Cognitive Models of the Thai Classifier System

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This study is about noun categorization. Specifically, it investigates the process of noun categorization in the Thai language, a language which possesses an overt noun categorization system known as "classifier system." In the classifier system, a linguistic unit known as "numeral classifier" is used to precede or follow a noun when that particular noun is being counted. Commonly found in the Southeast Asian languages, a "numeral classifier" occurs is the slot after noun and number in a numeral phrase in languages such as Thai, etc., (e.g., /maa5 sɵɵŋ5 tua1/: dog two classifier = two dogs) or between numbers and nouns in languages such as Vietnamese (e.g., hai ngu'o' ong: two classifier grandfather = two grandfathers). At first glance this might appear trivial in the sense that every language does use some kind of unit when quantifying certain nouns, i.e., a unit such as "glass" to quantify water. Unique in Southeast Asian languages, however, is the fact that every noun, when being quantified, takes an additional term - the classifier. In English, when mass (paper, soap, etc.) nouns are counted, units such as "a piece," "a bar," etc. are needed. As for count nouns, numbers are attached in front of the nouns. In the Thai language, both count and mass nouns take "unit counters" when counted. As a result one needs a construction such as "two classifier books" to connote the idea equivalent to "two books" in English.

Previous Studies

Reviewing the literature on the studies of classifier systems, one finds three major topics: distinction between classifiers and the other kind of unit which fits in the same slot, known as "quantifiers", historical comparative studies of

classifier system in related languages, and semantics of classifiers.

Classifiers vs. Quantifiers

To distinguish classifiers from quantifiers, many linguists come up with different dichotomies. Burling (1965:259) proposes a semantic criterion of "individual" vs. "amount" to account for the distinction. According to Burling (1965:259), "individual" is characteristic of "classifiers," i.e., in the phrase "dog five body" (classifier for dog), individual dogs are being quantified. In a phrase "dog one dozen," however, the individual aspect is overlooked and dogs are seen collectively. Also collective in the sense of "dozen" are words for weight, measure terms, piles, bundles, etc. (Burling 1965:270).

T'sou (1976:1217) proposes the features of "exact" vs. "entity" to distinguish classifiers from other words. While "exact" is used to account for the amount of objects being counted, "entity" denotes the characteristics of the objects. In order for a word to qualify as a "true classifier," both features ("exact" and "entity") have to be present. That is, while the word is used in counting, it has to simultaneously describe the characteristics of the noun it co-occurs with. Becker (1975:111) indicates that, semantically, quantifiers and classifiers inform us of different things about the nouns. According to Becker (1975:111), classifiers represent covert knowledge and their meanings are difficult to describe explicitly, while quantifiers are easy to discuss and their meanings are overt. Conklin (1981:68) proposes that quantifiers have a heavier functional load than classifiers. According to Conklin (1981:76), if quantifiers are omitted communication will be disrupted, while the omission of classifiers (in many cases) does not yield the same effect. Adams (1989:9) adds syntagmatic criteria to distinguish classifiers from quantifiers. As Adams (1989:9) indicates, for example, the size of a number can affect the appearance of the classifier in a numeral phrase. Classifiers in Thai, for instance,

do not have to appear when the number (they follow) is large (e.g., 1,000, etc.).

Historical Comparative Studies

In her historical comparative studies of classifier system in Austroasiatic languages, Adams (1989) finds that there are recurring similarities in the types of classes that appear in different numeral classifier languages. The common underlying dimensions found are "animacy," "inanimacy," dimensions such as "shape and sizes" (derived from perceptual bases), and other kinds of dimensions specific to languages and cultures (e.g., the use of /chuək3/ [rope] for elephant which refers to the way elephants were led around) (Adams 1989:18).

