Lexical conceptual structure of numeral classifiers in Thai -- Part 1

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Abstract

Standard Thai exhibits a complex noun classifier system categorizing the world for the Thai. One category, *bay*, consists of objects such as leaves, paper documents, files, cups, plates and car batteries among other things. Another category, *lûuk*, classifies objects such as fruit, balls, candy, monsoons and car keys. Furthermore, certain objects, such as baskets, gongs and mattresses can be classified by either *bay* or *lûuk*, imposing a degree of semantic skewing across these categories. Are these categories arbitrary and random or is there internal structure motivating them? Are the classifiers themselves merely grammatical devices or do they also have inherent semantic content, which they contribute to the meaning of the noun phrase? While some research on Thai classifiers has been presented (Delancey 1986; Placzek 1978), I am aware of none that pursue an in depth synchronic analysis implying the need for an integrated account of semantics and grammar.

First, I demonstrate that the categories of *bay* and *lûuk* are indeed semantically structured employing prototype effects similar to those discussed in Lakoff (1987). Secondly, the data that show semantic skewing between *bay/lûuk* find motivation under this prototype analysis. This section of research is presented here in Part 1. Finally, Part 2 of this research (Inglis: to appear) reveals that the classifiers themselves are shown to not only grammatically link a noun with its quantifier/qualifier but also contribute semantic content, such as shape and function, to the meaning of the noun itself. That is, the classifiers are not just arbitrary syntactical units that help construct the Thai grammatical noun phrase but also important semantic symbols that provide additional reference to the overall meaning invoked. This evidence from Thai supports a theoretical framework along the lines of Langacker (1991). Such a framework requires grammatical and semantic structure to be analyzed under a single integrated theory. Appealing to general cognitive capacities, such as organizing categorial structure around prototypes and the sanctioning of category members in terms of degrees of divergence from such prototypes, helps to capture explicitly the full linguistic motivation for noun quantification in Thai.

The present investigation motivates the synchronic ‘incoherent aggregatins’ (Delancey 1986) found in a modern language like Thai, but also points out the direction for future diachronic research, such as the chronology of innovations that a complex system might take to classify categories in its evolved state; or, the etymological beginnings of the classifiers themselves.

Thai Abstract

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1. Introduction

As the term suggests, *numeral classifiers* (henceforth classifiers) have a twofold job description. Lexically, they classify or categorise the world for the culture that draws on them. Grammatically, they provide a means of counting or in other ways quantifying objects or things that they categorize. These roles are well documented (Allen 1977; Conklin 1981; Denny 1986; Haas 1942; Hundius and Kölver 1983; Jones 1970; Placzek 1978).

This paper (Part 1) will capitalize on insights from both Lakoff and Langacker to describe one facet of the lexical categories that Thai speakers exploit to talk about their world. In using Lakoff (1987) as a methodological starting point, I will take a small slice of the Thai classifier system (namely *bay / lûuk*) as part of a base model, specify the central members for each category, distinguish important contrasts among central members, provide semantically motivated links between central and peripheral members of the category chain, and finally plot the different cognitive paths taken by each separate category to alternatively classify a subset of overlapping objects. These complex categories will then be viewed in terms of a schematic network along the lines of Langacker (1987: 369-386)[1], the purpose of which is to introduce *schema* as a necessary construct for going on to describe the grammatical structure of the classifier in Part 2 of this research (Inglis: to appear). This grammatical structure is not, however, purely syntactic but also conceptual. A central issue to this descriptive paper is that under a single theoretical framework, Cognitive Grammar offers an elegant account of both lexical and grammatical structure, accounting for a complex array of data characteristic of classifiers in general.

