A Complicating Distortion of Syntactic Categories: The Case of Reduplication in Thai

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An interesting syntactic problem in Thai is the complicating distortion of a number of syntactic categories due to a linguistic process called reduplication. Many Thai linguists and grammarians such as Mahathanasin (1985), Udommaneesuwat (1983), Thichinphong (1980), Songwithaya, A. & Songwithaya, N. (1976), Bruminhen (1964) and Somphong (1967) have worked on reduplication of words in Thai. Some of them have attempted to analyze the relation of sound and meaning of words undergoing reduplication. However, no linguists have worked on the analysis of the relation of sound, meaning, and syntax. In this study, I propose that reduplication is not only a linguistic process affecting words but also a process that affects phrases and clauses or sentences. I will show the relationship between sound, meaning, and syntax. This relationship is quite crucial to the present analysis of reduplication in Thai. Based on this proposal, I will address some critical problems in syntax from the point of view of reduplication in Thai.

The paper is divided into four sections. Section 1: The Notion of Reduplication; Section 2: Analysis; Section 3: Some Syntactic Problems; and Section 4: Conclusion. Note that the sequence of symbols ´ ´ represents the extra high tone.

THE NOTION OF REDUPLICATION

The linguistic process called "reduplication" has been defined in similar ways by most linguists and grammarians. Crystal (1985) defines it as a term in morphology for a process of repetition whereby the form of a prefix/suffix reflects certain phonological characteristics of the root. This process may be found in Greek. In English the nearest one gets to this is in "reduplicative compound" words, such as *helter-skelter* and *shilly-shally*. Reduplication is also found in Greek, Latin, and Sanskrit in the formation of various verb forms, e.g., Latin *cano* 'I sing' and, with reduplication of the initial syllable, *cecini* 'I sang, I have sung.' [1]

Langacker (1972) considers reduplication rules as a class of insertion rules involving a phonological process. Reduplication rules have the effect of copying a root, syllable, or segment and attaching it to the original segment. Normally a reduplicated element is added at the beginning of a form, but it may also be added at the end or somewhere in the middle.

According to Anderson (1985), reduplication, which consists of the copying of part (or all) of the affected stem, could be treated either as a special sort of affixation or as a type of stem modification. Reduplication most typically affects the leftmost portion of the stem. The material copied may consist of (1) the initial consonant (or cluster), perhaps reinforced by a constant vowel; (2) the initial c_0v; (3) the entire first syllable;

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[1] Peter Freeouf (personal communication).

or perhaps (4) the entire root. Unlike other grammatical processes, reduplication seems always to reflect one of a fairly limited set of categories.

Udommaneesuwat's (1983) reduplication covers two-syllable words which are classified into two types: (1) words that contain one independent syllable, and (2) those with two dependent syllables. For the former, either one or both syllables undergo reduplication. In cases where one syllable is reduplicated the meaning of the output must be related to that of the unreduplicated syllable. In the second type, both syllables must show some kind of vowel harmony, and the two syllables must co-occur to yield the meaning.

For the present study, "reduplication" is defined as a linguistic process involving such grammatical units as words, phrases, and clauses (or sentences). This means that a word, a phrase, and a clause (or a sentence) can all be reduplicated. One prominent characteristic of reduplication under investigation is productivity. That is, all members of a category can undergo this process. The way they are reduplicated is clearly uniform regardless of their type. Another property of reduplication is that the process is optional. This means that such units are themselves grammatical without undergoing the process, and they are also grammatical when reduplicated. What makes them different are the resulting phonetic forms as well as the semantic, pragmatic and syntactic properties.

THE ANALYSIS

Based on the definition and characteristics of reduplication proposed above, reduplication can be divided into two main types: simple and complex. Both are optional. Let us first examine some examples of simple and complex reduplications in items (1a-d). (1b) shows the simple reduplication of the word *dam* 'black,' while (1c) and (1d) show the complex reduplication of the same word.

(1)a. dam
    'black'
  b. dam-dam
    'in the black tone'
  c. dám-dam
    'very black'
  d. dam-dám-dam
    'very black'

Here I analyze as bases the first element *dam* in the sequence *dam-dam*, the first element *dám* with the high tone in the sequence *dám-dam* and the first element *dam* in the sequence *dam-dám-dam*. The second and third elements in these sequences are analyzed as the reduplicants. One motivation for this analysis is the modified-modifier pattern, or the left-to-right order, which is the main word order in Thai. For instance, a noun precedes an adjective; a preposition occurs before a noun phrase, a verb before a noun phrase complement and its modifier, and an adverb before an intensifier, etc.

