SIGNIFICANT FEATURES OF NORTHERN THAI COOKING TERMS AND COOKING SYSTEM

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Abstract

A review of studies on Northern Thai food and culture shows that most of the works are ethnographic and descriptive. They do not provide a deep understanding of the Northern Thai way of cooking. In order to understand truly the Northern Thai cooking system, an in-depth semantic analysis needs to be done. This study thus aims to analyze the categorization of cooking terms in Northern Thai in order to understand Northern Thai people's cooking system.

Data used in this study was collected from informants in Chiang Mai, Lamphun, Lampang, and Chiang Rai provinces in Northern Thailand. Thirty five cooking terms were found to represent significant Northern Thai cooking categories, and the components of their meanings were analyzed. The results of the analysis show that all the cooking terms are differentiated from one another by seven dimensions of contrast; namely, HEAT, WATER, OIL, TIME (for cooking), CHILI PASTE, SPECIFIC EQUIPMENT, and SPECIAL INGREDIENT. Under each of these dimensions, there are significant

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semantic features which distinguish one cooking term from the others. These features reveal significant aspects of the Northern Thai cooking system; for example, that food can be "cooked" without heat, and that boiling is the most common method of cooking. The findings also imply ways of eating among Northern Thai people; for instance, they tend to eat lean food cooked with various kinds of complex spices and they eat raw meat, as reflected in some particular kinds of cooking. In addition, Northern Thai food is diverse and meticulous, as evidenced in many separate terms based on the special ingredients and specific equipment used in cooking.

1. Introduction

Northern Thailand is marked by its identifiable way of cooking, which is different from the ways of cooking in other regions of Thailand. For instance, Northern Thai (henceforth NT) has several significant ways of "boiling" represented by separate words for different kinds of boiling, which are equivalent to just one word in Central Thai, i.e., tom^{42} 'to boil'. These terms include แก๋ง /kɛːŋ^{24}/ 'to boil with red chili paste for a moderate amount of time,' จ๋อ /cɔː^{45}/ 'to boil with red chili paste for a large amount of time', อุ๋ม /hum^{42}/ 'to boil dried beef slowly with red chili paste,' เจ๋ว /cew^{24}/ 'to boil ingredients with eggs for a short period of time', ญ๊ำ /ñam^{33}ₗ/ 'to boil with black chili paste for a moderate amount of time' , หลำ /lam^{24}/ 'to boil assorted vegetables with green chili paste for about fifteen minutes', มอบ /mɔːp^{42}/ 'to boil with red chili paste and crab paste for a moderate amount of time,' and, เข้ว /khew^{44ʔ}/ 'to boil vegetable juice

slowly until it becomes sticky and concentrated.' No study has been done to show the contrastive features in the meanings of such NT cooking terms.

In addition, definitions of NT cooking terms found in available books and dictionaries do not show exactly how one term is distinguished from the others and do not reflect the true way of cooking among NT people. The present study is an attempt to identify significant features that distinguish one NT cooking term from others by adopting the ideas of a systematic analysis of the meanings of words formulated by scholars, such as Nida (1979), Palmer (1976), and Lehrer (1974). These three scholars share the same idea of semantic analysis. Nida (1979) states that descriptive definitions of cultural terms in most dictionaries are not systematic and are falsifiable. He proposed a method of analyzing the meanings of terms in the same domain. The method is known as "componential analysis." This method is based on the assumption that the meaning of a word is composed of semantic components, which differentiate the word from others. Thus, words with similar semantic components have similar meanings. Similarly, Palmer (1976:85) says that semantic components have a distinguishing function and that they serve to distinguish the meaning of a lexeme from that of other semantically related lexemes. In other words, their function is to distinguish the meanings of lexemes in the same semantic domain. According to Lehrer (1974), componential analysis not only defines words in semantic fields in a practical way, but also helps us gain insight into the speaker's worldview. In this study we will apply the method of componential analysis to cooking terms in NT in the hope that it will yield clear meanings of the terms and also help us

understand the ways of cooking and eating of NT people.

A review of previous research on cooking and cooking terms shows that people's ways of cooking are culturally varied. Lévi-Strauss (1964) proposed the Culinary Triangle to represent ways in which people cook food. It is comprised of three basic cooking terms: to boil, to roast and to smoke. This pioneer work of Lévi-Strauss has inspired a great deal of research in this field even though his categorization relies only on Western ways of cooking. Lehrer (1967) reveals the whole system of British and American mainstream cooking practices via cooking terms. Among 45 cooking terms that he found, he decided that there were only four basic ones: 'boil,' 'fry,' 'broil,' and 'bake'. Eleven parameters or dimensions of contrast were proposed, such as using water, oil, cooking utensils, and specific equipment. Applying the same framework as Lehrer (1967), Newman (1974) found that there were 45 cooking terms in Hebrew. He compared and contrasted the Hebrew cooking terms with English ones and found a certain similarity, from which he inferred a general cooking system of the Western world.

In the Thai context, Kumtanode (2006) analyzed cooking terms in four regional dialects of Thai: Central Thai, Northern Thai, Northeastern Thai and Southern Thai. She found that NT cooking terms outnumbered those of the other dialects and that Northern Thai and Southern Thai shared certain cooking terms representing the same concepts, such as หมก /mok^{24}/ 'to burn in hot ash'.