2. The numeral classifier phenomenon

Many classifiers have developed their categorizing function from nouns. Wang seeks to provide semantic and cultural motivation for the development of Chinese classifiers coming out of the communicative need to disambiguate singular and multiple measure terms when quantifying an object (1994: 179). It is shown in Chinese that measure words are derived from nouns by doubling a word form to count, for example, a string of 'jade'. This measure term was imprecise as to number and with the emerging use of commerce acquired an exact quantity. The emerging function of the classifier was thus not to categorise but to quantify. The function of categorising objects developed along with the need to quantify increasingly diverse objects. Once this categorising function became more conventionalised, compound nouns (or the 'class term' in Thai studies) became a major source for the rapid development of new classifiers (Delancey 1986: 440). A class term is a compound word in which the first element in the compound exists as its own classifier, i.e., the higher taxon in the compound. For example, *mii* ***lûuk****-bɔɔn sǎam* ***lûuk***, which is literally, '[there] exists *round-ball* three clsf:round-thing'. Here *lûuk* - combines with -*bɔɔn* to form the noun 'ball'. The word *lûuk* is both the hypernym in the taxonomic relationship with -*bɔɔn* and the syntactic classifier quantifying 'ball'. Delancey (1986: 439) further demonstrates (for Thai) that classifiers form a continuum ranging from a pure noun, which exhibits no classifier behavior, to a pure classifier, which manifests no noun behavior. The class term is a middle ground where the first element in the compound functions as a noun and also as its own classifier. In this paper I show that Cognitive Grammar, as a theory that combines conceptual symbolic units in

schematic relationship to each other, begins to satisfy the descriptive demands of this type of semantic/syntactic continuum. In order to understand the categorization involved, it is important firstly to know that at the lexical level, both *bay* and *lûuk* also serve as class terms for a number of objects (nouns).

2.1. The radial structure of bay

Using Delancey's continuum, *bay* functions as a class term and a classifier but not as a noun. In Thai the word for 'leaf' is the class term, *bay-máy* [literally, leaf-tree]. You therefore quantify two leaves in the following classifier construction, *bay-máy sɔ̌ɔŋ bay* [literally, leaf-tree two clsf:leaf-like-thing]. The relationship between the classifier *bay* and its noun *bay-máy* is one of elaboration. The schematic classifier 'leaf-like-thing' is conceptually enriched by the lexical noun 'leaf' with all of its semantic detail. The class terms in (1) a – b. represent specific kinds of leaves. The first element in the compound is the higher taxon 'leaf' while the second element is the kind of leaf it is. A simple noun for 'grass' is shown in (1) c. All of the examples in (1) take *bay* as their classifier and represent the prototypical members in the 'leaf-like' category.

(1)

a. *bay-chaa*	b. *bay-tɔɔŋ*	c. *yâa*
leaf-tea	leaf-banana wrap	'grass'
'tea leaf'	'banana leaf'	

Other flat, thin objects are also categorized with *bay*. The examples in (2) a – d. are similar in thickness to the leaf but deviate from the prototype in leaf-like shape and/or degree of rigidity.

(2)

a. *kràdàat*	b. *bàt*	c. *tŭa*
'paper'	'card'	'ticket'
d. *caan*	e. *tɛɛŋmoo*	f. *rákam*
'plate'	'watermelon'	'a Thai fruit'

The 'paper', 'card' and 'ticket' in (2) a – c. are members of the leaf-like category due to the iconic thin, flat relation with 'leaf'. They are similar in degree of flatness and rigidity but differ in the shape of a leaf from the prototypical members in (1). The noun 'plate' in (2) d. is flat like a leaf but being made of inflexible material deviates in degree of rigidity. The fruit in (2) e – f. are part of the 'leaf-like' category not at all by means of any iconic flatness or flexibility to the leaf but rather via an association the leaf has to the "fruit-bearing " tree.

Next, the 'sail' in (3) a. reflects an extension of 'paper', thus forming a category chain a la Lakoff. Sail retains a degree of thin, flatness but deviates in being made of cloth-like material. Likewise a different extension of paper is found in (3) b – e, where 'document', 'receipt', 'dispatch' and 'invoice' being made of paper are flat and flexible but they differ from 'paper' conceptually by making salient the written content of the paper. As a lexical set their semantic distinction rests in this difference of written content.

(3)

a. *bay-rɯa*	b. *èekàsăan*	c. *bay-sèet*
leaf-boat	‘document’	leaf-finished
‘sail’		‘receipt’

d. *bay-bɔ̀ɔk*	e. *bay-sòŋkhɔ̌ɔŋ*
leaf-tell	leaf-send things

Two discrete radial extensions from ‘plate’ can also be observed. First, ‘plate’ as a flat and round shape motivates a semantic iconic link with objects such as propellers, *bay-phát* [leaf-blow] ‘airplane prop’ and *bay-càk* [leaf-wheel] ‘boat prop’, which are also flat, round and rigid. Deviating from a round and rigid shape but maintaining the feature flat, small mattresses are then accommodated in this category in the example, *bɔ̀* ‘mattress’. Thus the flat thin shape becomes a more general broad shape[2].