If we do not treat the first element of each sequence as the base, we will face a problem with the form *dám*, the second element in the sequences (1b) and (1c) as well

as the forms *dám-dam* which are the second and third elements of the sequence in (1d). Here the form *dam* exists in the Thai lexicon, while the form *dám* does not. Based on the modified-modifier pattern in Thai, it is not plausible to analyze the grammatical form *dam* in the second or the third position of the sequence as the base. Nor is it logical to allow two bases in the sequence only for the sake of the grammatical form of the word. The simplest way of analysis in this circumstance is to treat the first element of the sequence, regardless of the form, as the base, leaving the rest as the reduplicant(s). In this way the base appears either as a grammatical form (or the form which exists in the lexicon) or as an ungrammatical form, depending on the types of reduplication. And so does the reduplicant.

In this study, the base can be a word, a phrase, or a clause/sentence. A word can be a monosyllabic or a polysyllabic word, or alliterative (that is, a word with two or more syllables that rhyme or are harmonious in vowels, or in vowel and final consonant, or in initial consonants). This includes compound words and lexical idioms. Idioms in the form of a word, phrase, and clause can all undergo reduplication.

Due to limited space, I will not discuss in detail the semantics of reduplication here. Shown in the following sections are distributions of simple and complex reduplication.

Simple Reduplication (SR)

When a grammatical unit undergoes SR, the reduplicant is completely identical to the original form or the base. This means that the reduplicant contains the same onset, rhyme and tone as the original. SR is more normal for words than for phrases and clauses. Words that undergo this process yield several types of meanings. For example, adjectives undergoing SR have the meaning 'the X type of something'; noun classifiers undergoing SR indicate individuality of the nouns they modify. SR of manner adverbs usually occurs in imperative sentences to mark commanding or ordering. This type of reduplication marks emphasis on phrases and clauses to be reduplicated.

Sentence (2a) shows an occurrence of the bisyllabic word *nâarák* 'nice' without reduplication. SR of this adjective yields the meaning 'the X type of person,' as shown in sentence (2b).

(2a) dæŋ   cʰɔ́ɔp kʰon   nâarák
    Daeng like   person nice
    'Daeng likes nice people.'
(2b) dæŋ   cʰɔ́ɔp kʰon   nâarák-nâarák
    'Daeng likes a nice type of people.'

Sentence (3) shows SR of a verb phrase. When a verb phrase undergoes SR, as illustrated in (3b), it yields an emphatic meaning.

(3a)   cʰán mây cʰɔ́ɔp kʰáw ləy
     I   not like he   at all
    'I don't like him at all.'

(3b) cʰán mây cʰɔ̌ɔp kʰáw ləy–mây cʰɔ̌ɔp kʰáw ləy
  'I really don't like him at all.' (emphasis)

Complex Reduplication (CR)

Complex reduplication is divided into three types according to phonological properties. It includes Complex Reduplication 1 (CR1), with a vowel change; Complex Reduplication 2 (CR2), with a change of vowel and final consonant; and Complex Reduplication 3 (CR3), with a tone change. These changes occur in the final portion of a grammatical unit, that is, in the final syllable of a word, in the final syllable of the last word of a phrase, or in the final syllable of the last word of a clause. All grammatical units can undergo CR1, CR2, and CR3.

It is noted that CR1 and CR2 are interchangeably used because they convey a similar meaning. A speaker uses CR1 or CR2 to express her feeling towards something which she views as uninteresting, dull, unimportant, or common. CR3, on the other hand, is used to mark emphasis or intensification. The three types of reduplication are often used in a particular context or in a responsive conversation. Nonlexical units such as phrases, clauses or sentences which undergo CR are normally short. A clause thus includes a simple subject, a verb, and a simple complement.

CR1 and CR2 are often used by both male and female speakers, while CR3 is often used by female speakers, especially the young. Men rarely use CR3 because they think that it shows some female characteristics of using the language.

Complex Reduplication (CR1)

When a grammatical unit undergoes CR1, the base remains the same while the reduplicant undergoes a vowel change. Here a vowel in the final syllable of a word or of the last word of the unit must be either /ə(ə)/ or /æ(æ)/; /ə/ or /æ/ if the original vowel is short, and /əə/ or /ææ/ if the original vowel is long. Very often the /ə(ə)/ sound is preferred by a speaker to the /æ(æ)/ sound, even though the latter is interchangeably used. Sentence (4b) illustrates CR1 of the NP *cɔ̀tmǎay* 'letter.' In this situation a speaker shows that what he is talking about is not important or interesting. Sentence (4a) contains the basic or unmodified meaning.