Similar to the Adams' (1989) study of the classification systems of the Austroasiatic languages, Conklin's (1981) is a comparative study of the classification systems of the Tai languages. Among these languages, Conklin (1981:130) finds "animacy" to be a universal fundamental semantic parameter. In dealing with inanimate objects, Conklin (1981:136) uses plant-part classifications to describe inanimate classifiers. These classifications, according to Conklin (1981:136), are derived from the fact that many morphemes used in referring to plant parts are also used as classifiers. The assumption is that classifiers categorize objects on the basis of the physical attributes of the plant parts to which the morphemes refer. The classifications underlying the systems are: (1) stick-based classification; (2) seed-based classification; (3) fruit-based classification; (4) leaf-based classification; and (5) flower/star-based classification. In addition to the plant-part classes mentioned, there are: (6) tuber- and lump-based classification; (7) cloth- and board-based classification; and (8) other well-defined semantic domains. These classes appear to be the ones that display both central members (fruit, leaf, etc.) and some kind of linkage between these central members and other members. The study by Conklin, however, is a historical comparative study on the description of classifiers in related languages; the process of classification is not pursued in depth.

Semantics of Classifiers

In the studies on semantics of the classifiers, a common theoretical foundation employed is the classical theory which holds that categories are defined by common properties. Hundius and Kölver (1983:189), basing their study in the classical view conclude that "[classifiers] are doubtless meaningful, however, in the sense that, in principle the parameters utilized are traceable to the inherent semantic structure of the associated nouns." When looking at the actual system, "traceabilty of the parameters of the nouns associated with the classifier" becomes problematic. In many cases, one finds that many nouns in one class (by means of classifier) have different physical characteristics. To resolve this, Hundius and Kölver (1983:208) notes that in addition to classifiers of which meanings are arrived at from characteristics of nouns, there are classifiers which are associated with nouns that have irregular (not uniform) shapes, that lack definite contour, and that are too large or too complex to be apprehended and identified as typical contours. As such, there exist classifiers of which the meanings are not readily traceable.

The classifiers of whose meaning can be traced are not without a problem. In many cases (e.g., the classifier /bay1/ with the nouns "fruit" and "leaf", etc.) nouns being classified by the same classifier do not have the same physical characteristics. To make sense of the phenomenon, Hundius and Kölver (1983:205) attribute that associative techniques of gradual expansion and shifting of features are in operation. While the expansion scheme presented might work, the fundamental idea that nouns give meaning to classifiers deserves a closer look. Since the nouns have different physical characteristics, the nouns themselves cannot render meaning to classifiers. Expansion of any sort must be caused by the people who select a particular aspect of the two nouns and link them together, and it could very well be that the aspects are of other kinds, not only physical ones. The concept that noun classification is centered around the physical characteristics of the nouns leads to

shortcoming in many studies. Placzek (1983:16), for instance, subscribing to the aforementioned concept, was unsuccessful in discovering common features among the nouns in the class of /lem3/, and concluded that classifiers do not function to group nouns together and that there is no psychological reality for some classes such as the class of /lem3/ in the Thai classifier system. When a conclusion is reached that a noun class is not a class (in the sense that its members have no common properties), one should take a closer look into the basic concept of noun class. In the case of Placzek, it could be that he was unable to find psychological reality of the class of /lem3/ because he was trying to discover common properties among nouns, which were not organized around the concept of common properties. This reveals that the classical view of categorization cannot account for the system and as a result, the new theory is needed.

Prototype Theory

As a result of her own studies, Rosch (1973, 1975, 1978, etc.) demonstrates that categories in general have "best example" members called prototypes and that human neurophysiology, capacity to perceive, learn, etc. play a role in categorization, and that members of a category are related by means of family resemblance. According to Rosch and Mervis (1975:575), the most typical member in the mind of the people is the Prototype. All other members are non-prototypes, but some non-prototype differ more greatly from the prototype than others. One can measure the difference by listing the attributes which make up the prototype, and see how many of these attributes any particular non-prototype fail to meet. The fewer the attributes the non-prototype has in common with the prototype, the less it is similar to the prototype. Conversely the members of a category come to be viewed as prototypical of a category as a whole in proportion to the extent that they have attributes in common with those non-prototypical members. Taking it a step further, Lakoff (1987:68) proposes that human

beings organize their thought by means of structures called "idealized cognitive models."

