale University Press: New Haven.
- Cornyn, W.S. & Roop, D.H. 1968. Beginning Burmese. Yale University Press: New Haven.
- Denny, J.P. 1974. "Sensitivity to Environment in Algonquian

Languages". University of Western Ontario Department of Psychology Research Bulletin No. 293.

- Denny, J.P. 1975. "Markedness in Classificatory Morpheme Schemes", in Proceedings of the Second Congress of the Canadian Ethnology Society. National Museums: Ottawa. Pp. 242-253.
- Denny, J.P. 1976a. "The 'Extendedness' Variable in Classifier Semantics: Universal Features and Cultural Variation". University of Western Ontario Department of Psychology Research Bulletin No. 354.
- Denny, J.P. 1976b. "What are Noun Classifiers Good For?" in Papers From the Twelfth Regional Meeting of the Chicago Linguistics Society. Pp. 122-132.
- Dixon, R.M.W. 1968. "Noun Classes", in Lingua 21: 104-125.
- Dunn, C.J. & Yanada, S. 1958. Teach Yourself Japanese. English Universities Press: London.
- Fasold, R.W. 1968. "Noun Compounding in Thai", Ph.D. dissertation in Linguistics, University of Chicago.
- Frake, C.O. 1964. "Diagnosis of Disease Among the Subanun", in D. Hymes, (ed).
- Frankfurter, O. 1900. Elements of Siamese Grammar. American Presbyterian Mission Press: Bangkok.
- Friedrich, P. 1970. "Shape in Grammar", in Language 46.2 (Part 1): 379-407.
- Gething, T.W. 1968. "Structural Redundancy in Thai Semantics", in Language 44.4: 813-819.
- Gething, T.W. 1972. Aspects of Meaning in Thai Nominals. Mouton: The Hague.
- Gething, T.W. 1977. "Polysemy and Historical Semantics in Thai", in Anthropological Linguistics, March 1977. Pp. 99-103.
- Gibson, J.J. 1950. The Perception of the Visual World. Houton, Mifflin Company: Boston.
- Greenberg, J.H. 1975. "Dynamic Aspects of Word Order in the Numeral Classifier", in C.N. Li, (ed). Word Order and Word Change. University of Texas Press: Austin.
- Haas, M.R. 1942. "Numeral Classifiers in Thai", in Language 18: 201-205.
- Haas, M.R. 1965. Thai-English Student's Dictionary. Stan-

ford University Press: Stanford.

- Heimbach, E.A. 1969. White Meo-English Dictionary. Data Paper 75, South East Asian Program, Cornell University.
- Hla Pe. 1965. "A Re-examination of Burmese 'Classifiers'", in Lingua 15: 163-185.
- Hymes, D., (ed). 1964. Language in Culture and Society. Harper & Row: New York.
- Jacob, J.M. 1965. "Notes on the Numerals and Numeral Coefficients in Old, Middle, and Modern Khmer", in Lingua 15: 143-162.
- Jones, R.B. 1970. "Classifier Constructions in South East Asia, in Journal of the American Oriental Society 90.1: 1-12.
- Kerr, A.D. 1972. Lao-English Dictionary (2 Vols.). Consortium Press: Washington.
- Krauss, M.E. 1968. "Noun Classification Systems in Athapaskan, Eyak, Tlingit, and Haida Verbs", in International Journal of American Linguistics 34.3: 194-203.
- Lakoff, G. 1977. "Linguistic Gestalts", in Papers from the Thirteenth Regional Meeting of the Chicago Linguistics Society. Pp. 236-246.
- Leech, G.N. 1974. Semantics. Penguin: Harmondsworth.
- Lekawatana, P. et al. 1969. A Contrastive Study of English and Thai. Mimeographed at the English Language Center, Bangkok.
- Lekawatana, P. 1970. "Verb Phrases in Thai: A Study in Deep Case Relationships", Ph.D. dissertation, University of Michigan.
- Lyman, T.A. 1974. Dictionary of Mong Njua. Mouton: The Hague.
- Lyons, J. 1968. Introduction to Theoretical Linguistics. Cambridge University Press: New York.
- Lyons, J. 1977. Semantics (2 Vols.). Cambridge University Press: New York.
- McFarland, G.B. 1969. Thai-English Dictionary. Stanford University Press: Stanford.
- Manitcharoen, M. 1977. Phochananukrom Thai. Bamrungsan Company: Bangkok.

- Mathiot, M. 1962. "Noun Classes and Folk Taxonomy in Papago", in American Anthropologist 64.2: 340-350.
- Moore, T.E., (ed). 1973. Cognitive Development and the Acquisition of Language. Academic Press: New York.
- Nida, C.N. 1975. Componential Analysis of Meaning. Mouton: The Hague.
- Noss, R.B. 1964. Thai Reference Grammar. Foreign Service Institute: Washington.
- Poosakritsana, P. 1960. Lak Phasa Thai, Chan Prathom Seuksa 5. Thai Wattana Panich Company: Bangkok.
- Rosch, E.H. 1973. "On the Internal Structure of Perceptual and Semantic Categories", in Moore, T.E., (ed).
- Saul, J.E. 1965. "Classifiers in Nung", in Lingua 13: 278-290.
- Schafer, E.H. 1948. "Noun Classification in Classical Chinese", in Language 24: 408-413.
- Sethaputra, S. 1972. New Model Thai-English Dictionary (2 Vols.). Thai Wattana Panich Company: Bangkok.
- Silapasarn, Phraya U. 1968. Lak Phasa Thai. Thai Wattana Panich Company: Bangkok.
- Silverman, M.G. 1962. "Numeral Classifiers in the Gilbertese Language", in Anthropology Tomorrow 8: 41-58.
- Sirijaroen, L., Sopawong, W. & Chalee, W. 1974. Lak Phasa Thai (Part 2). Thai Teachers' Association: Bangkok.
- Slobin, D.I. 1971. Psycholinguistics. Scott, Foresman & Company: Glenview.
- Stewart, A.H. 1976. Graphic Representation of Models in Linguistic Theory. Indiana University Press: Bloomington.
- Thai Wattana Panich Company. 1970. Modern English-Thai Dictionary.
- Thomas, D.D. 1971. Chrau Grammar. University of Hawaii Press: Honolulu.
- T'sou, B.K. 1976. "The Structure of Nominal Classifier Systems", in P.N. Jenner et al, (eds). Austroasiatic Studies (Part 2). Pp. 1215-1248.
- Waldron, R. 1967. Sense and Sense Development. Andre Deutsch Company: London.

Warotamasikkhadit, U. 1970. Thai Syntax. Mouton: The Hague.

Whorf, B.L. 1956. Language, Thought and Reality: Selected Writings of Benjamin Lee Whorf, edited by J.B. Carroll. Wiley Company: New York.

Witherspoon, G.J. 1971. "Navaho Categories of Objects at Rest", in American Anthropologist 73.1: 110-127.