A REFLECTION OF THAI CULTURE IN THAI PLANT NAMES[1]

Unchalee Singnoi[2]

Abstract

The present study focuses on the plant naming system in the Thai language based on 1) Brent Berlin's general principles of categorization of plants and animals in traditional societies (Berlin, 1974, 1992) which suggest that it is worthwhile to think about a plant taxonomy system on the basis of plant names since the names provide the valid key to folk taxonomy and 2) Lakoff's central guiding principles of cognitive linguistics (Lakoff and Johnson, 2003 and Lakoff 1987). Data on plant names collected from printed materials are selectively analyzed. The study examines the linguistic structure, folk taxonomy and conceptualization of plant terms in the Thai language. It is found that there exists in the Thai language a complex and practical plant naming system establishing a relationship between language, cognition and culture.

Introduction

The term "plant names" in the paper refers to a particular linguistic structure people commonly use to call a variety of plant life. A common plant name may convey only the core name that can differentiate one plant from another or include other parts people add to the core to depict that particular form of plant life. The common names of plants often vary from region to region, which is why most plant encyclopedias refer to plants using their scientific names: binomials, or "Latin" names. It is not unusual that many plants to have several common names, and for many common names to refer to several distinct plants.

In the last decades, a number of research works have investigated the plant naming systems of traditional societies from biological, ecological, anthropological, linguistic, cultural and social perspectives, focusing either on the structure of naming or the categories of the identities they intend to describe. Quite a lot of literature has been written about the different levels of classification, semantic features and cultural implications of the naming system. A pioneer group of researchers dealing with the structure of plant and animal naming includes Berlin, Breedlove and Raven (1973, 1974, 1992). These papers, in which general principles of folk taxonomy were elaborated based on ethno-botanical studies in Central and South America, drew convincing parallels with the taxonomic thinking among European people, which became the basis of taxonomy in Western science. At the core of Berlin's argument is the five-level structure of the taxa or taxonomic group, called taxonomic ethnobiological categories. These smaller categories are defined in terms of certain criteria, such as having certain linguistic or taxonomic features that are recognizable. The five ethnobiological categories are as follows: unique beginner, life form, generic, specific, and varietal. Most, if not all organisms, flora or fauna, can be placed

[2] Assoc.Prof.Dr., Department of Language and Folklore, Faculty of Humanities, Naresuan University, Thailand

taxonomically into these categories. This is a specifiable and partially predictable set of plant and animal taxa that represent the smallest fundamental biological discontinuities easily recognized by any particular habitat. That is, people tend to categorize in predictable ways based on recognizable differences in the environment around them. Years later, several research papers in ethnology followed Berlin's principles as the best available system to present ethno-taxonomic data (Hiepko 2006).

As claimed in Berlin (1992), traditional taxonomic groupings of plants and plant names have been assigned in sensible patterns. Understanding the patterns provides insights into the cultural perspectives and evolutionary histories of those who developed the groupings and names. This claim is in accordance with researchers in cognitive linguistics such as Lakoff and Johnson (2003) and Lakoff (1987), who have worked on the assumption that language is the outcome of general properties of cognition and that conceptual representation is the outcome of the nature of the bodies humans have and how they interact with the geo-linguistic and socio-physical world. The experience of Thai people can explicitly demonstrate these ideas. The Thai plant naming system does share some of the features proposed by these researchers, but in the author's observation, there is more to it than that. There is a specific way in the Thai language of naming plants, and this will be discussed in detail in the following sections.

For the purpose of this paper, I focus on morpho-syntactic patterns of lexical and grammatical systems of nominal classification, categorization systems and folk conceptualization illustrated in plant names in an attempt to explicate their roles. Here, Thai plant names are generally investigated. More than 3,000 plant names were collected from a number of reliable sources such as plant encyclopedias, local-dialect dictionaries, local plant taxonomy and classification, plant collections, and other printed materials by academic institutes in all four main dialects of Thailand: North, Northeastern, Central and South. The choice of entries is richness of Thai folk terms for plants in all four main regional forms, both wild and cultivated, but excluded are:

1.) words that merely refer to a plant part; for example, *hŭa-plii* referring to banana tree flowers.

2.) words that refer to the state of a plant, for example, *nɔ̀ɔ-máay* referring to young bamboo or bamboo shoots.

Background on Class Terms, Classifiers and Class Markers in the Thai Language

One of the research aims is to investigate plant names in Thai and their linguistic role as a system of nominal classification. In general, systems of nominal classification have typically been described in terms of three sub-types: 1) lexical system (class terms and measures), 2) lexico-grammatical system (classifiers), and 3) grammatical system (noun class markers and gender). However, the terminology used to discuss nominal classification systems typologically is not consistent in the literature. In particular, quite a number of researchers tend to use the term classifier to describe both lexico-grammatical and grammatical systems of classification. For the purposes of this paper, I use the term nominal classification

as a broader cover term to mean a system through which language and its native speakers mark nouns based on categories, which would include class terms, classifiers, and class markers. Many researchers have put more focus on noun classifier systems in the last decades (see Craig 1986, and references therein). Concrete nouns are categorized according to intrinsic/generic characteristics, perceptual features, including most prominently animacy, shape, and consistency (Adams and Conklin 1973). A less well studied type of categorization is found in class terms, noun roots of a relatively general sense that occur in compounds with a categorizing function (DeLancey 1986 and Beckwith 1993). In Thai, the class term and classifier systems have been differentiated in the literature (cf. Singnoi 2008) but the noun class marker system has not.