Idealized Cognitive Models

Incorporating the prototype theory to account for linguistic classification, Lakoff (1987:68) asserts that prototype effects are byproducts of various idealized cognitive models. All these models are imbedded in culture. Defining "Idealized Cognitive Models" (ICMs) as an oversimplified and culturally shared preconception of what something is like and how it proceeds, Lakoff (1987:68) states that each ICM is a complex structured whole, or gestalt, which uses four kinds of structuring principles: propositional structure, image schematic structure, metaphoric mappings, and metonymic mappings. Lakoff demonstrates how ICMs work in the case of language which has overt categorization. Using data in the Dyirbal classifier system collected by R. M. W. Dixon (1968), Lakoff (1987:113-114) shows how cultural prescription and metonymy might bring about the grouping of women, fire, and dangerous things into one class. Lakoff (1987:95) states that there exist general principles at work in the Dyirbal system as well as in some systems of human categorization. The principles are: (1) a centrality or prototypical member of each class, (2) chaining which links prototypes with non-prototypes, (3) experiential domains which may be cultural-specific, (4) idealized models of the world such as myths and belief, (5) specific knowledge (e.g., knowledge of mythology) which overrides general knowledge, and, in the case of the Dyirbal system, (6) other things, since there exists an "everything else" category which has no centrality and chaining. With this, Lakoff (1987:96) adds (7) no common properties principle to show that the Dyirbal speakers might not see that "women, fire, and dangerous things" have something in common. The analysis supports the notion that common properties seem to play a role in characterizing the basic schemas within a given category. Finally, (8) the motivation principle is stated to assert that the general principles indicated have no predictive power. They are only

used to make sense of the system in question. Specifically, Lakoff (1987:113-114) proposes the following models in accounting for the Dyirbal classifier system:

1. Propositional Models: These models specify elements, their properties, and the relations holding among them. It should be made clear that "properties" do not refer to physical properties only, and relations can be any number of types, i.e., mythical, functional, physical, etc. For example, we find in the Dyirbal classifier system that the sun and women are members of the same category, because, according to the Dyirbal myth, the sun is a woman (Dixon 1968:121).

2. Image-Schematic Models: These models specify schematic images, such as long, round, possessing trajectories, etc. This notion of images, however, is different from that of the objectivists (who holds that "image" refers to physical properties of objects "out there" in the world.). The term "images," according to cognitivists, does not refer to the inherent physical properties of the objects, but to human knowledge about the objects. For example, Japanese speakers use the classifier "hon" to classify objects which are long, thin, and rigid. The use of the classifier "hon," however, is extended to actions such as "shots in basketball," "serves in volleyball," and the like, because the speakers use image (trajectory) schema to relate these actions to long-, thin-, and rigidness (Lakoff 1986:27).

3. Metaphorical Models: these models allow human beings to map two domains of experience together. By means of metaphorical models we are able to understand the abstract in terms of the concrete, for example anger in terms of heat.

4. Metonymic Models: these models represent part-whole structure. Using them, people focus on a part of an object, such as a readily-observable physical property or identifying characteristic as a means of placing the object in a certain category. Thus, a hairy grub is in the same category as the sun in the Dyirbal classifier system, because of its sunburnlike sting (Dixon 1968:121).

Methodology

The problems on semantics of the classifier system discussed earlier lead to a methodology which involves research practices commonly employed in psychology, anthropology and linguistics. Since this approach is "informant-oriented," this study obviously involves 75 native speaker informants who serve to provide linguistic data; this, in turn, implies fieldwork which is traditional anthropological practice. Due to the small number of informants who agreed to participate, rather than selecting randomly from a larger pool, all the people who volunteered for the study were used as sources of linguistic data. Therefore instead of a planned balance in the informant pool, variation was "natural." There are, for example, unequal numbers of male vs. female informants. However, the major criterion was controlled: all informants are native speakers of the Thai language. All are literate and all speak Thai as a first, if not only, language.