It is important to note that in her analysis of the process of making food edible, Kumtanode based her criteria on Western

ways of cooking. That is, food is cooked with heat. As can be seen further in the present study, the NT cooking process does not necessarily require heat. Indeed, a number of NT cooking terms that signify 'to cook without fire' are missing in Kumtanode's work, such as ลาบ /laːp^{42}/ 'to chop raw beef/ buffalo meat with entrails and spices', and ส้า /saː^{44ʔ}/ 'to mix meat and vegetables with spices as salad.' These cooking terms are commonly used in NT life, and to discard these is to ignore important cooking practices in NT culture. The sense of "cooked" and "cooking system" in NT should therefore be redefined in order to reveal the culinary concepts in NT cognition.

2. Data

Preliminary data was collected from the *Dictionary of Lanna*[3]*Thai* by Rungreungsri (1991) and the *Northern Thai Dictionary* by Khemmuk (1996). Several NT cooking books, *Lanna* indigenous recipes and etymological studies were also included. At first, 147 words concerning food preparation were collected. Later, all of them were tested in terms of their semantic and syntactic properties prior to this selection as typical NT cooking terms. Finally, 35 terms were derived and adopted for analysis in the present study.

All of the preliminary set of 147 words was judged by representatives of native NT speakers so as to decide whether each of the words was truly a NT cooking term.

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[3] The word *Lanna* means the upper part of Northern Thailand composed of eight provinces: Chiang Mai, Chiang Rai, Phayao, Lamphun, Lampang, Prae, Nan, and Mae Hong Son. In the past *Lanna* was a prosperous kingdom, and at present the *Lanna* provinces are considered to be more traditional Northern Thai.

The native speakers were from four *Lanna* provinces: namely, Chiang Mai, Chaing Rai, Lamphun and Lampang. It is accepted that these four provinces represent NT cultural unity. A total of twenty representative native speakers (five for each province) were purposively selected. They had to be older than fifty years old and live in the Mueang (downtown) District of each of the provinces. Most were food retailers, chefs or housewives, who were likely to know best about NT food and cooking.

After the selection of typical NT cooking terms, we interviewed the twenty native speakers for a detailed sense of each of the cooking terms.

It should be noted that the data was to some extent regarded as "prescriptive" or "traditional" because it was decided by elderly people. Thus, the findings of the present study are likely to be different from those based on data from younger informants, who may show more mobility and globalization in their eating and cooking habits. However, it is our intention to see the worldview of old people and make use of their knowledge to understand the traditional system of NT cooking, which is more fundamental in terms of NT culture.

3. Semantic and syntactic properties of NT cooking terms

As mentioned above, among all 147 words collected from various sources, 35 words were selected for analysis. These terms were proved to possess certain syntactic and semantic properties.

With reference to syntactic properties, all the NT cooking terms are transitive verbs,

which would fit in the "verb" slot in each of the following sentence patterns.

(1) แม่........ ป้า/จิ้น ชื่อ เฮา กิ๋น
    mɛː^{42}...paː^{43}/cin^{24}haj^{42} haw^{33} kin^{24}
    Mother… fish/ meat give   us   eat
    'Mom (cooked) fish or meat for us to eat.'

(2) แม่   เอา   ป้า/จิ้น   ไป ....
    mɛː^{42} ʔaw^{33} paː^{43}/cin^{24} paj^{33}........
    Mother get fish/meat   go.........
    'Mom got/took the fish or meat in
    order to (cook).'

Both (1) and (2) are common basic sentence patterns in NT as well as in other Thai dialects. The blank slot is supposed to be filled in by a transitive verb. The difference between (1) and (2) is that in (1) the cooking verb is the main verb, but in (2), it is not the main verb in the verbal series.

It should be noted that even though all of the cooking terms are confirmed by the syntactic test to be verbs, some of them can also function as nouns when they are used as names or kinds of dishes. For instance, laːp^{42}, as a cooking term means 'to chop raw beef or buffalo meat with entrails and spices' and as a dish it means 'a kind of food made from chopped raw beef or buffalo meat, mixed with entrails and spices.'[4]

In terms of semantic properties, all of the cooking terms can be included in the superordinate term เญียะ-กิ๋น /ñiaʔ^{45}-kin^{24}/ 'to make something to eat' in the NT cooking taxonomy. Any word that the native speakers considered to be unable to be a

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[4] Traditionally, laːp^{42} is made from raw beef, but today it may also be made from cooked beef.

subordinate term under เญียะ-กิ๋น /ñiaʔ^{45}-kin^{24}/ 'to make something to eat' was crossed out from the list. On the other hand, any term that was confirmed as a sub-category of เญียะ-กิ๋น /ñiaʔ^{45}-kin^{24}/ 'to make something to eat' was maintained in the list. For example, แก๋ง /kɛːŋ^{24}/ 'to boil with red chili paste for a moderate amount of time' and จี่ /ciː^{21}/ 'to grill for a little amount of time' were counted as NT cooking terms, while ผั้ก /phuk^{44ʔ}/ 'to dress food with a small amount of ingredients' and ลอ /lɔː^{33}/ 'to mix food together' were rejected.

It happened that under the super-ordinate category เญียะ-กิ๋น /ñiaʔ^{45}-kin^{24}/ 'to make something to eat' all the terms can be divided into two groups: those signifying to make food edible in order to eat right away and those signifying to make food edible in order to eat later or to preserve. To narrow the scope of the analysis in this study, we took into account only the former group. Therefore, such cooking terms in NT as ลวน /luan^{33}/ 'to sauté meat and keep it for later use,' จ่อม /cɔm^{21}/ 'to ferment small fish,' ส้า /haː^{45}/ 'to ferment big fish,' and หมั๊ก /mak^{24}/ 'to ferment meat or vegetables' were not taken into consideration.