For a brief orientation of nominal classification involving Thai plant names, it is much more convenient to begin with the syntactic scope of noun classifiers which is much more well-known. Then the other two categories are compared to see the syntactic difference. Thai is a good example of the numeral classifier languages which require the classifier morpheme in order to code the quantity of a noun (hereafter N) as many South and East Asian languages do. Thai is classified as an isolating language which exhibits a type of SVO language and the head-modifier noun phrase. The language is also well known for its elaborate classifier system. The classifiers are good examples of morphemes which differentiate entities into different classes, both generally and specifically, and manifest native speakers' cultural beliefs by noun categorization.

Synchronically, the Thai noun classifier construction[3] consists of quantifier/numeral (hereafter Q) followed by a noun classifier (hereafter CLF), forming a sequence of constituents:

(1) Q + CLF

The head noun can either precede or follow the compound constituent, as shown respectively:

(2) mǎa   sɔ̌ɔŋ   tua
   dog   two   CLF (animal/body)
   'two dogs'

(3) sɔ̌ɔŋ   kon   phǔa   mia
   two   CLF(human)   husband   wife
   'two people, a husband and wife'

However, the second compound constituent is limited to a combination of human head nouns with a certain relationship such as spouse (e.g., husband and wife, grandfather and grandmother) and kinship (e.g., father and son/daughter, mother and son/daughter, older brother/sister and younger brother/sister) while it is prohibited to non-human (Singnoi 2000).

Apart from classifiers, Thai presents another type of classification called class terms (CLT), as proposed by Delancey (1986) in his study of Thai classifiers with reference to the work of Haas in 1942. Class terms do not function as true classifiers. They classify nouns by co-occurring with the classified nouns in a large number of compound words (Singnoi 2005 and 2008). The study of Thai

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[3] For details of the project Classifier Construction in Thai, see Singnoi (2008), which also includes its semantic and pragmatic aspects.

nominal compounding by Singnoi (2005) reveals that lexicalized compound nouns in the pattern noun-noun, like *fayfâa* (fire-sky) 'electricity', *lǔuk-nâam* (offspring-water) 'mosquito baby' and so forth, allow class terms to act as the heads in the first position which semantically classify the following noun constituents in terms of features or shapes like classifiers, as shown below:

(4) kɔ̂ɔn-hǐn
    CLT (lump shape)-stone
    'a lump of stone'

(5) sên-thaaŋ
    CLT (line shape)-path
    'a route'

(6) lûuk-bɔn
    CLT (small round shape)-ball
    'a ball'

However, class nouns as such do not function like pure classifiers. Thus consider:

(7) lam-thaan
    CLT-brook
     'brook'

(8) *lam-thaan   2   lam
     CLT-brook   2   CLF

(9) lam-thaan   2   hæ̀ŋ
    CLT-brook   2   CLF for place

In the examples above, the class term *lam* generally classifies objects into the long-and-round-shaped group, but it does not always occur as the classifier of a long-and-round-shaped head noun, which *hæ̀ŋ* is a classifier for place, does. Therefore, the difference between class terms and classifiers would obviously be predicted

on the grounds that class terms occur with their classified nouns (which are their subordinate terms) in lexicalized compounds, while classifiers occur with their classified terms in other syntactic constructions, so that it is perhaps unnecessary to connect this with any significant difference in semantic function. This is in accordance with Saul (1965) who provides a description of Nung, showing the syntactic distinction of the two similar categories. That is, class terms are obligatory (indeed lexically bound) components of their compounds, while classifiers occur only under specific syntactic/semantic conditions.

In the CLT-noun compound, even though the class term head is modified by its subordinate term, it is not equivalent to what Rosch (1977) called the hypernym of the superordinate term which is a basic-level term (which is an ordinary noun) in the sense that class terms are not necessarily independent while basic-level terms are, as shown in the examples below.

(10) Class term: *lam* 'long-and-round-shaped object'

 * mii   lam   mǎy
   have long-and-round-shaped object Q
   'Is there any long-and-round-shaped object (here)?'

(11) Basic-level term: *plaa* 'fish'
     mii   plaa   mǎy
     have   fish   Q
     'Are there any fish (here)?'

The other categorization system involving Thai plant names is noun class markers. Some typical characteristics of noun class markers have been provided by works such

as Dixon (1986) and Aikhenvald (2003). They provide that noun class markers classify all the nouns in a language while class terms are lexically bound and classifiers vary in boundedness cross-linguistically[4]. Dixon (1986:106) claimed that noun class markers typically emerge as affixes, grammatical words, or clitics. They tend to denote "such core semantic characteristics as animacy, sex, and humanness".) Accordingly, Grinevald and Seifart (2004) have stated that noun class markers occupy positions on a typological continuum, reflecting a diachronic pattern of language change from class terms to noun class markers of agreement or gender. Class markers are widely studied in African languages, some of which exhibit several classes (for example, see late work in Legère 2004 illustrating 11 noun class markers in Vidunda, a Tanzanian language). In Thai, it seems that class terms and noun class markers, occurring in the positions before plant names, are extensively used to identify plant life. However, folk plant names are among rare language cases that still exhibit another grammatical category called noun class markers/gender in Thai. The examination of folk plant names, therefore, is of great benefit in understanding the conceptualization of the Thai classification system.