To show that each noun class demonstrates a prototype effect, it was essential to elicit prototypes and non-prototypes of each class, and to determine if the prototypes and non-prototypes are, in fact, related. It should be made clear at the outset that the terms "prototype" and "non-prototype" are used in the crudest sense. "Prototype" refers to the first noun that comes to mind, or the best example of a given category which informants can recall. "Non-prototype", then, refers to the non-best example or anything other than the best example. In arriving at prototypes, non-prototypes, and their relationship, several procedures were employed. These were: (1) free-recall to elicit prototypes and non-prototypes; (2) informal follow-up interviews to ascertain, for example, that by "table" informants refer to all kinds of tables (e.g., dining-table, coffee-table, etc.), and (3) attribute listing to highlight the relationship between prototypes and non-prototypes. Eighteen classifiers are used in this study (list of classifiers in Appendix A)

At the free recall stage, each informant was asked to promptly respond to the question of which nouns they thought were the best examples of "match" with a given classifier word

presented to them orally. The informants were instructed to respond in order with the best example coming first. After this elicitation was complete, informants were shown their previous answer regarding the best examples of each classifier, and were then asked to name other nouns which belong to the classifiers *as "second" best example. The goal was to obtain the* immediate circle after the "core" (prototype) of each class, given that it is hypothesized that the categories are gradient.

At the attribute listing stage, using the prototypes and non-prototypes produced earlier, each informant was asked to list at least three attributes which s/he thought were the features of each noun. Informants were told that "attribute" did not refer only to "physical" characteristics, but also to other kinds of features such as the functions of the nouns, the way in which humans interact with them, etc.. The two sets of attributes were then juxtaposed. The common attributes which can be said to link the prototypes and non-prototypes, were recorded. The common attributes found in each case were organized into types of chaining principles.

Results

Prototypes and Non-Prototypes

Results indicate that there exists a range or continuum of classifiers. At one extreme are classifiers to which all informants responded in common with a single noun, while at the other are those which elicit as many as 28 nouns. In many classes, there exist shared prototypical nouns, so designated by the majority of informants. The classes of /ton3/ and /tua1/ are the ones with only one prototype ("tree" and "animal," respectively). In the classes of /laŋ5/, /lem3/, /khan1/, /dɵɵk2/, /luuk3/, /bay1/, /phɛn1/, and /thɛŋ3/, there exists one common prototype which most of the informants named. The prototypes are "house," "book," "street vehicle," "flower," "fruit," "leaf," "paper," "and "pencil," respectively. In the classes of /lam1/, /daam3/, /phɯɯn5/, /duaŋ1/, /sen3/, /kɵɵn3/, /met4/, and /?an1/, there exist more than one common prototype. The common

prototypes (with high frequencies), however, do not make the nouns named at low frequencies "non-prototype." Every noun recalled by every informant is considered a "prototype" because it is a prototype to that individual informant (though it is different from the one named by the majority).

As for non-prototype, there exists no class with a single non-prototype. The informants named more than one non-prototype for all classes. As was the case with the prototype stage, there are several classes with common non-prototypes. In the class of /ton3/, 73 informants named "pillar" as a non-prototype. In the remaining classes, though many non-prototypes were named, there exist some non-prototypes which the informants named with greater frequency than others in each class. The less frequently named non-prototypes and the common non-prototypes are considered non-prototypes to the extent that they are non-prototypes to the minds of the informants who named them.

Chaining Principles

From the attribute listing stage, the results show that a majority of nouns have one or two features in common; comparatively few show three (/thɛŋ3/, /phɛn2/, and /phɯɯn5/) and zero features in common (e.g., most informants indicate that prototypes and non-prototypes in the classes of /khan1/, /?an1/, and /lem3/ have no common feature). This indicates that most classes demonstrate a prototype effect, i.e., members of the classes are related, and the classes are gradient because there exist differing degrees of membership.