(4a) kʰáw kʰỹan cɔ̀tmǎay tʰúk wan
       he   write letter   every day
    'He writes a letter every day.'
(4b) kʰáw kʰỹan cɔ̀tmǎay–cɔ̀tmæ̆æ tʰúk wan
       kʰáw kʰỹan cɔ̀tmǎay–cɔ̀tmə̆ə tʰúk wan
       'He writes a letter (something like a letter)
        every day. (But what he writes is not interesting for me.)'

(5b) shows CR1 of the VP *faŋ pleeŋ* 'listen to music' in (5a), which contains the basic meaning.

(5a) kʰáw faŋ   pleeŋ tʰúk wan
      he   listen to song   every day
      'He listens to songs every day.'

(5b) kʰáw faŋ pleeŋ faŋ plææŋ tʰúk wan
     kʰáw faŋ pleeŋ faŋ pləəŋ tʰúk wan
     'He listens to songs every day (that's what he does,
     but to me, it is not interesting).'

(6b) shows CR1 of the clause *cʰán tôŋ ʔòttʰon* 'I have to be patient' in (6a), which contains the unmodified meaning.

(6a) cʰán tôŋ   ʔòttʰon ʔiik lǽæw
     I   obligation patient again
     'I have to be patient again.'

(6b) cʰán tôŋ ʔòttʰon–tôŋ ʔòttʰæn ʔiik lǽæw
     cʰán tôŋ ʔòttʰon–tôŋ ʔòttʰən ʔiik lǽæw
     'I have to be patient again. (What I have to do is boring.)'

Complex Reduplication (CR2)

When a grammatical unit undergoes CR2, the base is changed, while the reduplicant remains the same as the original form. Here a rhyme (a vowel with a final consonant) of a monosyllabic word or of the last syllable of a word, or a rhyme of the final syllable of the last word in a phrase or in a clause must be /o(o)ŋ/ or /o(o)k/ or /oʔ/. The rhyming syllable /o(o)ŋ/ is used when the original syllable contains any one of the final consonants /n, m, y, w/, or when the rhyme contains a long vowel without a final consonant. (7b) shows CR2 of the constituents of a verb phrase with a direct object *kʰ ʰian còtmǎay* 'write a letter' in (7a). Here the rhyme /ooŋ/ is used.

(7a) kʰáw kʰ ʰian còtmǎay tʰúk wan
     he   write letter   every day
     'He writes a letter every day.'

(7b) kʰáw kʰ ʰian còtmǒoŋ–kʰ ʰian còtmǎay tʰúk wan
     *...kʰ ʰian còtmǒok–kʰ ʰian còtmǎay...
     *...kʰ ʰian còtmǒʔ-kʰ ʰian còtmǎay...
     'He writes a letter every day, (but what he does is not interesting to me).'

(8b) shows CR2 of the entire sentence in (8a). The rhyme /ooŋ/ is required because the word *pʰâa*, which occurs sentence-finally, contains a long vowel. Again (8a) contains the basic meaning.

(8a) kʰáw mây nûŋ   pʰâa
     he   not put on clothes
     'He does not put on any clothes.'

(8b) kʰáw mây nûŋ pʰôoŋ–kʰáw mây nûŋ pʰâa
     * kʰáw mây nûŋ pʰôok–kʰáw mây nûŋ pʰâa
     * kʰáw mây nûŋ pʰôʔ-kʰáw mây nûŋ pʰâa
     'He does not put on any clothes (and that's the way he does. It is not exciting or interesting).'

Next the rhyming syllable /o(o)k/ is used when the original syllable contains /p/ or /t/ as its final consonant. Illustrated in (9b) is CR2 of the VP *mây mii sìt* 'have no right' in (9a). Here the rhyme /ok/ is required because the word *sìt* contains a short vowel and the final consonant /t/.

(9a) cʰán mây mii   sìt ləy
     I   not have right at all
     'I have no right at all.'

(9b) cʰán mây mii sòk–mây mii sìt ləy
     */?? ... mây mii sòŋ–mây mii sìt
     * ... mây mii sòʔ– mây mii sìt...
     'I have no such a thing as rights at all.'

Shown in (10b) is CR2 of a clause in (10a). Here the rhyming syllable /ook/, not /ok/, is used because the last word of the clause, *lôop* 'greedy,' contains a long vowel and the final consonant /p/.

(10a) tʰammay kʰáw lôop   mâak yàaŋ níi
      why   he   greedy much like this
      'Why is he this greedy?'

(10b) tʰammay kʰáw lôok–tʰammay kʰáw lôop mâak yàaŋ níi
      */?? tʰammay kʰáw lôoŋ–tʰammay kʰáw lôop...
      * tʰammay kʰáw lôʔ–tʰammay kʰáw lôop
      'Why is he this greedy? (I have no idea why he is this greedy.)'