It is interesting to note that all the terms that fit the syntactic and semantic patterns shown above and that were included as cooking terms in this study signify an action during the time of cooking. In contrast, the rejected terms, which did not fit the semantic and syntactic patterns, signify an action either before the cooking time (for example, 'to wash,' 'to gut/ scale a fish,' to chop meat,' 'to clean vegetables') or after the cooking time

(such as 'to decorate,' 'to dress,' 'to prepare a drink'). This justifies the exclusion of these terms as true cooking terms.

4. Distinctive features of NT cooking terms

In our componential analysis of the NT cooking terms, we arrived at seven dimensions of contrast that are necessary to distinguish one term from the others. We divided the dimensions into primary and secondary ones. Primary dimensions of contrast are general and significant, but secondary ones are specific and less significant.

4.1 Primary dimensions of contrast and distinctive features

Three primary dimensions of contrast were found; namely, **HEAT**, **WATER,** and **OIL**. These are primary dimensions because they contain significant features that all the cooking terms need in order to be distinguished from one another. They are also necessary in identifying basic categories of NT cooking. In other words, in defining the cooking terms with regard to their semantic components, all the primary dimensions of contrast must be taken into account.

The semantic features within each of the primary dimensions of contrast are based on the native informants' points of view, not the researchers'. They are binary distinctive features represented by the binary notations (+ and -). A feature with a + sign and that with a – sign are under the same dimension of contrast and opposite to each other. For example, [+WATER] means using water in the process of cooking, while [-WATER] means not using water in the process of cooking. Following are the details of the three primary dimensions of contrast and the binary features under each.

4.1.1 HEAT

This dimension of contrast concerns ways of turning raw food into edible food. This dimension would not be necessary in an analysis of the British/American cooking system because it is assumed that in every method of cooking, heat is used in turning raw food into edible food, as stated in Lehrer (1967). In the NT cooking system, food can be made edible either by heat or by some other method, such as mixing raw meat and fresh vegetables with various hot spices and seasonings, especially chili and herbs. We use the features [+HEAT] and [-HEAT] to signify cooking by using heat and cooking by not using heat, respectively. For example, แกง /kɛːŋ^{24}/ 'to boil with red chili paste for a moderate amount of time' is marked as [+HEAT], while ลาบ /laːp^{42}/ 'to chop raw beef or buffalo meat with entrails, and spices,' as [-HEAT]. Among all 35 NT cooking terms, it was found that four terms are marked with [-HEAT] and the rest are marked with [+HEAT] (See Tables 1 and 2). This implies that in NT cooking culture, using heat is more common than not using heat even though it is not the only method.

4.1.2 WATER

Water is a very common liquid used in cooking. Boiling water turns raw meat and vegetables into edible food. The dimension of WATER means using water in the cooking process. In English the verb *to boil* represents this dimension. In the componential analysis, we assigned the binary features [+WATER] and [-

WATER] to signify 'to cook by using water' and 'to cook without water', respectively. The result of the analysis shows that of all 35 NT cooking terms, 19 terms are marked by [+WATER] and 16 terms are marked by [-WATER] (See Tables 1 and 2). This implies that in NT cooking, the process of "boiling" (+WATER) is used slightly more frequently than other processes (-WATER).

Considering the relation of WATER to the dimension of HEAT, it is found that none of the NT cooking terms are marked as [-HEAT, +WATER]. This means that NT cooking does not allow for the use of water without the use of heat, which seems to be an improbable way of cooking in general.

4.1.3 OIL

OIL here means using cooking oil. The most common type of cooking oil used in NT cooking is lard. Vegetable oil is much less common. The binary features under this dimension of contrast are [+OIL] and [-OIL]. As shown in Table 1, there are only two cooking terms marked as [+OIL]. All the rest are marked as [-OIL]. We can infer from this finding that cooking with oil, such as "frying," is not a common NT cooking method. In other words, the NT process of cooking food is mostly lean.

In relation to the dimension of HEAT, it was found that none of the cooking terms are marked as [-HEAT, +OIL]. This is similar to the relation between heat and water mentioned above. That is, NT cooking does not allow for the use of oil without the use of heat in cooking. Thus, to make salad in a Western way is not found in NT cooking terms.
Considering the relation between the dimensions of WATER and OIL, it was

found that there is no term marked as [+WATER, +OIL]. This fact suggests that cooking using both oil and water is not practiced in NT culture. It is clearly different from cooking in some other Asian cultures in which [+WATER, +OIL] food is common; for example, a Burmese curry recipe requires that meat and spices be fried with cooking oil before they are boiled.[5] The Chinese way of making mixed vegetable soup is similar. All the ingredients need to be fried with cooking oil before they are boiled.[6]

Considering all three dimensions of contrast together, as shown in Table 1, we can infer that there are four basic ways of cooking in NT culture: namely, 1) "boiling" (cooking using heat and water but without oil), 2) "frying" (cooking using heat with oil, but without water), 3) "direct-heat cooking" (using heat but without water and oil), 4) "pseudo-cooking" (without heat, water and oil).