In addition to prototype effect, the results show that there are more than one kind of chaining principles involved in most of the classes. Other than "physical' attribute which is named as common feature between "prototype/non-prototype" pairs in many classes, there are attributes such as "function" ("vehicle" in the class of /lam1/, "live in" in the class of /laŋ5/), "quality" ("natural" in the class of /met4/), "human interaction" ("sweet" in the class of /met4/, "part" in the class of /daam3/), "material"

("metal" in the class of /khan1/), "location" ("sky" in the class of /dauŋ1/), etc.

As the informants were able to give the common features of many pairs of prototype/non-prototype pairs, the results reveal that, to a great extent, the Thai classifier system consists of noun classes with prototype effects. However, there exist classes in which members are not related in a way in which members in a class with prototype effects are. The fact that most of the informants could not come up with the common features for the so-called "prototype/non-prototype" pairs leads to the caution that the pairs, in fact, might not be the pairs of prototype and non-prototype. As such, it is accurate to state that because these classes are not classes which have a "prototype" structure, in order to know their exact structure a different approach is needed. As for the classes with prototype effects, their structures do not stop at this stage. One cannot simply assume that, for example, "animal" and "table" are in the same class of /tua1/ because they both have "legs." Rather, one should look into the mechanism in the speakers' cognition which lead them to pick "legs" as a criterion when classifying the two objects. The common features found between the prototype/non-prototype pairs obviously do not occur randomly, since in many cases, the informants came up with the same answer (e.g., the case of /tua1/ in which all informants agree that "parts" of objects link the objects together).

Cognitive Models of the Thai Classifiers

Similar to the Dyirbal classifier system, the Thai classifier system works on some kinds of general principles. The principles proposed by Lakoff outlined above can also be used to make sense of the Thai system. Like in the case of the Dyirbal system, there exist some general principles which motivate the Thai classifier system. First, from the data obtained (in the previous two chapters) most classes are classes with prototypes effects. Second, as classes have prototypes and non-prototypes, chaining links them together. Given these facts, there must exist experiential domains and knowledge

specific to the Thai culture which cause people to generate the chainings they use in linking the prototypes with the non-prototypes. There also must be other kinds of principles in addition to the kinds mentioned since there exist classes (/khan1/, /lem3/, and /?an1/) which have no prototype effects. It has to be kept in mind that, like in the case of the Dyirbal, the principles mentioned work to motivate the system. They do not have any predictive power. The common features between prototypes and non-prototypes which work as criteria for classification can be said to be constructed by propositional, image-schematic, metonymic, and metaphorical models proposed by Lakoff (1987). Metaphorical models are especially crucial to an understanding of the Thai classifier system.

Propositional Models

As stated, propositional models specify elements, properties and relations holding among objects. "Properties" do not refer only to physical properties. In the Thai classifier system, relations include function, material from which objects are made, locations where objects are usually found, and quality or capability of objects. For function we see, for example, the class of "laŋ5" in which house and other objects are grouped together because of their "live-in" function. As far as "material" is concerned, the class of /khan1/ can be used to demonstrate the case in point. In this class, we see that "car-spoon" are linked together by the informant, for the reason that both are made of metal. The class of /duaŋ1/ can be used to demonstrate the "location" relation. In this class, objects such as star, sun and moon are seen to be in common because of their location; "in the sky." For the qualification relation, in the class of /luuk3/, we see that "fruit-meatball" are linked together because of their edibility.

Image Schematic Models

Image schematic models are the prevalent models that provide organization within each class of nouns (as opposed to

across classes for metaphorical models) underlying the Thai classifier system. Again, it should be made clear that "images" in this study are not derived from the physical properties of the objects in question. Rather, they are images derived from people's knowledge about the properties of objects. For example, one informant might identify the physical attribute "long" as a common feature between the prototype/non-prototype pair "pen/pencil," while another might identify the "pointed" physical feature. In another case (/kɵɵn3/), it is not the exact shape of objects which provides the basis for classification. Rather, it is the fact that the objects in question (stone/meat) have "no fixed shape" which make them belong to the same class.