The second radial extension from ‘plate’ is observed in a lexical set, where *thûay* ‘cup’, *kɛ̂ɛw* ‘glass’ and *chaam* ‘bowl’ all share *bay* as the classifier. The members in this set do not have the conception of flatness but rather receive an association via the plate to now include other objects in the table setting, such as ‘bowls’, ‘cups’ and ‘glasses’. These small beverage containers then extend to include larger liquid containers such as *ràbɔ̀ɔknáam* ‘thermos’ and *kràtǐknáam* ‘canteen’. The next members of this extension include the non-beverage, decorative jug and jar, *yɯ̀ak* ‘decorative jug’ and *lɔ̌o* ‘decorative jar’. These deviate from a table setting association found in cups and glasses, but form a link to a more general container, such as, *kɔ̀ɔŋ* ‘box’, and other larger storage containers, *kràsɔ̀ɔp* ‘sack’and *laŋ* ‘crate’.

This radial complex thus forms several chains such that the peripheral members deviate quite drastically from the central members of the category.

2.2. The radial structure of lûuk

The category *lûuk* is similar to *bay* in several ways. First, *lûuk* reveals a radial structure, albeit without the far ranging deviations between peripheral and central members that *bay* portrays. The *lûuk* concept maintains a closer affinity to its prototypical round, globular mass shape.

Secondly, *lûuk* has class term objects for which it classifies but unlike *bay*, it stands alone as the noun 'child or offspring'. Therefore, along the Delancey continuum, *lûuk* functions as a noun, class term and classifier.

There are actually three classifiers used for the *lûuk* category. These are *khon*, the classifier for humans, *tua*, for animals and *lûuk*, for inanimate objects. These three subcategories each reveal the semantic notion of a parent/child relationship in their conceptualization.

Representative data in the first subcategory is shown in (4) and (5). Being human, these take the human classifier, *khon*, rather than the inanimate classifier, *lûuk*.

(4)

a. *lûuk*	b. *lûuk-chaay*	c. *lûuk-sǎaw*
'child/offspring'	child-male	child-female
	'son'	'daughter'

(5)

a. *lûuk-nɔ́ɔŋ*	b. *lûuk-bâan*	c. *lûuk-câaŋ*
child-younger	child-village	child-hire
'subordinate/follower'	'villager'	'employee'

The nouns in (4) embrace a direct parent/child kinship relationship, whereby the child is by nature subordinate to its parent. The nouns in (5) deviate slightly by removing the kinship semantic link. This creates a more general subordinate relationship reflected as a follower of a leader in (5) a, as a villager who is under the authority of a headman in (5) b, and an employee in service to his employer in (5) c. The examples in (5) invoke no implicit kinship relation.

The second subcategory consists of animals and is shown in (6). The representatives of this category, being animate but non-human, take *tua* as their classifier.

(6)

a. *lûuk-mɛɛw*	b. *lûuk-mǎa*
offspring-cat	offspring-dog
'kitten'	'puppy'

As in (4) above, the direct parent/child kinship relation is salient in the conceptualization between a parent animal and its offspring.

The third subcategory, and the one in which we are most concerned with here, focuses around the inanimate objects that employ *lûuk* as the classifier. The word for 'fruit' is the class term *lûuk-máy* [literally, fruit-tree]. It is evident, at least diachronically, that this class term for fruit has derived from the parent/child conceptualization, the tree and fruit being the parent and progeny respectively. This is a point to be further described in Part 2 of this research (Inglis: to appear). The Thai speaker probably views *lûuk* in this inanimate context as merely 'fruit' rather than progeny. That is, he views 'fruit' as a fruit-like object just as 'leaf' is a leaf-like object in section 2.1 above. The examples in (7) a – b. represent specific kinds of fruit and help formulate the central members of this category.[3]

(7)

a. *sàparót*	b. *mámûaŋ*	c. *tɛɛŋmoo*
'pineapple'	'mango'	'watermelon'

Two distinct radial extensions branch out from the prototype in (7). The first is reflected in the subordination concept and applies to inanimate pairs of entities such as lock and key where 'key' *lûuk-kuncɛɛ* [child-lock] is subordinate to 'lock' *mɛ̂ɛ-kuncɛɛ* [mother-lock] . Other examples are 'button', *lûuk-dum* [child-button] and 'spark' *lûuk-fay* [child-fire], which is subordinate with a button hole and fire respectively.