Finally the rhyming syllable /oʔ/ is taken when the original syllable contains a short vowel followed by a glottal stop. (11b) shows this fact when the NP *kàʔtʰíʔ* 'coconut milk' in (11a) undergoes CR2. Here the final syllable (of the word) *tʰíʔ* contains a short vowel followed by the glottal stop /ʔ/.

(11a) kʰun cʰɔ́ɔp kàtʰíʔ   ríplàaw
       you like coconut milk yes/no question + or not
       'Do you like coconut milk or not?'

(11b) kʰun cʰɔ̌ɔp kàtʰɔ́ʔ–kàtʰíʔ ríplàaw

    * ... kàtʰók–kàtʰíʔ...

    * ... kàtʰóŋ–kàtʰíʔ...

    'Do you like something like coconut milk or not?'

(12b) shows CR2 of the sentence (12a). The last word of the sentence, ŋɔ́ʔ 'rambutan (a kind of fruit),' contains a short vowel /ɔ/ followed by the glottal stop /ʔ/.

(12a) kʰáw cʰɔ̌ɔp kin ŋɔ́ʔ

    he   like   eat rambutan

    'He likes to eat rambutan.'

(12b) kʰáw cʰɔ̌ɔp kin ŋɔ́ʔ–kʰáw cʰɔ̌ɔp kin ŋɔ́ʔ

    * kʰáw cʰɔ̌ɔp kin ŋók–kʰáw cʰɔ̌ɔp kin ŋɔ́ʔ

    * kʰáw cʰɔ̌ɔp kin ŋóŋ–kʰáw cʰɔ̌ɔp kin ŋɔ́ʔ

    'He likes to eat rambutan.'

Note that neither /o(o)ŋ/ nor /o(o)k/ nor /oʔ/ is allowed when the original syllable is /o(o)ŋ/, /o(o)k/, or /oʔ/, respectively. Words with these rhymes must undergo other types of CR. Some examples to support this fact are shown in (13).

(13a)   lûukpɔ̀ɔŋ 'balloon'

    CR1: lûukpɔ̀ɔŋ–lûukpæ̀æŋ (or) lûukpɔ̀ɔŋ–lûukpə̀əŋ

    CR2: * lûukpɔ̀ɔŋ–lûukpɔ̀ɔŋ

(13b)   loŋ 'down'

    CR1: loŋ–læŋ (or) loŋ–ləŋ

    CR2: * loŋ–loŋ

(13c)   kʰîirôok 'to be easy to get sick'

    CR1: kʰîirôok - kʰîiræ̂æk (or) kʰîirôok–kʰîirə̂ək

    CR2: * kʰîirôok–kʰîirôok

(13d)   kòk 'to sit on eggs'

    CR1: kòk–kæ̀k (or) kòk–kə̀k

    CR2: * kòk–kòk

(13e)   lóʔ 'to throw away'

    CR1: lóʔ–lǽʔ (or) lóʔ–lə́ʔ

    CR2: * lóʔ–lóʔ

Complex Reduplication 3 (CR3)

When a grammatical unit undergoes CR3, only the tone of the base is changed. The non-high tone of a monosyllabic word or of the last syllable of a polysyllabic word must change to high or extra high tone; the high tone of the element under discussion must change to extra high. Similarly, this particular change of tone holds for the final syllable of the last word in a phrase or in a clause. This type of reduplication is used for expressing intensification or emphasis on what is reduplicated.

Shown in (14b) is CR3 of the verb $c^h\hat{ɔ}ɔp$ 'like,' which is part of the sentence in (14a).

(14a) c^hán $c^h\hat{ɔ}ɔp$ k^háw   mâak
      I   like   her   much
      'I like her a lot.'

(14b) c^hán $c^h\hat{ɔ}ɔp$–$c^h\hat{ɔ}ɔp$ k^háw

      'I do like her.' (The emphasis is on the verb $c^h\hat{ɔ}ɔp$)

Illustrated in (15a) is a regular sentence and in (15b) the CR3 of sentence (15a). Here the emphasis is put on the whole of the original sentence.

(15a) c^hán mây $c^h\hat{ɔ}ɔp$ k^háw ləy ciŋciŋ
      I   not like   he   at all really
      'I really don't like him at all.'

(15b) c^hán mây $c^h\hat{ɔ}ɔp$ k^hǎ́w–c^hán mây $c^h\hat{ɔ}ɔp$ k^háw

      'I really don't like him at all.'

SOME SYNTACTIC PROBLEMS

In this section I address some syntactic problems of reduplication in Thai based on my analysis of reduplication, including definitions of base and reduplicant of a grammatical unit that undergoes reduplication. In the discussion of syntactic structures of reduplicated grammatical units, I follow Jackendoff's (1977) X-bar theory. The problems to be discussed include syntactic categories, coordination of syntactic categories, and constituency of elements to be reduplicated.