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[5] See the Burmese recipe for beef and potato curry in http://www.asianonlinerecipes.com/online_recipes/burma/beef-potato-curry.php (retrieved on Dec 22, 2012)

[6] See a recipe for Chinese mixed vegetables soup in http://www.ucancookthai.com/language-thai/th-recipes/th-curry/content-th-mixed-veggie-soup.htm (retrieved on Dec 22, 2012)

Table 1 Primary dimensions of contrast and distinctive features of NT cooking terms

HEAT	+HEAT				-HEAT			
WATER	+WATER		-WATER		+WATER		-WATER	
OIL	+OIL	-OIL	+OIL	-OIL	+OIL	-OIL	+OIL	-OIL
Nos. of cooking terms	NONE	19 terms (Nos. 1-19)	2 terms (Nos. 20-21)	10 terms (Nos. 22-31)	NONE	NONE	NONE	4 terms (Nos. 32-35)
Main ways of cooking		"boiling"	"frying"	"direct-heat cooking"				"pseudo-cooking"

As can be seen in Table 1, the primary dimensions of contrast are placed in a hierarchy with [+HEAT] and [-HEAT] first. Then the binary features of [+WATER] and [-WATER] are placed to relate to both [+HEAT] and [-HEAT]. The next features, [+OIL] and [-OIL], are related to both heat and water. The cooking terms with identifying numbers under each group indicated by the features of all three dimensions refer to those in Table 2. The last row contains the labels of each group of the main categories of NT cooking. The numbers of cooking terms in all four categories are not equal. "Boiling" is the most common way of NT cooking. The second is "direct-heat cooking." The other two categories are not as common, but "pseudo-cooking" seems to be more common than "frying."

4.2 Secondary dimensions of contrast and distinctive features

Secondary dimensions of contrast are not required in defining every cooking term. They add specific features to each cooking term to make its meaning clear. They are usually descriptive features and are not binary ones. Four secondary dimensions of contrast were indentified: 1) TIME; 2) CHILI PASTE; 3) SPECIFIC EQUIPMENT; 4) SPECIAL INGREDIENT.

4.2.1 TIME

It is universally essential for chefs to control the amount of time during cooking. A slight difference in time can change not only the taste but the edibility of food. The dimension of TIME means the amount of time used in cooking. We assign three semantic features under this demension:1) [+little time] meaning not more than ten minutes is spent in cooking, e.g., เจ๋ว /cew^{24}/ 'to boil ingredients with eggs for a short period of time,' 2) [+moderate time] meaning spending about 10-20 minutes in cooking, e.g., หล้ำ /lam^{24}/ 'to boil many assorted vegetables for about fifteen minutes,' 3) [+much time] meaning spending more than twenty minutes in cooking, e.g., หง /hoŋ^{21}/ 'to cook rice by boiling until the water is used up.'

The result of the analysis shows that of all 35 NT cooking terms, only two cooking terms do not concern TIME. They are ขั้ว /khua^{44ʔ}/ 'to cook by stirring in a *Lanna* pan with little water,' and ส้า /saː^{44ʔ}/ 'to mix meat and vegetables with spices as salad.' The amount of time used in these two types of cooking varies according to the main ingredients.

Among the rest of the terms to which TIME is relevant, 17 terms are marked with [+much time], 10 terms are marked with [+little time], and 6 terms with [+moderate time]. This implies that most NT cooking requires much time.

4.2.2 CHILI PASTE

Even though a number of spices are used in NT cooking, chili paste plays an important role in distinguishing several kinds of NT cooking, e.g., แกง /kɛːŋ^{24}/ 'to boil with red chili paste,' vs. จอ /cɔː^{33}/ 'to boil with green chili paste.'

Chili paste is composed of a kind of chili (red or green) and other ingredients, pounded together and burned for a short while. There are four distinctive kinds of chili paste: 1) **green chili paste** composed of fresh long green chili[7], shallots, garlic, shrimp paste, fermented fish and other spices; 2) **red chili paste** composed of dry red chili and other ingredients identicle to those in green chili paste; 3) ***larp* chili paste** composed of dry red chili, shallots, garlic, lemon grass, and galangal, all burned until dark and crushed with spices. This kind of chili paste is used in making the dishes that are cooked without heat; and 4) **black chili paste** composed of dry red chili burned until black and crushed with salt. This kind of chili paste is used to change the color of food from natural to black. These four kinds of chili paste are represented by descriptive features (all with a + sign); namely, [+green chili paste], [+red chili paste], [+*larp* chili paste], and [+black chili paste]. The cooking terms that are not marked with any of these four features are those to which chili paste is not relevant. That is,

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[7] In NT, it is named 'young chili.'

normally they signify cooking without chili paste. In contrast, those that are marked with [+chili paste] signify that it is impossible to cook without chili paste.

It was found that the dimension of chili paste is relevant to 14 cooking terms. Among those with the feature of chili paste, the majority (9 terms) are marked as [+red chili paste], two are marked as [+green chili paste], two as [+*larp* chili paste], and only one as [+black chili paste]. All of this implies that red chili is the favorite kind of chili in NT cooking and that NT food is more likely to be non-spicy, as shown in the semantic components of 21 cooking terms without the feature [+chili paste] vs. 14 cooking terms with the feature [+chili paste].

4.2.3 SPECIFIC EQUIPMENT

The SPECIFIC EQUIPMENT dimension of contrast refers to a special cooking utensil required in a particular method of cooking. It can be a man-made or natural material. Ten features representing ten types of specific utensils found under this dimension are as follows.