Linguistic Structures of Thai Plant Names

Like other languages, even though there are scientific terms such as "*Echinochloa colona*", the Thai language does have a system of its own. The linguistic system of

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[4] However, the boundedness of class terms and classifiers is still debatable. Conflicting findings on their function as independent nouns within classifying languages are discussed in Henerson (2006)

plant names in the Thai language is quite complex compared to other names such as those for people, locations, objects and so on. That is, the plant names can be mentioned in two alternative ways: plain and complex structures. The first is more typical whereas the later is specifically found.

Plain Structure

The plain structure of the nouns or noun phrases in traditional Thai is HEAD + MODIFIER, where the head optionally combines with one or more modifiers. This structure is also relevant for the plain structure of plant names:

(12) CORE + (MOD) + (MOD)

Accordingly, names consist of the core or head, which is either simple or complex (compound, nominalized, or reduplicated form), and one or two optional modifiers, whether simple or not. Here are some examples which represent various types of Thai plant names. The CORE is on the left (if there is one or two modifiers), and the two optional MODS (if both of them appear) are on the right separated by '+' from the CORE. Word constituents in a complex form are separated by '-'.

(13) Simple core:
campii
'*Magnolia x alba*'

(14) Compound core:
phǐi-sîa
butterfly (lit.: ghost-shirt)
'*Alangium chinense*"

(15) Nominalized core from a noun phrase:
mǎa-dam
dog-black
'Miliusa cuneata'

(16) Nominalized core from a clause:
Yaay-cuuŋ-lǎan
grandma-lead by the hand-grandchild
'*Myrsinaceae paniculata*'

(17) Reduplicated core:
tòt-mǔu   tòt-mǎa
fart-pig   fart-dog
pig's fart dog's fart
'*P.linearis*'

(18) Simple core + a simple modifier:
yɔɔ   +   pàa
Morinda citrifolia   forest
'*Morinda tomentosa*'

(19) Simple core + a complex modifier:
salǎw   +   [plɨak +baaŋ]
Lagerstroemia tomentosa bark   thin
Lagerstroemia tomentosa thin bark
'*Lagerstroemia venusta*'

(20) Simple core + two simple modifiers:
kɔɔ   +   mǔu   +   dɔɔy
Castanopsis pig   hill
'*Castanopsis calathiformis*'

Complex Structure

However, people often call plants in a more complex way, attaching one or more class terms and class markers to the left of the core. In the first position, the generic class term (GNCLT) *tôn* 'plant stalk' could be attached to plant names, similar to certain English plant names such as *cotton wood*, *banana tree*, *China box tree*, *rain tree*, and so on. It applies to any kind of plants whether they are trees, shrubs, creepers, or bulbous plants. Even though Thai has the higher class term *phɨɨt* 'plant' for all kinds of plants, it is *tôn* that functions to identify the plant kingdom. Below is an example of this case:

(21) GNCLT   +   CORE
<u>tôn</u>   campii
stalk   *Magnolia x alba*
'*Magnolia x alba*'

People can also classify plants from the perception of plant parts that are salient or useful to them, resulting in another slot of class terms called plant part class terms (PPCLT) in this research, as shown below:

(22) PPCLT   +   CORE
dɔɔk   bua
flower   lotus
'lotus'

Both the GNCLT and PPCLT can occur simultaneously. When they do, the GNCLT *tôn* leads the PPCLT as shown below:

(23) GNCLT   + PPCLT   + CORE
tôn   dɔɔk   baan-yen
stalk   flower   marvel-of-Peru
'marvel-of-Peru'

However, the co-occurrence of the GNCLT and PPCLT is not typical. While example (23) is fine, it is not acceptable for the plant name in example (22) to convey the GNCLT. Also, it is not necessary for all Thai people to agree that the GNCLT can lead certain plant cores especially plants without stalks or bulbous plants, as shown:

(24) ? tôn   hǔa   hæ̂w
stalk   bulb   water chestnut
'water chestnut'

Another class term slot found in this research is functional class terms (FCLT), which reveal the roles that plants have or the purposes for which they are used. Their appearance results in an additional

slot to the right of the former types in the plant name structure as exemplified below:

(25) GNCLT + FCLT + CORE
    tôn   máay   pɨay
    stalk   wood   necked
    '*Lagerstroemia cochinchinensis*'

(Another Thai name is *tôn tabæ̀æk*, a kind of tree which has a necked stalk, big leaves and purple flowers)

(26) PPCLT + FCLT + CORE
    kɨa   phàk   kɛ̂æp
    vine   vegetable   Kap
'*Melothria heterphylla; Coccinia indica*'
(Another Thai name is *tamlɨŋ* , a kind of vine which is viewed as vegetable and herb)

