A REFLECTION OF THAI CULTURE IN THAI PLANT NAMES¹

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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 ethnobotanical 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

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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 (Hiepkö 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, *hǔa-plii* referring to banana tree flowers.
- 2.) words that refer to the state of a plant, for example, *nǎo-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 construction³ 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 sǎw tua

dog two CLF (animal/body)
'two dogs'

(3) sǎw 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

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

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-linguistically⁴. 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

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:

phǎi-sǎa
butterfly (lit.: ghost-shirt)
‘*Alangium chinense*’

(15) Nominalized core from a noun

phrase:
mǎa-dam
dog-black
‘*Miliusa cuneata*’

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)

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

- (17) Reduplicated core:
tòt-mũu tòt-măa
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:
salăw + [pɦak +baaŋ]
Lagerstroemia tomentosa bark thin
Lagerstroemia tomentosa thin bark
'*Lagerstroemia venusta*'

- (20) Simple core + two simple modifiers:
kòɔ + mũu + 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 *phîtt* '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
tôn 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
dòɔk 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 dòɔk 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 hũa hêw
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 p̄ay
 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
 k̄ia ph̄ak k̄æ̀æp
 vine vegetable Kap
 ‘*Melothria heterophylla*; *Coccinia indica*’
 (Another Thai name is *taml̄ɨ̄*, 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 *máʔ* ‘fruit’ for plants that have fruit, and therefore the fruit class marker (FRCLM) in this paper. Examples are shown below:

- (27) FCLT + FRCLM + CORE
 ph̄ak máʔ h̄òy
 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
 máʔ ʔii hum
 Fruit FEMALE *Moringa-*
oleifera
 ‘*Moringa oleifera* (hourse-radish tree)’
- (29) bàk khòk
 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 h̄ua ph̄ak k̄aat kh̄aw
 stalk bulb vegetable Kat white
 ‘turnip’
- (32) FRCLM + GDCLM + CORE
 máʔ ʔii hum
 fruit FEMALE Hum
 ‘*Moringa oleifera* (drumstrick tree)’

- (33) FCLT + GDCLM + CORE
 phàk ?ii lât
 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

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 Rank

Similar to English, this rank is named *phâ#* 'plant'. Thai people can rapidly distinguish plants from animals. Unlike English and some other folk plant classifications; e.g., Eipo⁶ plant classification (Hiepko 2006), the

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 *phât* 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 (*dòk*), leaf (*bay*), fruit (*lûuk*, *nûay*), pod (*fâk*), branch (*kâan*), stem (*kîŋ*), lower stalk (*kòk*, *khoon*, *tò*), vine (*khria*, *thăw/thăwwan*, *yâan*), tuber (*hûa*), bulb (*nò*), thorn (*năam*, *sân*), spike (*ruaŋ*, *raaŋ*), and hair (*phôm*, *khôn*). A list of examples is shown in the structure plant part-core names below:

- (34) *dòk-din*
(blossom-*Burmannia coelestis*)
- (35) *bay-châaphluu*
(leaf-*Piper sarmentosum*)
- (36) *lûuk-yò*
(fruit-*Morinda citrifolia*)
- (37) *fâk-phráa*
(pod-*Canavalia gladiata*/ sword-bean)
- (38) *kâan-khǒŋ*
(branch-*Millingtonia hortensis*)
- (39) *kîŋ-hăay*
(stem-*Crotalaria labunifolia*)
- (40) *khoon-samò*
(lower-part stalk-*Vitex pinnata*)
- (41) *khria-khăwhò*
(vine-*Tinospora cordifolia*)
- (42) *hûa-krathiam*
(buber-*Allium sativum*/ garlic)

- (43) nòc-krathḥ
(bulb-*Alingiber zerumbet*)
- (44) nām-ṭáp
(thorn-*Minosa pudica*)
- (45) ruāṇ-say
(spike-*Buchanania siamensis*)
- (46) phôm-yóʔ
(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 (*phāk* 'vegetable'), main food (*khâaw* 'rice'), building materials (*māy* 'wood'), medicinal plants (*wâan*, *phlay* 'herb'), sacred plants (*phayaa*, *khũn*, *mahāa* 'human honorific titles'), and useless plants (*yāa* 'grass'). A list of examples is shown in the structure plant function-core names below:

- (47) phāk-chii
(vegetable-*Coriandrum sativum*)
- (48) khâaw-phôot (rice-corn)
- (49) māy-dææṇ
(wood-*Wylia kerrii*/ ironwood)
- (50) wâan-hāaṇcōōrakhêe
(herb-*Atoe indica*)
- (51) phayaa-máʔkhāampōm
(honorific title-*Dacrycarpus imbricatus*)
- (52) yāa-phrææk
(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 *māk* 'fruit' with the lose of the final consonant /-k/ to a prefix to the core of plant names. For instance, *máʔkhāam* (tamarind), a kind of fruit in the Central Thai dialect, is called *mākkhāam* 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 *máʔkhāa* '*Azelia 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', *naaṇ*- 'female', *bāk*-/bāʔ- 'male' (Northeastern Thai dialect), and *baṇ*- 'male' (Southern Thai dialect).