1) [+open pot] referring to a pot that has to be left open throughout the entire cooking process. This feature is a marker of อ่อม /ʔɔm^{21}/ 'to boil slowly with red chili paste in an open pot.'

2) [+closed pot] referring to a pot that has to be closed during cooking. This is a marker of อ๊บ /ʔop^{24}/ 'to boil slowly with red chili paste in a closed pot.'

3) [+steamer] referring to a Chinese steamer used in certain kinds of cooking, such as หนึ้ง /nɯŋ^{44ʔ}/ and กั๊น /kan^{45}/, both meaning 'to steam glutinous rice,' but the latter is also marked by another features, namely [+blood].

4) [+*Lanna* pan] referring to a particular kind of pan. In NT, it is called "mor-khang" and is used specifically for NT cooking. This type of pan is deep, made of iron, curves to the top and has one handle. The feature [+ *Lanna* pan] is a marker of six NT cooking terms: Nos. 16-21 in Table 2.

5) [+stick] referring to a long wooden stick used as a skewer for barbecue. It is a marker of ฮิง /hiŋ^{33}/ 'to barbecue meat or vegetables on sticks for a large amount of time.'

6) [+banana leaf] referring to banana leaves used for wrapping ingredients for burning or grilling. They function as a cooking utensil. There are two NT cooking terms marked by the feature [+banana leaf]: แอน /ʔæːn^{33}/ 'to burn ingredients wrapped in banana leaves for a moderate amount of time,' and แอ๊บ /ʔɛp^{24}/ 'to grill ingredients wrapped in banana leaves for a large amount of time.'

7) [+ash] referring to ash from charcoal functioning as utensil. Food (mostly sweet potatoes or taro) is put in hot ash until cooked. The cooking term marked by this feature is หมก /mok^{24}/ 'to burn in hot ash.'

8) [+bamboo] referring to bamboo sections in which glutinous rice and ingredients are put and burned. It distinguishes หลาม /laːm^{24}/ 'to burn glutinous rice in bamboo sections for a large amount of time' from other NT cooking terms.

9) [+crab shell] referring to shells of paddy crab used as containers for cooking. It is a distinctive feature that marks อ่อง$_1$ /ʔɔŋ$^{21}_1$/ 'to grill ingredients in crab shells for a short time.'

10) [+mortar] referring to a mortar and pestle used for preparing a particular kind of food that does not need heat, water, and oil. It is a distinctive feature that marks ตำ /tam^{24}/ 'to crush and mix using a mortar and a pestle.'

As can be seen, these ten distinctive features are specific markers required in defining certain particular types of cooking. All the other NT cooking terms do not include these features. That means that any cooking utensil can be used in the cooking process. The specific features under the dimension of SPECIFIC EQUIPMENT actually show distinctive culinary traits of Northern Thai culture; for example, the use of a mortar and pestle, ash, banana leaves, and bamboo sections used as cooking utensils.

4.2.4   SPECIAL INGREDIENT

SPECIAL INGREDIENT as a dimension of contrast here means natural material specially required in a particular method of cooking. It cannot have any substitute and serves as a marker of the particular method of cooking. For example, tomatoes are the special ingredient of อ่อง₂ /ʔɔŋ²¹₂/ 'to cook by stirring in a *Lanna* pan with little water, red chili paste, tomatoes, and for a large amount of time,' since no other ways of cooking require tomatoes. Similarly, pig's skin is the special ingredient of สู่ /suː²¹/, which means 'to deep fry pig's skin only so as to make crispy pork rinds.' Twelve features within the SPECIAL INGREDIENT dimension of contrast were identified. They are as follows:

1)   [+dried beef] referring to beef or buffalo meat which is salted and dried, like beef jerky, which is tough and needs much time in cooking. This feature marks อุ่ม /hum⁴²/ meaning 'to boil slowly dried beef with red chili paste.'

2)   [+tough chicken] referring to chicken meat from domestic fowl. It is tough and needs much cooking time. This feature is a marker of อุ๊ด /ʔut⁴⁵/ 'to boil slowly tough chicken with red chili paste.'

3)   [+crab paste] referring to paste from crushed paddy crab found on rice farms. The only cooking term marked by this feature is มอบ /mɔːp⁴²/ 'to boil with red chili paste and crab paste for a moderate amount of time.'

4)   [+vegetable] referring to various kinds of vegetables or the juice from them. This is the marker of หลํา/lam²⁴/ 'to boil assorted vegetables with green chili paste for about fifteen minutes,' and เขียว /khew⁴⁴ʔ/ 'to boil vegetable juice slowly until it is sticky and concentrated.'

5)   [+tomato] referring to tomatoes used in making a dish called "spicy meat and tomato dip." It is the most important marker of อ่อง₂ /ʔɔŋ²¹₂/ 'to cook by stirring in a *Lanna* pan with little water, red chili paste, tomatoes, and for a large amount of time.'

6)   [+rice] referring to rice grains. Only one cooking term is marked by this feature; i.e., หง /hoŋ²¹/ 'to cook rice by boiling until the water is used up.'

7)   [+pig's skin] referring to pigs' skin used as food. It specifically marks only one cooking term; i.e., สู่ /suː²¹/ 'to deep-fry pigs' skin slowly until it is crispy.'

8)   [+egg] referring to eggs, which is a marker of ป่าม /paːm²¹/ 'to grill slowly beaten egg wrapped in banana leaves,' and เจ๋ว /cew²⁴/ 'to boil ingredients with eggs for a short period of time.'