The second extension reflects iconically the fruit-like shape of the prototype. It adapts the shape from an imperfect oblong fruit shape to the more perfect sphere consistent in balls. The objects in (8) are all types of balls including hollow balls used in sports (8) a –b, edible balls (8) c, and solid balls in (8) d – e. used for bearings and gun shot.

(8)

a. *lŭuk-bɔɔn*	b. *tàkrɔ̂ɔ*	c. *lûuk-chín*
round-ball	'takraw'	ball-piece 'meetballs/ fishballs'
d. *lûukdòot*	e. *lûukpraay*	
'lead ball'	'shot for a shot gun'	

A natural extension of (8) e. 'shot for a shot gun' is *lûuk-ɲuun* [ball-gun] 'bullet/cartridge/shell'. However, the object 'bullet' no longer retains spheric round-like shape found in lead balls and gun shot. It deviates to a cylindrical shape. Other cylindrical things include *lûuk-ránâat* [ball-chime] chimes similar to a xylophone, and various elongated, rattan

fish traps, *lôɔp.* For these cylindrical examples the category has deviated to a long cylindrical shape.

Another extension from ball-like shape includes the examples found in (9).

(9)

a. *rábɘ̀ɘt*	b. *lommarasŭm*	c. *khlɯ̂ɯnthalee*
'explosion'	'monsoon'	'ocean wave'

Made up of scattered matter, swirling weather and water particles instead of solid substance, the examples (9) a – c, 'explosion', 'monsoon' and 'ocean wave' reflect a semantic link to a more general compact, globular visage, deviating only in constitution. Finally, this more generalized concept of *lŭuk* extends distinctly to a terminal set of objects in this category chain shown in (10).

(10)

a. *klɔ̀ŋ*	b. *kràsɔ̀ɔp*	c. *laŋ*
'box'	'sack'	'crate'

The objects in (10) a – c, ' box', 'sack' and 'crate' deviate from the spheric, round shape but retain the more generalized compact, globular concept that also motivates 'explosion', 'monsoon' and 'ocean wave'.

The categories, *bay* and *lŭuk*, therefore reflect a complex semantic category that motivates a coherent lexical structure within the grammar of Thai.

2.3. The role of schematic networks

Langacker (1987: 373) proposes a category structure where a prototype and variant together necessitate a schema. This structure is adapted and shown in Figure 1.

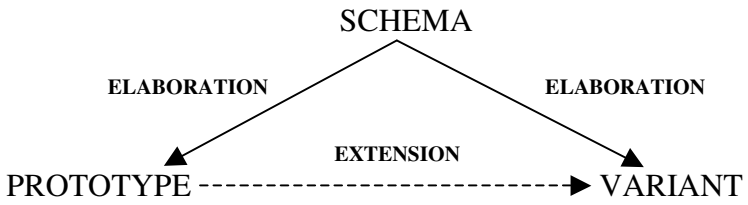

Figure 1 Category schematic from Palmer (1996: 97)

A categorizing judgement (or comparison act) exists between a prototype and its variant such that the variant is deemed similar enough to the prototype to motivate membership into the category. The schema, as a third cognitive entity, enters into this categorization judgement as the abstract representation of this perceived similarity between the members. Two relationships ensue from this schematic, extension shown with the dashed arrow and elaboration shown with the solid arrow. The prototype is related to its variant by extension, which is based on things such as the semantically motivated links discussed in section 2. The schema is related to all members of the category via elaboration, such that, the schema is filled in with the various semantic detail of any of its particular members.

A schematic network results when many individual schematics form a complex category. This is shown in regard to *bay* and *lûuk* in Figure 2.