Beside the three CLTs, there are two bound morpheme types functioning as class markers in the slots following the CLTs. The first type immediately following the FCLT is *má?-* 'fruit' for plants that have fruit, and therefore the fruit class marker (FRCLM) in this paper. Examples are shown below:

(27) FCLT + FRCLM + CORE
    phàk   má?   hɔ̀ɔy
    vegetable fruit   *Momordica-*
                          charantia linn.
    '*Momordica charantia linn*
    (bitter melon small)'

The other class marker type includes a number of morphemes marking for gender, thus gender class marker (GDCLM). This class marker type follows the FRCLM or prefixes immediately to the core, as exemplified below:

(28) FRCLM + GDCLM + CORE
    má?   ?ii   hum
    Fruit   FEMALE   *Moringa-*
                          oleifera
'*Moringa oleifera* (hourse-radish tree)'

(29)   bàk   khôok
                  MALE   *Siphonodon-*
                             celastrineus
                  '*Siphonodon celastrineus*'

(30)   naaŋ   lák
                  FEMALE   *Ocimum-*
                             citriodourum
                  '*Ocimum citriodourum*
   (hoary basil)'

The co-occurrence of class terms and class markers is possible as can be seen in some of the examples above. A plant name can optionally convey either up to three class term slots or two class marker slots. It is also possible that both class terms and class markers, though not all, can appear simultaneously in the same plant names. An example is provided in (31) for the first case. The second case can be seen in (28) which is repeated in (32) for the sake of convenience. The last case can be seen in (27), and more examples can be shown in (33) below.

(31) GNCLT+PPCLT+FCLT+CORE+MOD1
    tôn   hǔa   phàk   kàat   khǎaw
    stalk bulb vegetable Kat   white
    'turnip'

(32) FRCLM + GDCLM + CORE
    má?   ?ii   hum
    fruit   FEMALE   Hum
'*Moringa oleifera* (drumstrick tree)'

(33) FCLT + GDCLM + CORE
     phàk   ʔii   lə̂t
     vegetable FEMALE   Lert
     'Piper sarmentosum'

The discussion so far has portrayed the complex structure of Thai plant names. A schematic representation of the complex structure of plant names is as follows:
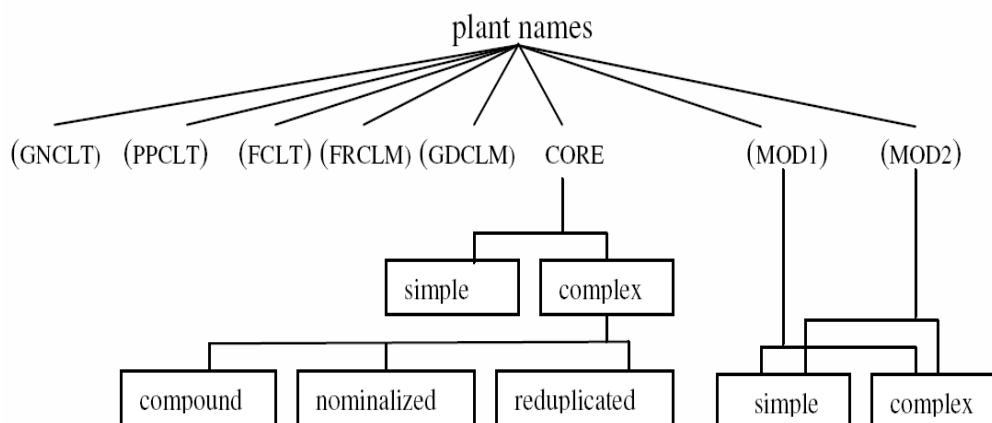
The diagram above that a plant name can appear as the potential CORE solely, which is in either a simple or complex fashion portraying compound, nominalized, or reduplicated form (as exemplified in (14), (15), and (17) above). A core can be modified by one (MOD1) or two modifiers (MOD1 and MOD2), which are whether simple or complex. In addition, a plant name may optionally convey one or more class slots such as class terms (GNCLT, PPCLT and FCLT) and class markers (FRCLM and GDCLM).

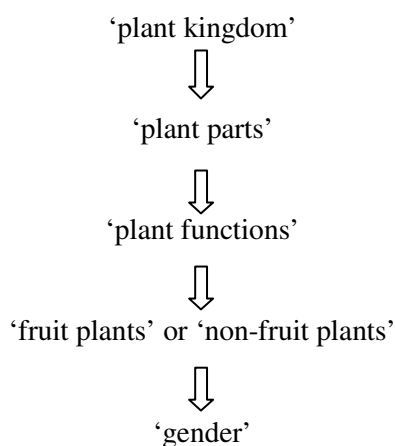## Categorization and the Folk Bio-Taxonomic System of Thai Plant Names

Categorization may be based on scientific or scholarly methods and principles or they may be based on social and cultural transmission.[5] Folk taxonomies exist to allow popular identification of classes of objects, and apply to all areas of human activity. All parts of the world have their own systems of naming local plants and animals. These naming systems are a vital aid to survival and include information such as the fruiting patterns of trees and the habits of large mammals. These localized naming systems are folk taxonomies. Folk taxonomies are

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[5] For the latter, a piece of evidence can be seen in DeLancey (1998) that the categorization in Tibetan honorific nouns is social and cultural rather than perceptual.

generated from social and cultural knowledge that is embedded in the cognition. They are distinguished from scientific taxonomies that claim to be dis-embedded from social relations and thus objective and universal. For the sake of plant nomenclature, it is urged that scientific names facilitate communication about plants; common/folk names confuse communication. On the other hand, common names have no standardization at all and vary from person to person, region to region, and country to country.