9)   [+liver] referring to cow, buffalo or pig liver. It is the marker of หลน/lon²⁴/ 'to grill liver for a few minutes.'

10) [+beef/buffalo meat] referring to raw beef or buffalo meat, which is required in two kinds of cooking; i.e., ลาบ /laːp^{42}/ 'to chop raw beef or buffalo meat with entrails, and spices,' and หลู้ /luː$^{44?}$/ 'to mix raw beef or buffalo meat with blood and spices.' Traditionally, no other kind of meat is used in such cooking, but today, pork and chicken are sometimes chosen as substitutes for beef and buffalo meat.

11) [+blood] referring to fresh cow's, buffalo's, or pig's blood. It is a special ingredient required in หลู้ /luː$^{44?}$/'to mix raw beef or buffalo meat with blood and spices,' and กั๊น /kan^{45}/ 'to steam glutinous rice mixed with blood wrapped in banana leaves,'

12) [+offal] referring to internal organs and entrails of butchered animals. Here it excludes bone, muscle, liver, and blood, and serves as the distinctive marker of ลาบ /laːp^{42}/ 'to chop raw beef or buffalo meat with entrails, and spices,'

It is interesting to note that among all 35 NT cooking terms, there are ten terms that demand specific ingredients. This seems to imply that NT ways of cooking are varied and meticulous. Specific details of ingredients are observed and carefully treated, as can be seen in assigning a particular term for a particular special ingredient, as shown above.

5. Semantic Components of NT cooking Terms

Based on the primary and secondary semantic features shown above, we define the meanings of all 35 cooking terms in the form of distinctive features. Thus, each term is distinguished from the others by a bundle of semantic components, as shown in Table 2. Note that primary features are written in capital letters and secondary ones in small letters.

Table 2 NT cooking terms and their bundles of semantic components

No.	Cooking Terms	Bundles of Semantic Components	Concise definitions
1	แก๋ง /kɛːŋ²⁴/	[+HEAT] [+WATER] [-OIL] [+moderate time] [+red chili paste]	to boil with red chili paste for a moderate amount of time
2	จอ /cɔː³³/	[+HEAT] [+WATER] [-OIL] [+much time] [+green chili paste]	to boil with green chili paste for a large amount of time
3	จ๊อ /cɔː⁴⁵/	[+HEAT] [+WATER] [-OIL] [+much time] [+red chili paste]	to boil with red chili paste for a large amount of time
4	ฮุ่ม /hum⁴²/	[+HEAT] [+WATER] [-OIL] [+much time] [+red chili paste] [+dry meat]	to boil slowly dried beef with red chili paste
5	อ่อม /ʔɔm²¹/	[+HEAT] [+WATER] [-OIL] [+much time] [+red chili paste] [+open pot]	to boil slowly with red chili paste in an open pot
6	อ๋บ /ʔop²⁴/	[+HEAT] [+WATER] [-OIL] [+much time] [+red chili paste] [+closed pot]	to boil slowly with red chili paste in a closed pot
7	อุ๊ด /ʔut⁴⁵/	[+HEAT] [+WATER] [-OIL] [+much time] [+red chili paste] [+tough chicken]	to boil slowly tough chicken with red chili paste
8	มอบ /mɔːp⁴²/[8]	[+HEAT] [+WATER] [-OIL] [+moderate time][+red chili paste] [+crab paste]	to boil with red chili paste and crab paste for a moderate amount of time
9	ญ๋ำ /ñam³³/	[+HEAT] [+WATER] [-OIL] [+moderate time] [+black chili paste]	to boil with black chili paste for a moderate amount of time
10	หล๋ำ /lam²⁴/	[+HEAT] [+WATER] [-OIL] [+moderate time] [+green chili paste] [+vegetable]	to boil assorted vegetables with green chili paste for about fifteen minutes
11	เจ๋ว /cew²⁴/	[+HEAT] [+WATER] [-OIL] [+little time] [+egg]	to boil ingredients with eggs for a short period of time
12	เขๅว /khew⁴⁴ʔ/	[+HEAT] [+WATER] [-OIL] [+much time] [+vegetable]	to boil vegetable juice slowly until it is sticky and concentrated
13	หง /hoŋ²¹/	[+HEAT] [+WATER] [-OIL] [+much time] [+rice]	to cook rice by boiling until the water is used up
14	หนึ้ง /nɯŋ⁴⁴ʔ/	[+HEAT] [+WATER] [-OIL] [+much time] [+steamer]	to steam glutinous rice or vegetables slowly
15	กั๊น /kan⁴⁵/	[+HEAT] [+WATER] [-OIL] [+much time] [+steamer] [+blood]	to steam slowly glutinous rice mixed with blood often wrapped in banana leaves
16	ขั้ว /khua⁴⁴ʔ/	[+HEAT] [+WATER] [-OIL] [+*Lanna* pan]	to cook by stirring in a *Lanna* pan with little water
17	ผั๋ด /phat²⁴/[9]	[+HEAT] [+WATER] [-OIL] [+little time] [+*Lanna* pan]	to cook by stirring in a *Lanna* pan with little water and for a short amount of time
18	อีอๅก /ʔɔk²⁴/	[+HEAT] [+WATER] [-OIL] [+little time] [+red chili paste] [+*Lanna* pan]	to cook by stirring in a *Lanna* pan with little water, red chili paste, and for a short amount of time

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[8] Some informants use the word มอก /mɔːk⁴²/ with the same meaning as มอบ /mɔːp⁴²/.