- 53) ʔii-krathḥ
(female-*Alingiber zerumbet*)
- (54) naaṇ-lák
(naaṇ-*Ocimum basilicum*)
- (55) bāk-phílaa
(male/Northeastern Thai-*Punica granatum*)
- (56) baṇ-kràʔ
(male/Southern Thai-*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 *sàapsǎa* (tiger smell) and a taboo name for a kind of egg plant called *khǎa-yaaw* 'aubergine long green'. Only the more common names *sàapsǎa* and *má?-khǎa-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 *sàapsǎa* 'tiger smell' are:

- (57) hǔusǎa 'tiger ears'
- (58) hǔasǎa 'tiger head'
- (59) sǎamðǎp 'tiger lying prostrate'
- (60) khǐilǎo 'mule dung'

(th.wikipedia.org)

A more descriptive names for *má?-khǎa-yaaw* 'aubergine long green' is:

- (61) (má?)-khǎa-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.

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, *tabææk* ‘*Lagerstroemia cochinchinensis*’, *salăw* ‘*Lagerstroemia tomentosa*’, *wâa* ‘*Syzygium cumini*’, ...etc., only 15% of the modifiers are found as proper uses, for example, *tææŋ-kwaa* ‘cucumber’, *sôm-ŋoo* ‘*Citrus grandis* (pomelo)’, *buŋăa-lamciak* ‘*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/western
 ‘*Psidium guajava* (Guava)’
- (66) krabɔɔŋ-phét object
 club-diamond
 ‘*Cereus hexagonus* (Cactus)’
- (67) hǔa-wǎæn propitious things
 head/top-ring
 ‘*Decaspermum parviflorum*’
- (68) khǐi-nǎɔn excrement
 dung-worm
 ‘*Schoepfia fragrans*’
- (69) can-thɔɔŋ nature
 moon-gold
 ‘*Fraxinus floribunda*’
- (70) khâaw-sǎan other plant
 rice-milled
 ‘*Phyllanthus columnaris*’
- (71) thêp-tharoo god
 god-Taro
 ‘*Cinnamomum porrectum*’
- (72) pàacháa-mǎɔŋ 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) bôn-khwăan shape
bamboo section shape-axe
'*Syzygium diospyrifolium*'
- (74) dææŋ-sôm color
red-orange
'*Schoutenia ovata*'
- (75) hõm-dææŋ smell
good smell-red
'*Eleutherine palmifolia* (red onion)'
- (76) nuan surface
creamy complexioned
'*Garcinia merguensis*'

- (77) chûm-châm tissue
Moist
'*Acronychia pedunculata*'
- (78) (phàk)-wăan taste
vegetable-sweet
'*Sauropus albicans*'
- (79) sãam-síp amount
three-ten
'*Asparagus racemosus*'
- (80) tittò behavior/action
Connect
'*Dasymaschalon lomentaceum*'
- (81) (phàk)-năam part
(vegetable)-thorn
'*Asparagus racemosus*'
- (82) yaa-sùp usefulness
drug-smoke
'*Nicotiana glauca* (tobacco)'
- (83) (màak)-bòk source
fruit-land
'*Irvingia malayana*'
- (84) sãam-phan-pii time
three-thousand-year
'*Dacrydium elatum*'
- (85) faràŋ possession
foreigner
'*Psidium 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) tabææk + dææŋ
color
Lagerstroemia + red
'*Lagerstroemia calyculata*'
- (87) campii + nóy size
Michelia + small
'*Michelia floribunda*'
- (88) máʔkhăam + pôm shape
Phyllanthus emblica + oblate
'*Phyllanthus emblica*'
- (89) khěm + hǒm smell
Ixoro finlaysoniana + good smell
'*Ixoro finlaysoniana*'
- (90) máʔ-khăa + khǒm taste
Solanum(egg plant)+ bitter
'*Solanum indicum*'
- (91) yaan + khǎŋ tissue
Dipterocarpus + hard
'*Dipterocarpus retusus*'
- (92) sôm + kfian 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 + lǔan possession
Cassia + royal
'*Cassia siamea*'

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

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

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

(100) hĩaŋ + 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) đũa + wâa another plant
Ficus + *Syzygium cumini*
'*Ficus auriculata*'

(108) mĩat + cĩi propitious thing
Memecylon scutellatum + diamond locket
'*Memecylon scutellatum*'

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

(110) wâa + khĩi-kwaŋ excrement
Syzygium + deer dung
'*Syzygium fruticosum*'

(111) sôm + lom natural items
orange + wind

- ‘*Aganonerion polymorphum*’
 (112) m̀iat + khon + tua-phũu human
Helicia nilagirica + human + male
 ‘*Helicia nilagirica*’
 (113) kradum + phĩi 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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