The Thai folk plant taxa are of several distinguishable types, the so-called ethno-botanical ranks. The linguistic consideration above reveals five ranks of the Thai ethno-botanical system, as illustrated in the following figure.

'plant kingdom'

⇩

'plant parts'

⇩

'plant functions'

⇩

'fruit plants' or 'non-fruit plants'

⇩

'gender'

Plant Kingdom Rank

Similar to English, this rank is named *phɨ̂ɨt* 'plant'. Thai people can rapidly distinguish plants from animals. Unlike English and some other folk plant classifications; e.g., Eipo[6] plant classification (Hiepko 2006), the

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[6] Eipo are a small group of people living in several villages in Eipomek valley in the Central Highlands of Irian Jaya. (Hiepko 2006)

rank includes fungi, defined in the Standard Thai Dictionary (Royal Academy of Thailand 1999) as a kind of mushroom or plant that has no chlorophyll, root, stalk, or leaves. However, the term *phɨ̂ɨt* never appears in plant names. It is the other competitive term tôn 'plant stalk', the most important part of most plants, that metonymically functions as the highest term in the classification.

Plant Part Rank

Thai people distinguish several taxa via salient plant parts and plant parts that are useful to them. It is found that the parts, at least, include blossom (*dɔ̀ɔk*), leaf (*bay*), fruit (*lûuk, nǔay*), pod (*fák*), branch (*kâan*), stem (*kìŋ*), lower stalk (*kòk, khoon*, tɔɔ), vine (*khrɨa, thǎw/thǎwwan, yâan*), tuber (*hǔa*), bulb (*nɔ̀ɔ*), thorn (*nǎam, sîan*), spike (*ruaŋ, raaŋ*), and hair (*phǒm, khǒn*). A list of examples is shown in the structure plant part-core names below:

(34) dɔ̀ɔk-din
       (blossom-*Burmannia coelestis*)
(35) bay-châaphluu
       (leaf-*Piper sarmentosum*)
(36) lûuk-yɔɔ
       (fruit-*Morinda citrofolia*)
(37) fàk-phráa
       (pod-*Canavalia gladiata*/ sword-bean)
(38) kâan-khɔ̌ɔŋ
       (branch-*Millingtonia hortensis*)
(39) kìŋ-hǎay
        (stem-*Crotalaria labunifolial*)
(40) khoon-samɔ̌ɔ
       (lower-part stalk-*Vitex pinnata*)
(41) khrɨa-khǎwhɔ̂ɔ
       (vine-*Tinospora cordifolia*)
(42) hǔa-krathiam
       (buber-*Allium sativum*/ garlic)

(43) nɔ̌ɔ-krathɨɨ

    (bulb-*Aingiber zerumbet*)

(44) nǎam-ŋáp

    (thorn-*Minosa pudica*)

(45) ruaŋ-say

    (spike-*Buchanania siamensis*)

(46) phǒm-yɔ́ʔ

    (hair-*Nephlium lappaceum*/ rambutan)

Functional Rank

Thai people sometimes further classify plants from the perspective of plant function, i.e., plant roles or the purposes for which they are used. Plants are subdivided into a number of subclasses revealing the ways people use plants such as edible plants (*phàk* 'vegetable'), main food (*khâaw* 'rice'), building materials (*máay* 'wood'), medicinal plants (*wâan, phlay* 'herb), sacred plants (*phayaa, khǔn, mahǎa* 'human honorific titles'), and useless plants (*yâa* 'grass'). A list of examples is shown in the structure plant function-core names below:

(47) phàk-chii

    (vegetable-*Coriandrum sativum*)

(48) khâaw-phôot (rice-corn)

(49) máay-dæ�æŋ

    (wood-*Wylia kerrii*/ ironwood)

(50) wâan-hǎaŋcɔɔrakhêe

    (herb-*Atoe indica*)

(51) phayaa-máʔkhǎampɔ̂ɔm

  (honorific title-*Dacrycarpus imbricatus*)

(52) yâa-phrɛ̂ɛk

    (grass-*Cynodon dactylon*)

Fruit Plant Rank

Thai people obviously categorize fruit plants from other plants by marking those plant names with the prefix *máʔ-*. There is evidence that the morpheme *máʔ-* has diachronically gone through some phonological and semantic changes from the PPCLT *màak* 'fruit' with the lose of the final consonant /-k/ to a prefix to the core of plant names. For instance, *máʔkhǎam* (tamarind), a kind of fruit in the Central Thai dialect, is called *màakkhǎam* in other Thai dialects such as the Northern and Northeastern Thai dialects. Furthermore, its semantic content has been bleached or faded over time, and thus it is not necessary to refer to only fruit. Rather, the co-occurrence refers to all fruit plants including certain plants that do not have (edible) fruit, like *máʔ-khâa* '*Afzelia xylocarpa*'.