[9] The words โซๅ /soː⁴⁵/ or ซวๅ /swaː⁴⁵/ are also used to mean the same thing.

19	อ่อง₂ /ʔɔŋ²¹₂/	[+HEAT] [+WATER] [-OIL] [+much time] [+red chili paste] [+*Lanna* pan] [+tomato]	to cook by stirring in a *Lanna* pan with little water, red chili paste, tomatoes, and for a large amount of time
20	ต้อด /tɔːt⁴²/	[+HEAT] [-WATER] [+OIL] [+much time] [+*Lanna* pan]	to deep-fry in a *Lanna* pan for a large amount of time
21	สู่ /suː²¹/	[+HEAT] [-WATER] [+OIL] [+much time] [+*Lanna* pan] [+pig's skin]	to deep-fry pigs' skin slowly in a *Lanna* pan until it is crispy
22	จี่ /ciː²¹/	[+HEAT] [-WATER] [-OIL] [+little time]	to grill for a short amount of time
23	ปิ้ง /piŋ⁴⁴ʔ/	[+HEAT] [-WATER] [-OIL] [+moderate time]	to grill for a moderate amount of time
24	ป่าม /paːm²¹/	[+HEAT] [-WATER] [-OIL] [+little time] [+egg]	to grill slowly beaten egg wrapped in banana leaves
25	หลน /lon²⁴/	[+HEAT] [-WATER] [-OIL] [+little time] [+liver]	to grill liver for a few minutes
26	แอ็บ /ʔɛp²⁴/	[+HEAT] [-WATER] [-OIL] [+much time] [+banana leaf]	to grill ingredients wrapped in banana leaves for a large amount of time
27	อ่อง₁ /ʔɔŋ²¹₁/	[+HEAT] [-WATER] [-OIL] [+little time] [+crab shell]	to grill ingredients in crab shells for a short time
28	อิง /hiŋ³³/	[+HEAT] [-WATER] [-OIL] [+much time] [+stick]	to barbecue for a large amount of time meat or vegetables on sticks
29	แอน /ʔæːn³³/ [10]	[+HEAT] [-WATER] [-OIL] [+moderate time] [+banana leaf]	to burn ingredients wrapped in banana leaves for a moderate amount of time
30	หมก /mok²⁴/	[+HEAT] [-WATER] [-OIL] [+much time] [+ash]	to burn in hot ash
31	หลาม /laːm²⁴/	[+HEAT] [-WATER] [-OIL] [+much time] [+bamboo]	to burn glutinous rice in bamboo sections for a large amount of time
32	ตำ /tam²⁴/	[-HEAT] [-WATER] [-OIL] [+little time] [+mortar]	to crush and mix using a mortar and a pestle
33	ลาบ /laːp⁴²/	[-HEAT] [-WATER] [-OIL] [+little time] [+ *larb* chili paste] [+beef /buffalo meat], [+offal]	to chop raw beef or buffalo meat with entrails, and spices
34	ส้า /saː⁴⁴ʔ/	[-HEAT] [-WATER] [-OIL]	to mix meat and vegetables with spices as salad
35	หลู้ /luː⁴⁴ʔ/	[-HEAT] [-WATER] [-OIL] [+little time] [+ *larb* chili paste] [+beef /buffalo meat] [+blood]	to mix raw beef or buffalo meat with blood and spices

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[10] The word เผา /phaw²⁴/ may be used with the same meaning.

6. NT Cooking system inferred from the semantic components of NT cooking terms

The system of NT cooking inferred from the result of the componential analysis of the meanings of NT cooking terms shown above is displayed in Figure 1.
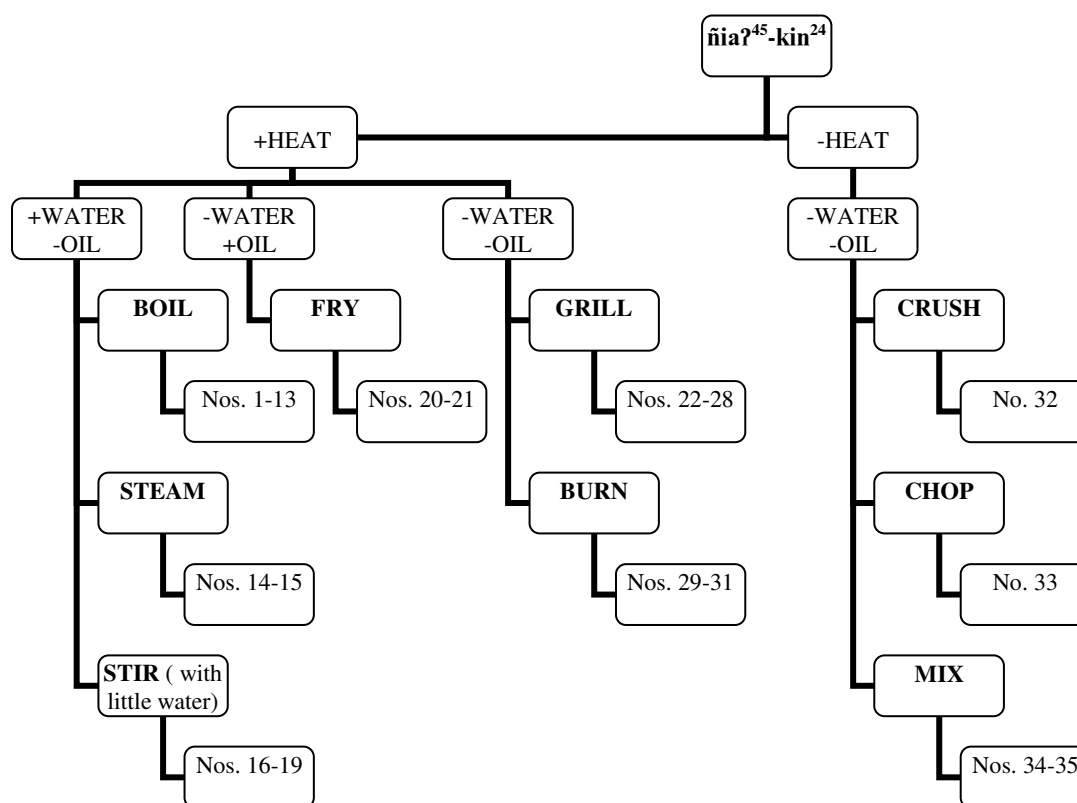