There are several aspects of reduplication with respect to syntax which are worth observing. These include the syntactic status of a reduplicated unit, the properties of syntactic categories that dominate a reduplicated unit and the formation of larger constituents containing a redupicant. To my knowledge, none of these problems have yet been addressed or worked on.

To begin with, consider the CR3 of the adjective $k^h\hat{ii}k\acute{i}at$ noun phrase shown in (16a). (n.cl. = "noun classifier")

(16a) dèk k^hîikíat–k^hîikìat k^hon níi
      child   ...   lazy   n.cl this
   'This very lazy kid.'

The NP in (16a) can be replaced by the NP in (16b) with the same meaning. Here the quantifier *mâak* 'much' occurs without CR3. If both the reduplicated adjective and the quantifier co-occur, the resulting NP will be questionable.

(16b) dèk   kʰîikìat mâak kʰon níi
      child lazy   much n.cl this
    'This very lazy kid.'
      ? ? dèk kʰîikíat–kʰîikìat mâak kʰon níi

The examples above show that CR3 of the adjective *kʰîikìat* 'lazy' and the occurrence of the quantifier *mâak* are in complementary distribution. CR3 is thus a process that emphasizes and/or intensifies adjectives. Let us now examine the syntactic categories of the adjective that undergoes reduplication and the adjective modified by the quantifier *mâak*.

(17a) shows a configuration of AP *kʰîikìat mâak*. Here the quantifier *mâak* follows the adjective *kʰîikìat* in the modified-modifier pattern.

(17a)
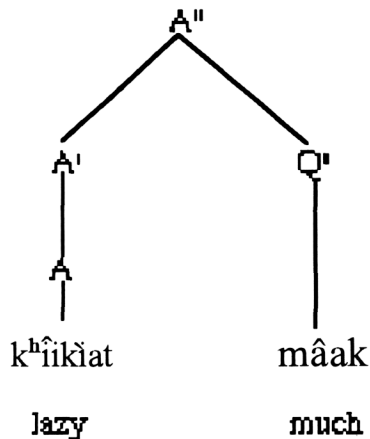
When the adjective *kʰîikìat* undergoes CR3, which yields the same meaning as (17a), we face two major problems. First, under which syntactic node should *kʰîikìat–kʰîikìat* 'very lazy' be located? And second, suppose we can find a proper syntactic category for the reduplicated unit, we will see that the property of this category is changed.

Let us now examine the configuration of *k·îikíat - k·îikìat* in (17b).

(17b)

A''
A'   Q''
| |
A |
| |
kʰîikíat   kʰîikìat

'very lazy'
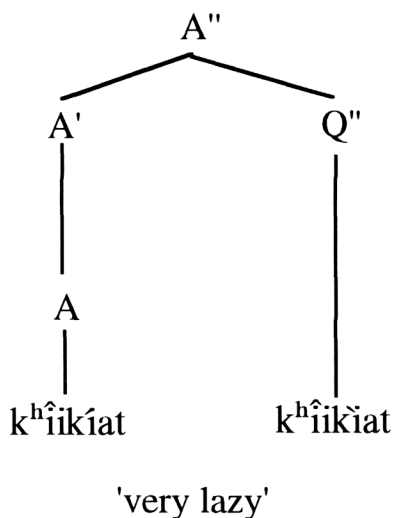
Based on my proposal that a base must precede a reduplicant regardless of its form, we take *kʰîikíat* under the A node in (17b) as the base, and *kʰîikìat* under Q'' as the reduplicant. Still there are two problems here: first *kʰîikíat* under A does not exist in the lexicon because it has no meaning by itself. Thus it cannot be treated as an adjective. Next, by form and meaning *kʰîikìat* under the Q'' node is an adjective, but it does not function as a quantifier. Therefore it cannot be located under the Q'' node.

One way to resolve the problem is to treat the base as an adjective, despite the tone change in its final syllable, for the reason that it is phonetically close to the reduplicant. Again, by form and meaning the reduplicant *kʰîikìat* should be treated as an adjective. In this circumstance, it is reasonable to treat the unit *kʰîikíat–kʰîikìat* as an adjective. Our next task is to consider its linguistic status to see whether it is a word or a phrase. There are two configurations for this unit as shown in (17c) and (17d). In (17c) the base and the reduplicant are separate in a coordinate structure, each being located under the A'' node. When both combine, the whole unit is treated as a coordinate phrase.