Gender Rank

Similar to humans, plants are also categorized into different sexes: male and female. Some of them also present a Thai dialect factor. The gender markers include *ʔii-* 'female', *naaŋ-* 'female', *bàk-/bàʔ-* 'male (Northeastern Thai dialect), and *baŋ-* 'male' (Southern Thai dialect).

53) ʔii-krathɨɨ

    (female-*Aingiber zerumbet*)

(54) naaŋ-lák

    (naaŋ-*Ocimum basilicum*

(55) bàk-phílaa

(male/Northeastern Thai-*Punica granatum*)

(56) baŋ-kràʔ

(male/SouthernThai-*Elateriospermum tapos*)

Folk Conceptualization of Thai Plant names

Thai conceptualizations of plants as manifested in plant names afford a good deal of subtlety in their semantic structure. The nomenclatural situation is somewhat complex due to extensive uses of imaginative language expressions from

people's experiences. In this respect, it is the core and modifiers which are candidates to exhibit the folk conceptualizations of the world around them. The nomenclatural situation is somewhat complicated due to local extensive and taboo systems responsible for a multiple naming of many plants. For instance, there are a number of local extensive names for an odoratum (or Bitter bush, Siam weed) called *sàapsǐa* (tiger smell) and a taboo name for a kind of egg plant called *khǐa-yaaw* 'aubergine long green'. Only the more common names *sàapsǐa* and *maʔ- khǐa-yaaw* can be used for a comparison with other systems. However, the synonymous local names are also of interest because they are linguistically analyzable and reveal some folk conceptualizations of plants, as illustrated below.

Some of the descriptive names for *sàapsǐa* 'tiger smell' are:

(57)   hǔusǐa   'tiger ears'
(58)   hǔasǐa   'tiger head'
(59)   sǐamɔ̀ɔp   'tiger lying prostrate'
(60)   khǐilɔ̂ɔ   'mule dung'

(th.wikipedia.org)

A more descriptive names for *maʔ- khǐa-yaaw* 'aubergine long green' is:

(61) (máʔ-)khǐa-hǎmmá 'horse penis'

(www.vegetweb.com)

The following table illustrates the percentage of meaning categories of the core (1,890 names) and the modifier parts (1,350 words). In fact, it is the modifiers that relatively reveal what people think when they are talking about plants since they display more imaginative uses than the cores.

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Table 1. Meaning Categories of the Core and Modifiers and Percentage of Occurrence

Core		Modifier	
Meaning categories	**Percentage**	**Meaning categories**	**Percentage**
Proper names	63	Metonymical uses	61
Metaphorical uses	27	Metaphorical uses	24
Metonymical uses	10	Proper names	15
	100		100

While 63 % of the cores display proper names, for example, *tabæ̀æk* 'Lagerstroemia cochinchinensis', *salǎw* 'Lagerstroemia tomentosa', *wâa* 'Syzygium cumini', …etc., only 15% of the modifiers are found as proper uses, for example, *tææŋ-kwaa* 'cucumber', *sôm-ʔoo* 'Citrus grandis (pomelo)', *buŋǎa-lamcìak* 'Goniothalamus tapis', …etc. 85 % of modifiers display imaginative uses: 61% are metonymical uses and 24% are metaphorical uses (as exemplified in (62) and (63) below), while 37% of the cores display imaginative uses: 27% are metaphorical and 10% are metonymical. These differences are discussed in the following sections.

Plant Name Cores

It is found that at least 37 % of the core names display imaginatively used words in the metaphorical (c.27 %) and metonymical types (c.10 %). Other names (c. 63 %) are proper names which are usually monomial and linguistically not analyzable synchronically. Below are examples of plant names which obviously illustrate the two types of imaginative categories.

62)   Metaphorical name:
      tôn + nom-ŋua
      tree   cow's breast
      'Coniothalamus laoticus'

pirun.ku.ac.th/~b5008077

(63)   Metonymical name:
      tôn + yaaŋ
      tree   resin
      'Dipterocarpus (rubber tree)'

Takuyak.com

The metaphorical names pertain to several source domains plants are attributed to. It is found that the source domains would be categorized as human/ human parts, animal/ animal parts, other plants, nature, places, beliefs, auspicious/ propitious things, objects and excrement. Among the core names, it is the animal or animal part domain that the majority of plant cores are found pertaining to. The human/ human part domain is in the second rank which is not far more than the third rank, object domain, and the fourth rank, auspicious/ propitious things. Excrement, nature, and other plant domains are less imaginative than the former ones but more imaginative than the god/ghost and place domains, as shown in table 2 below:

Table 2. Categories of Metaphorical Source Domains of the Core and Percentage of Occurrence

Categories of source domains	Percentage
Animals/animal parts	38
Humans/human parts	16
Objects	13
Auspicious/ Propitious things	11
Excrement	8
Nature	7
Other plants	4
Gods/ghosts	2
Places	1
Total	**100**

Below is a selection of plant cores which are obviously derived from other word categories (displayed on the right).