Figure 1 NT cooking system

As can be seen in Figure 1, the NT cooking system starts with the concept of เญียะ-กิ๋น /ñia?^{45}-kin^{24}/ 'to make something to eat.' The first essential step that NT people think of is whether to use heat or not. This is different from the system of cooking in many societies, where heat is obligatory in cooking. However, as Figure 1 shows, most kinds of NT cooking require heat. Cooking by using heat is divided into three main categories: using water (+WATER, -OIL), using oil (-WATER, +OIL), using neither (-WATER,

-OIL). Among these three categories, it is found that using water as the medium of heat is the most selected.

Cooking by using water is divided into three main types: 1) **boiling**, which refers to using a lot of water to cook; 2) **steaming**; 3) **stirring** with little water in a pan. It is interesting to see that there are many different ways of boiling in NT cooking system represented by separate thirteen cooking terms. The second common way of cooking by using water

and not using oil is cooking in a pan by using little water and stirring the ingredients until well-cooked. As for steaming, it is found to be not as common as boiling.

The second main category is to cook by using oil without water. It is remarkable that this type is rarely used. Only two terms represent "deep-fry" way of cooking. One is general—referring to frying anything, and the other specifically referring to frying pig's skin only.

The third main category is to cook by direct heat; i.e., using neither water nor oil. In the NT cooking system there are two ways of direct heat: **grilling** and **burning**. The former refers to putting food on a gridiron above charcoal, and the food is cooked by radiant heat. The latter refers to putting food in hot ash or wrapping food in banana leaves or bamboo sections and putting it in a fire. The food is cooked by direct heat.

The last main category of NT cooking does not require heat, but the food is processed in such a way that it is considered to be "cooked" and edible. There are three types of cooking as such: 1) **crushing** the ingredients in a mortar with a pestle; 2) **chopping** ingredients together; and 3) **mixing** ingredients as salad. What should be noted about these types of cooking is that most of the time raw meat, entrails, and fresh blood are main ingredients. This implies that the concept of "cooked" for NT people is different from that in other societies.

7. Conclusion

This study attempts to reveal the whole picture of NT cooking system by analyzing the meanings of 35 NT cooking terms. The terms represent significant categories of NT cooking and were selected according to syntactic and semantic criteria, so as to assure that we obtained the terms that signify "to make something to eat," which excluded terms referring to preserving food for future use and preparing ingredients before cooking or decorating food after cooking. In addition, it is not a purpose of this study to describe or analyze recipes. Therefore, the meaning of each cooking term provided in this study is not equal to details in recipes. On the contrary, only distinctive features of each term are shown so that we can compare and contrast it to the others. The method of componential analysis was adopted so as to determine the distinctive features or the significant semantic components of those terms.

The results of the analysis show the system of NT cooking terms that reflects NT ways of cooking. The cooking terms are distinguished from one another by three primary features: HEAT, WATER, OIL, and four secondary features: TIME (for cooking), CHILI PASTE, SPECIFIC EQUIPMENT, and SPECIAL INGREDIENT. These linguistic findings reveal the picture of NT cooking culture. We have inferred that there are nine ways of cooking in the NT culinary culture. They are **boiling**, **steaming**, **stirring** (with little water in a pan), **frying**, **grilling, burning, crushing, chopping**, and **mixing**. The last three ways do not require heat. It is clear that boiling is the most common and grilling is the second. Also, it is interesting that several ways of cooking that are common in other cultures are missing in NT culture, such as roasting, smoking, baking, and broiling.

This study has certain significant implications concerning NT ways of

eating. Firstly, NT people tend to eat lean food, as evidenced by the fact that the majority of cooking terms are marked by [-OIL] (33 out of 35 terms). Frying is indeed an uncommon way of cooking in Northern Thai. Secondly, NT people eat raw meat, as can be seen in certain cooking terms marked by raw beef or buffalo meat and not using heat, such as ลาบ /laːp^{42}/ 'to chop raw beef or buffalo meat with entrails, and spices,' and หลู้ /luː^{44ʔ}/ to mix raw beef or buffalo meat with blood and spices.' The food prepared in these ways is considered "cooked" and certainly edible. Thirdly, NT food is complexly spicy, but the taste is not hot, considering the ingredients that form "chili paste". Finally, the cooking process may sound simple, but the ingredients are meticulous and specifically various, as evidenced in the secondary semantic features under the dimensions of SPECIFIC INGREDIENTS and SPECIAL EQUIPMENT that mark each cooking term.

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