Metonymic Models

Metonymic models are prevalent throughout the Thai classifier system. The best example of the class in which metonymic models are at work is the class of /tua1/. In this class, we see that items such as chair, table, skirt, blouse, etc. are included in the same class as "animal" because of their parts (e.g., trunk, legs, etc.). Similarly, in the class of /daam3/, some pairs of objects are linked together by means of their part (e.g., handle) and it is the metonymic principle which underlies such linkage.

Metaphorical Models

Indicating that metaphor is a matter of thought (not language), Lakoff (1993:1) states that the locus of metaphor is in the way we conceptualize one mental domain in terms of another. Metaphor, in this sense, refers to "a cross-domain mapping in the conceptual system" (Lakoff 1993:2). Significantly, Lakoff (1993:6) cautions that one should not confuse names of mapping ("love" as "journey", etc.) with metaphor. In the case of "love" as "journey," the metaphor actually resides in the mapping of knowledge about journeys onto knowledge about love, i.e., it is a set of conceptual

correspondences (Lakoff 1993:6). As Lakoff (1987:114) states, metaphorical models (mappings) allow humans to map two domains of experience together. As such, it can be said that metaphorical models provide the underlying formative basis for the entire Thai classifier system, since one noun is understood in terms of another (e.g., "plate" in terms of "leaf," etc.) Throughout the system, we see multiple domains of experience mapped together in one class. For instance, in the case of /tua1/, we find that the domain of "animal" is mapped onto the domain of objects such as table, chair, etc. This kind of phenomenon appears in all classes; there is no class which consists of only one domain. The claim that metaphorical models underlie the Thai classifier system is then accurate.

We find metaphorical models in operation on less basic levels as well. As stated by Adams and Conklin (1973) and Conklin (1981), certain classifier words denote plant parts (e.g., /bay1/:leaf, /ton3/:trunk, /dɵɵk2/:flower, /met4/:seed). In these cases, the majority of the prototypes of each class (leaf for /bay1/, tree for /ton3/, flower for /dɵɵk2/ and seed for /met4/) named by the informants makes it very clear that these classes are formed on the basis of a metaphorical model which maps the domain of "tree" to the domains of the objects of these classes. In the less clear case of /luuk3/ (offspring) for which /phon5la1maay4/ (fruit) is the prototype in a majority of cases, the original form of the word /luuk3maay4/ (fruit) has been replaced by the Sanskrit form. At the superficial level, there seems to be no connection between the domains of "offspring" and "fruit." When the definition of "phon5la1maay4" is examined, however, we find that it is "offspring or product of trees; luuk3maay4." In the saying "luuk3maay4 lon2 may3 klay1 ton3" (fruit falls not far from tree), the old usage of the word /luuk3maay4/ still exists. On the basis of this information, the mapping of the domain "offspring" and "fruit" is well justified. Other than the broad metaphorical models which map several classes to certain domains (tree, offspring), there are more specific models (propositional, image schematic, metonymic) in operation in each separate class. The data on criteria for classification provide a description of these models.

Conclusion

With prototypes, non-prototypes, and criteria for classification derived by means of informant-oriented methodology, a description of the Thai classifier system can be postulated. In the system, there exist classes which operate on the basis of the principles mentioned (centrality, chaining, etc.), as well as those which operate on other kinds of principles (i.e., /khan1/, /lem3/, and /?an1/ with no prototype effects).

Classes with prototype effects do not occur because of inherent features of objects in the classes. The fact that different informants identified different chaining principles for the same prototype/non-prototype pairs leads to the conclusion that, though people classify the same objects in the environment, they have different views of those objects. Since there are many aspects inherent in an object, it is individual cognition that causes people to focus on different aspects of the object in question. This does not imply, however, that nominal conceptualization is an individual affair. In usual situations in which classifiers are used, communication flows, despite the fact that individual styles of classification differ. To that extent, process of classification is public. The concept of "cognitive models" helps us understand how classification comes to be an "individual" as well as a "public" affair. The Thai classifier system is found to be structured around shared "cognitive models" which in turn are constructed by "metaphor," "metonymy," "image schemata," and "propositions" imbedded in the Thai culture. The essence of the Thai classifier system, as has been seen, is the understanding of one domain of things in terms of another. The cross-domain understanding is expressed in the use of objects from different domains with the same classifier, and the use of the same object with different classifiers. These kinds of linguistic expression which reflect the mapping of two domains of experience result from metaphorical mapping which is conventional and fixed in our conceptual system (Lakoff 1993:7). As metaphorical models pervade the Thai classifier system, basically the other kinds of models (image schematic, metonymic, and propositional