(64) tiin-pèt   animal part
     feet-duck
     'Alstonia scholaris'

(65) faràŋ   human
     foreigner/westerner
     'Psisium guajava (Guava)'

(66) krabɔɔŋ-phét   object
     club-diamond
     'Cereus hexagonus (Cactus)'

(67) hǔa-wǽæn   propitious things
     head/top-ring
     'Decaspermum parviflorum'

(68) khîi-nɔ̌ɔn   excrement
     dung-worm
     'Schoepfia fragrans'

(69) can-thɔɔŋ   nature
     moon-gold
     'Fraxinus floribunda'

(70) khâaw-sǎan   other plant
     rice-milled
     'Phyllanthus columnaris'

(71) thêep-tharoo   god
     god-Taro
     'Cinnamomum porrectum'

(72) pàacháa-mɔ̌ɔŋ   place
     graveyard-gloomy
     'Suregada multiflorum'

Besides depicting plants via other things discussed above, people metonymically view and then call plants according to their salient characteristics such as their appearances like shape, color, smell, surface, tissue, tastes, and amount, behavior/action, parts, usefulness/uselessness, sources, times, and possession, as shown in Table 3 with estimated percentages.

Table 3. Categories of Metonymical Salient Characteristics of the Core and Percentage of Occurrence

Categories of salient characteristics	Percentage
Appearance	36
Shape	(24)
Color	(14)
Smell	(14)
Surface	(6)
Tissue	(5)
Taste	(4)
Amount	(3)
Behavior/action	26
Parts	19
Usefulness/ uselessness	13
Sources	3
Times	2
Possession	1
Total	**100**

Below is a selection of plant cores which are metonymic:

(73) bɔ̂ŋ-khwǎan   shape
     bamboo section shape-axe
     '*Syzygium diospyrifolium*'

(74) dæǽŋ-sôm   color
      red-orange
      '*Schoutenia ovata*'

(75) hɔ̌ɔm-dæǽŋ   smell
      good smell-red
      '*Eleutherine palmifolia* (red onion)'

(76) nuan   surface
      creamy complexioned
      '*Garcinia merguensis*'

(77) chûm-chàm   tissue
     Moist
     '*Acronychia pedunculata*'

(78) (phàk)-wǎan   taste
     vegetable-sweet
     '*Sauropus albicans*'

(79) sǎam-sìp   amount
     three-ten
     '*Asparagus racemosus*'

(80) tĭttɔ̌ɔ   behavior/action
     Connect
     '*Dasymaschalon lomentaceum*'

(81) (phàk)-nǎam   part
     (vegetable)-thorn
     '*Asparagus racemosus*'

(82) yaa-sùp   usefulness
     drug-smoke
     '*Nicotiapa tabacum* (tobacco)'

(83) (màak)-bòk   source
     fruit-land
     '*Irvingia malayana*'

(84) sǎam-phan-pii   time
     three-thousand-year
     '*Dacrydium elatum*'

(85) faràŋ   possession
     foreigner
     '*Psisium guajava* (guava)'

Plant Name Modifiers

Statistically different from the core part, a vast majority (85 percent) of modifiers display imaginative words: 61 percent are metonymic and 24 percent are metaphorical, leaving a small number (c.15) appearing as proper names.

The metonymic modifiers depict salient characteristics such as appearance like color, size, shape, smell, taste, tissue, surface, and amount; locations/sources; parts; procession; behaviors; postures; patterns; usefulness; effects; gender; weight; stage; age; and truth. The percentage of occurrence is provided in the following table.

Table 4. Categories of Metonymical Salient Characteristics of the Modifiers and Percentage of Occurrence

Categories of salient characteristics	Percentage
Appearance	36.60
Color	(15)
Size	(7)
Shape	(6)
Smell	(3)
Taste	(3)
Tissue	(2)
Surface	(2)
Amount	(.60)
Location/sources	26
Parts	16
Possession	11
Behaviors/actions	3
Postures	1
Patterns	1
Usefulness	1
Gender	.80
Weight	.80
Stage	.80
Age	.50
Reality	.50
Total	**100**

A selection of plant modifiers which are metonymic is provided below:

(86) tabɛ̀æk + dæǣŋ color
   Lagerstroemia + red
   '*Lagerstroemia calyculata*'

(87) campii + nóy size
   Michelia + small
   '*Michelia floribunda*'

(88) máʔkhǎam + pɔ̂m shape
   Phyllanthus emblica + oblate
   '*Phyllanthus emblica*'

(89) khěm + hɔ̌ɔm smell
   Ixoro finlaysoniana + good smell
   '*Ixoro finlaysoniana*'

(90) máʔ-khɨa + khǒm taste
   Solanum(egg plant)+ bitter
   '*Solanum indicum*'

(91) yaaŋ + khǽŋ tissue
   Dipterocarpus + hard
   '*Dipterocarpus retusus*'

(92) sôm + klìaŋ surface
   orange + glossy
   '*Citrus aurantium*'

(93) phrâaw + phan-lam amount
   Dracaena lourieri + thousand-CLF
   '*Dracaena lourieri*'