(17c)

A''
A''   A''
| |
kʰîikít   kʰîikìat
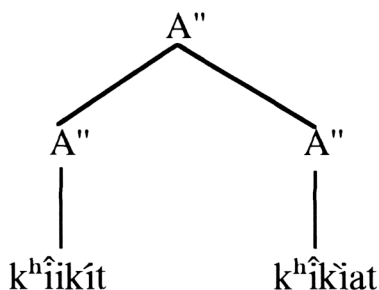
Another possibility is to treat both the base and the reduplicant as one word, as shown in (17d). Here the whole unit is located under the A node.

(17d)

$$A''$$
$$|$$
$$A'$$
$$|$$
$$A$$
$$|$$
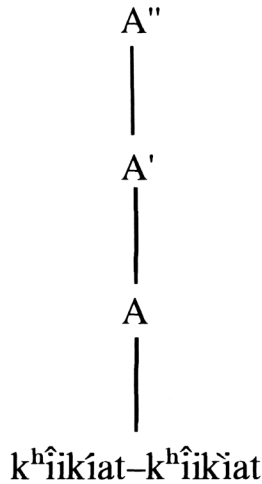
$$\text{k}^{\text{h}}\hat{\text{i}}\text{ik}\text{ì}\text{at–k}^{\text{h}}\hat{\text{i}}\text{ik}\text{ì}\text{at}$$

When considering configurations (17c) and (17d), we see that (17d) is a better choice. By form, the whole unit should be treated as one word because we cannot separate the first element, $k^{h}\hat{i}ik\hat{i}at$, which does not appear in the lexicon, from the reduplicant $k^{h}\hat{i}ik\hat{i}at$. A good support for this choice is the existence of a number of alliterative words in Thai consisting of a meaningful base plus a meaningless part; both together are treated as one word. The reader is referred to further discussion in Sookgasem (1990). Some examples are illustrated in (18). Here $kr\grave{a}\text{?}s\hat{a}ap$ in (18a) and $s\grave{a}\text{?}t^{h}\acute{o}k$ in (18b) are meaningless.

(18a) kràʔsíp–kràʔsâap.   (18b) sàʔtʰók–sàʔtʰɔ́n
    whisper   —   —   shy
      'whisper'   'shy'

We have seen from the evidence above that there is a change in the syntactic category for an adjective undergoing CR3. That is, Adjective contains Quantifier. This shows a collapse of two syntactic categories, A and Q.

Presented next is another complicated problem. Shown in (19a) is a regular sentence in which the VP $d\ddot{i}im$ $l\hat{a}aw$ 'drink whisky' is modified by the quantifier $m\hat{a}ak$ 'much.'

An alternative way to express the meaning of sentence (19a) is to have the VP $d\ddot{i}im$ $l\hat{a}aw$ undergo CR3, which yields the output as shown in (19b).
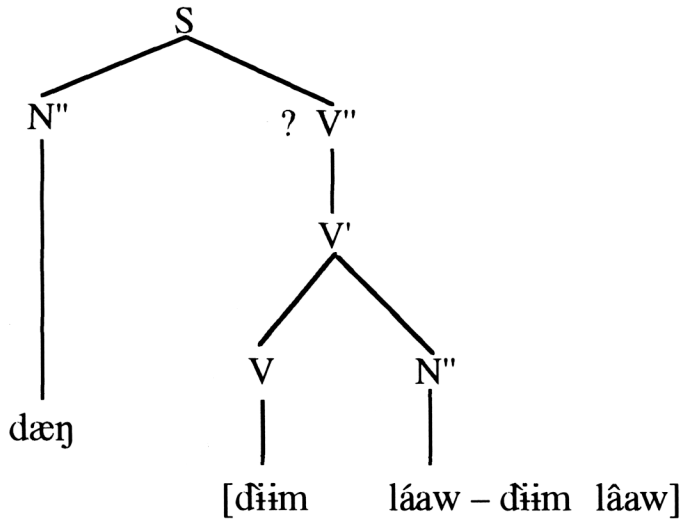
(19a)
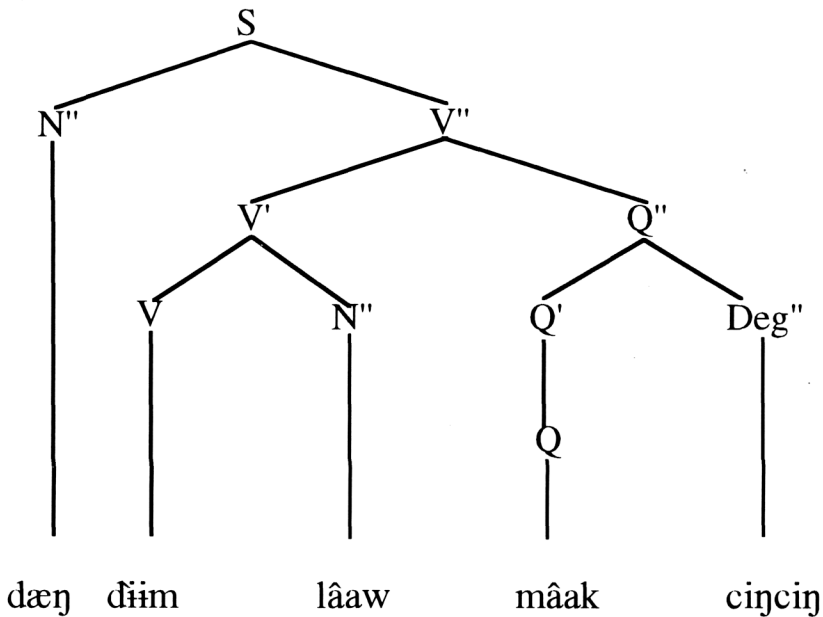
Output: dæŋ dɨɨm lâaw mâak ciŋciŋ
        Daeng drink whisky much really
        'Daeng does really drink a lot of whisky.'