models) are subsumed into the metaphorical model system. This takes place because in these models one domain of experience is understood in terms of another.

Previous studies (Adams 1989, Conklin 1981, and others) recognize that some classifier morphemes are those also denoting plant parts. The researchers suggest that the application of such terms is the result of metaphorical extensions. This study provides more details on how exactly those extensions work. The results show that some informants may focus on "shape" while others emphasize "function." This indicates that while the basic underlying mechanism which people use when classifying is the same, there is room for individual variations in most cases. This brings us back to Becker's (1986:334) notion that the classifier system is therefore "a metaphorical open-ended system and that the assignment of classifiers also has to do with rhetorical strategy in which one builds, plots, and policies around three this's, eight that's and fifteen whatever's, rather than grammatical strategy."

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Appendix A
Classifier Words and their Dictionary Meanings

kɵɵn3 (ก้อน): classifier for lumpy objects, e.g., rocks, lumps of clay or sugar, cubes of sugar, chunks or hunks of coal or charcoal, bricks, broken bricks, cakes of soap, clouds, and figuratively, sum of money.

khan1 (คัน): classifier for long-handled objects (spoons, forks, umbrellas, fishing rods, plows); for vehicles other than carts.

duaŋ1 (ดวง): classifier for certain round shapes or objects, e.g., seals, stamps, spots, stains; for sources of light, e.g., lamps, stars, the sun, the moon; for eyes; for the soul.

dɵɵk2 (ดอก): classifier for flowers of all kinds, for incense sticks, for arrows.

daam3 (ด้าม): handle, hilt, holder; classifier for pen.

ton3 (ต้น): classifier for trees or plants of all kinds; for stalk, stems, posts, and the like.

tua1 (ตัว): classifier for animal, fish, insects; for tables, chairs, desk; for playing cards, cigarettes, pen points; for articles of clothing such as shirts, coats, dresses, trousers; for parts, characters (in the play); for digits (numbers), letters (alphabet); etc.

thɛŋ3 (แท่ง): bar, ingot, classifier for pencil

bay1 (ใบ): classifier for leaves, fruits, eggs, various kinds of containers (e.g., baskets, boxes, cups, bags, basins, etc.); also for slips or sheets of paper (e.g., notes, certificates, tickets).

met4 (เม็ด): classifier for seeds, grain, pills, gems, pimples, etc.

luuk3 (ลูก): classifier for fruit of any kind; for mountains; for certain round and small objects.

lem3 (เล่ม): classifier for sharp-pointed objects (e.g., knives, axes, pins, needles, (swords, etc.); for candles, books, carts, etc.

lam1 (ลำ): classifier for boats, ships, airplane; for long objects, approximately cylindrical in form, as a plant stem, beam of light

phɯɯn5 (ผืน): classifier for cloth in a form suitable for use and having definite function, e.g., towels, sheets, curtains, rugs, dust rugs, etc.; also classifier for a strip or section of land.

phɛn2 (แผ่น): classifier for thin, flat objects, e.g, sheets of paper, board, phonograph records, plates of glass, etc.

sen3 (เส้น): classifier for strand of hair, thread; for string, wire, bracelets, automobile tires, etc.

laŋ5 (หลัง): classifier for houses, mosquito-nets, tents, palanquins, etc.

ʔan1 (อัน): classifier used in the following ways: (a) for small, long objects, such as toothpicks, erasers, hooks, even though the last two have alternate classifiers, and (b) loosely as substitute for almost any other classifier.