(94) khîilèk + pàa location
   Cassia + forest
   '*Cassia garrettiana*'

(95) khamîn + tôn plant part
   Mohonia siamensis + stalk
   '*Mohonia siamensis*'

(96) khîilèk + lǔaŋ possession
   Cassia + royal
   '*Cassia siamea*'

(97) phrík + chíi-fáa   behavior
    Chili + point-sky (point to the sky)
    '*Capsicum frutescens* (red)'

(98) khææ   +   bĭt posture
    Fernandoa adenophylla+ twist
    '*Fernandoa adenophylla*'

(99) kɛ̂æw   +   laay pattern
    Murraya paniculata +   variegated
    '*Murraya paniculata*'

(100) hĭaŋ   +   náam-man usefulness
    Dipterocarpus intricatus+ oil
    '*Dipterocarpus intricatus*'

(101) hák   +   phûu gender
    Buchanania lanzan + male
    '*Buchanania lanzan*'

(102) tææŋ   +   baw   weight
     melon   +   light
     'pickling cucumber'

(103) phrík   +   sòt   stage
     chili   +   young
     '*Capsicum frutescens* (green)'

(104) kulàap   +   phan-pii   age
     rose   +   thousand-year
     '*Rhododendron arborea*'

(105) tææŋ   +   ciŋ   reality
     melon   +   real
     '*Cucumis melo* (musk melon)'

Similar to those of the core, the source domains include animals/animal parts, humans/human parts, other plants, natural items, beliefs, auspicious/ propitious things, objects and excrement. It is animals or animal parts that are mostly involved in the plant nomenclature. Other plants come second, followed closely by the other

categories. The percentages of such imaginative modifiers are ranked in the following table.

Table 5. Categories of Metaphorical Source Domains of the Modifiers and Percentage of Occurrence

Categories of source domains	Percentage
Animals/animal parts	46
Other plants	15
Auspicious/ Propitious things	9
Objects	8
Excrement	7
Natural items	7
Humans/human parts	5
Gods/ghosts	3
Total	**100**

A selection of modifiers that are used metaphorically is provided below:

(106) klûay   + khâaŋ   animal
     banana   + long tailed monkey
     '*Orophea*'

(107) ɗɨa   + wâa   another plant
     Ficus + *Syzygium cumini*
     '*Ficus auriclata*'

(108) mìat   + ɕii   propitious thing
    Memecylon scutellatum + diamond locket
     '*Memecylon scutellatum*'

(109) tææŋ   + mɔ̌ɔn   object
     melon   + pillow
     '*Citrullus vulgaris* (water melon)'

(110) wâa   + khîi-kwaaŋ   excrement
     Syzygium + deer dung
     '*Syzygium fruticosum*'

(111) sôm   + lom   natural items
     orange + wind

'*Aganonerion polymorphum*'
(112) mìat + khon + tua-phûu   human
Helicia nilagirica + human + male
'*Helicia nilagirica*'

(113) kradum   + phǐi   ghost
Clochidion rubrum + ghost
'*Clochidion rubrum*'

Conclusion

The paper illustrates the complex structure of plant names in Thai, the linguistic aspect that reveals the Thai folk plant taxa and conceptualization about plant life. Thai plant names reflect a primarily functional categorization centered upon the human person and the world of human experience. The plant taxa, on the other hand, are of several distinguishable ethnobiological ranks: plant kingdom, salient parts, functional plants, fruit plants, and gender. The plant kingdom is represented by a generic class term at the leading slot of the plant name structure. Under it is the salient part rank from the perception of plant parts that are salient or useful to people. Plants are also further categorized by their functions to humans such as food plants, medicinal plants, material plants, and even useless plants. Fruit plants are ranked when they provide fruit for human consumption. Gender is also marked for certain plants as well as humans.

Thai people's conceptualizations of plants as manifested in plant names afford a good deal of subtlety in their semantic structure. The nomenclatural situation is somewhat complicated due to the extensive use of imaginative language expressions. In this respect, it is the core and modifiers which are candidates to exhibit the folk conceptualizations of the world around them. In fact, it is the modifiers that relatively reveal what people think when they are talking about plants since they display more imaginative uses than the cores. The metonymically used words depict salient characteristics such as appearance like color, size, shape, smell, taste, tissue, surface, and amount; locations/sources; parts; possession; behavior; posture; pattern; usefulness; effects; gender; weight; stage; age; and truth. Modifiers etaphorically used demonstrate several source domains including animals/animal parts, humans/human parts, other plants, natural items, beliefs, auspicious/ propitious things, objects and excrement. It is animals or animal parts that mostly are involved in plant nomenclature.

Finally, the analysis of data accumulated in the plant project for Thai is an ongoing process. Much more remains to be done in order to adequately appreciate the complex nature of plant names in this language. There is a rich historical heritage encapsulated in the plant names and a knowledge about plants and their uses that is unfortunately being increasingly forgotten today. It is also worth working on a comparison of the folk ethnotaxonomic system with the scientific botanical classification to bring to light how highly Thai people developed the ability to recognize relationships among plants or, in the other words, similarities and discontinuities in nature.

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