(19b) dæŋ   dɨɨm láaw dɨɨm lâaw
        Daeng drink — drink whisky
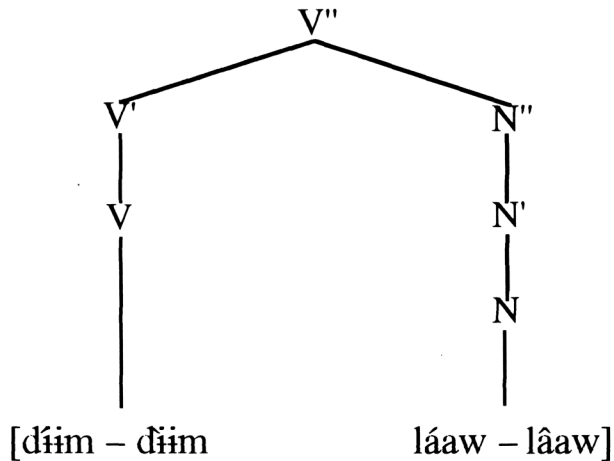   'Daeng does really drink a lot of whisky.'

However, we face a problem with the configuration of the sentence as a result of CR3 of the VP. This is because the base *dɨɨm láaw* does not convey a grammatical meaning; the word *láaw* (with a high tone) does not exist in the lexicon. One way to solve this problem is perhaps to treat *dɨɨm láaw–dɨɨm lâaw* as a single unit in the same way as we treat the reduplicated adjective *kʰîikíat–kʰîikìat* 'very lazy.' Unfortunately, this choice does not work because the VP *dɨɨm lâaw* consists of a verb and an objective noun phrase. This makes its property different from that of a lexical element like *kʰîikìat* 'lazy.' (19c) shows this fact: here V' branches into V and N", not into V only. If we locate *dɨɨm* 'drink' under the V node, we have to allow the rest of this unit to be under N". Clearly, the resulting configuration is awkward and not possible.

To solve this problem, one might want to allow CR3 of each word so that we can keep a reduplicated verb under the V node and a reduplicated noun under the N. Taking this approach we have the configuration shown in (19d).

(19c)

```
                      S
              ┌───────┴────────┐
            N"              ? V"
             │                │
             │               V'
             │          ┌─────┴─────┐
             │          V          N"
             │          │           │
           dæŋ      [ɗɨɨm      láaw – ɗɨɨm  lâaw]
```

(19d)

```
                    V"
          ┌──────────┴──────────┐
         V'                     N"
          │                      │
          V                     N'
          │                      │
          │                     N
          │                      │
    [ɗɨɨm – ɗɨɨm           láaw – lâaw]
```

Unfortunately, this alternative does not work either, because the resulting output is not the string required by CR3. What we need here is to reduplicate the whole phrase, not each lexical element one at a time with the resulting combination of the two reduplicated lexical items forming a new string.

We have so far encountered a problem in that a syntactic configuration does not match an actual string and the required meaning. If the configuration is satisfactory, the resulting string and meaning are incorrect. And if we take the resulting grammatical string and meaning, we find no correct syntactic configuration for them.

For CR3 of a nonlexical unit to configure correctly, we are forced to treat it as a coordinate unit. This may not be a completely satisfactory approach, however, due to the fact that the base of the reduplicated phrase does not contain the full meaning. One may even want to say that the base is not meaningful. Recall that the semantic problem

being discussed comes from the fact that the last word of a phrasal base does not exist in the lexicon due to a tone change in the final syllable of the word.

Shown in (19e) is an alternative configuration in which the base and the reduplicant of the VP *dįim lâaw* are treated as coordinate strings.