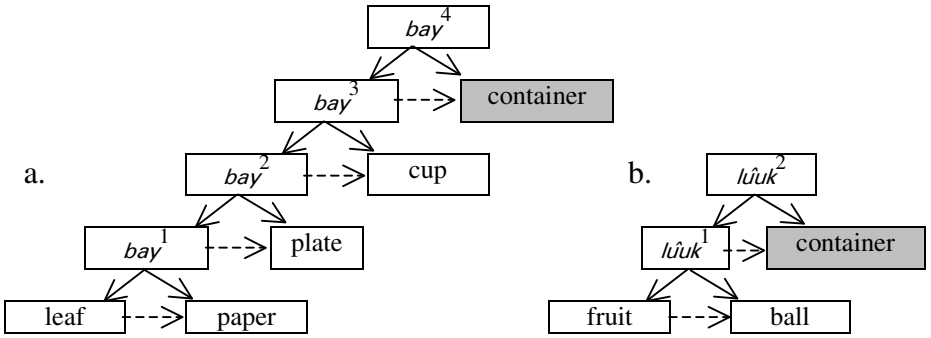

Figure 2 Schematic network of bay and lûuk

As the prototype of the category extends horizontally to include more peripheral variants the level of abstraction increases vertically to capture the semantic expansion of the category. The classifier is the schema and becomes semantically more general as the category expands to include more variation. In Figure 2 a. the schema *bay*^{1} reflects the relationship between leaf and paper as 'flat, leaf-like'. At the next level 'plate' becomes the extension of the schema *bay*^{1}, a 'flat, leaf-like' object. In order to accommodate 'plate' as a 'flat, leaf-like' object, *bay*^{2} generalizes to become 'flat, plate-like'. This generalization process continues to include *bay*^{3} 'table setting-like' and finally *bay*^{4}, 'container-like'.

For *lûuk* in Figure 2 b, the first schema is 'round, fruit-shaped'. At the next level, *lûuk* ^{2} is schematic to the 'round, fruit-shaped' schema, *lûuk* ^{1}, and its extension which is 'container'. This second level schema is generalized as 'compact, globular'. A final observation is that 'container' uses either *bay* or *lûuk* as the classifier, highlighted in Figure 2.

The schematic structure described here enables the classifier and noun to build larger grammatical constructions providing the theoretical foundation in which to describe quantification.

4. Conclusion

The Cognitive Grammar analysis proposed here reveals several important things about numeral classifiers which any theory should give account. Firstly, at the lexical level, the classifier serves as a schema in an elaborating relationship to both prototype and variant within a complex radial category. In this way, both the prototype and any variant of extension receives full sanction via the classifier.

Secondly, the classifier and noun bear a semantically marked schematic relationship. The noun must be within the subset of nouns to which a given classifier sanctions by its marked features. In other words, not just any classifier can function in a particular classifier slot. There must exist a feature-based schematic relationship such that the noun elaborates its classifier. This is an important point because it maintains at the lexical level (section 2 and 3). An analysis that is based on the sole criterion of word order for distinguishing noun and classifier cannot explain this fact.

Thirdly, the Cognitive Grammar account does not rule out the possibility of an instance of a noun functioning as a classifier for another set of nouns. The capacity for Cognitive Grammar, therefore, to specify the semantic content at any level of specificity accounts for potential polysemy (this will be discussed in Part 2 (Inglis: to appear)). Cognitive Grammar distinguishes the polysemy based on the conceptualization each participating

predication invokes. The separate accounts of *lûuk* will have equal access to the schematic network that represents the overall meaning of *lûuk* in developing their respective conceptualizations. The degree to which each occurrence of *lûuk* accesses the schematic network, also determines the degree to which polysemy is recognized for a given speaker. An account based on word order misses this generalization because it lacks inherent reference to lexical semantic content and can only recognize the two usages of *lûuk* simply as being two separate words.

Fourthly, as a limiting case of schematicity, a noun can be categorized by itself as in the repeater construction (to be presented in Part2 (Inglis: to appear)). These two occurrences within the same nominal are polysemous.

Because Cognitive Grammar views lexicon and grammar as a continuum of symbolic units, the theoretical constructs employed to account for lexical categorization here will also account for grammatical quantification (Inglis: to appear). In this way, the descriptive labor demanded by classifier phenomena is nicely accomplished with a rather economical set of conceptual constructs.

Notes

[1] The two conceptual semantic approaches of Lakoff and Langacker have been nicely summarized and integrated by Palmer (1996: 91-98).

[2] This notion of broadness might be reflected in the Thai idiom *bay nâa ïmeem* [clsf face full], which means 'a beaming face'. Here the classifier *bay* might be expressing the extended idea of 'broad' to reinforce beaming or full face. See Ukosakul (1999: 194).

[3] The examples in (7) can optionally take *lûuk* as the first member in a compound similar to *bay* in (1) above.

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