(19e)
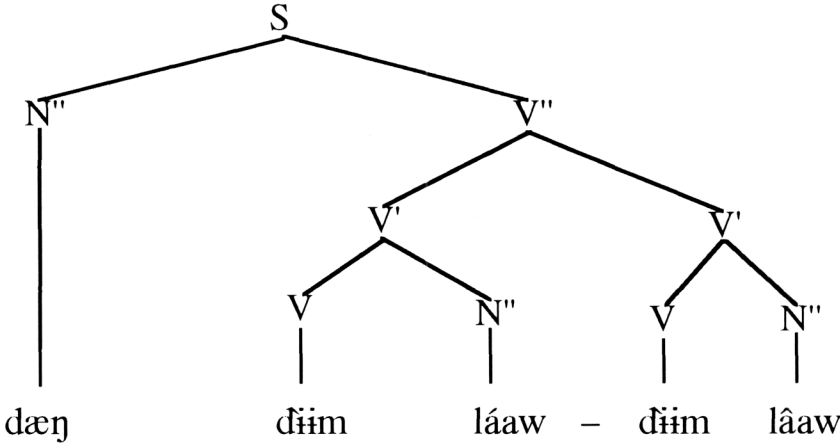
Like the CR3 of the adjective *kʰîikĭat* 'lazy,' there is some change in property of a syntactic category under which a phrasal unit is located. Here the V" node contains the property of Quantifier.

Let us now turn to the CR3 of an entire sentence. As for the CR3 of a VP as discussed above, to obtain the required syntactic configuration, we have to face the semantic problem of the base of a reduplicated sentence. The problem results from the tone change in the final syllable of the last word of the sentence being reduplicated. (20a) shows a sentence comprising two coordinates, the base and the reduplicant.
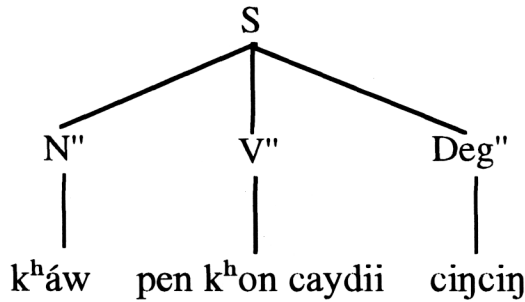
(20a)
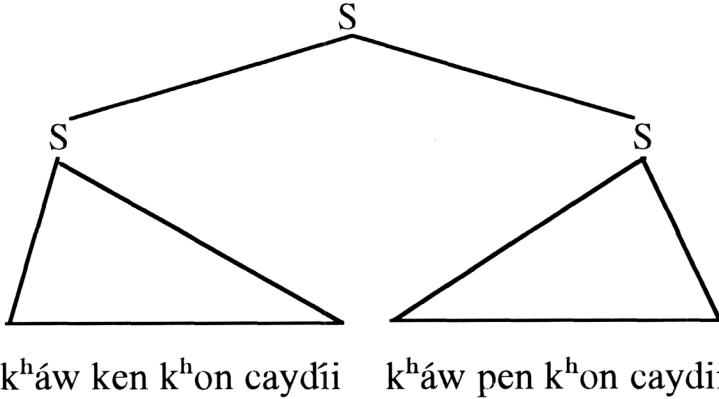
Output: kʰáw pen kʰon caydíi kʰáw pen kʰon caydii
    he   be person —   he   be person kind
    "He is a very kind person, really [emphasis]."
(20a) is an alternative of a regular sentence shown in (20b).

(20b)

$$S$$

N''   V''   Deg''

kʰáw   pen kʰon caydii   ciŋciŋ

Output: kʰáw pen kʰon   caydii ciŋciŋ
        he   be person kind   really
        'He is a kind person, really [emphasis].'

Comparing (20a) with (20b), we find that in addition to the semantic problem of the base S due to the tone change in the syllable *dii* of the word *caydíi* 'kind,' there is a problem with the property of the top S node. Here the syntactic category S contains within it the Degree node which yields the meaning of 'emphasis/intensification.'

The most difficult syntactic problem comes from the CR3 of the sequence of a subject and a transitive verb both of which are under the NP node and the V node, respectively. (21b), *which is a result of CR3 of a sentence in (21a), shows an example of this phenomenon. Here a sequence of a NP subject and a transitive verb, kʰáw kl̀iat* 'he hates,' undergoes CR3, leaving behind a direct object which is clearly part of the verb phrase.

(21a) kʰáw kl̀iat mâak ciŋciŋ lêekʰáʔnít
      he   hate much really mathematics
      'He does really hate mathematics.'

(21b) kʰáw kl̀iat–kʰáw kl̀iat lêekʰáʔnít
      he   —   he   hate mathematics
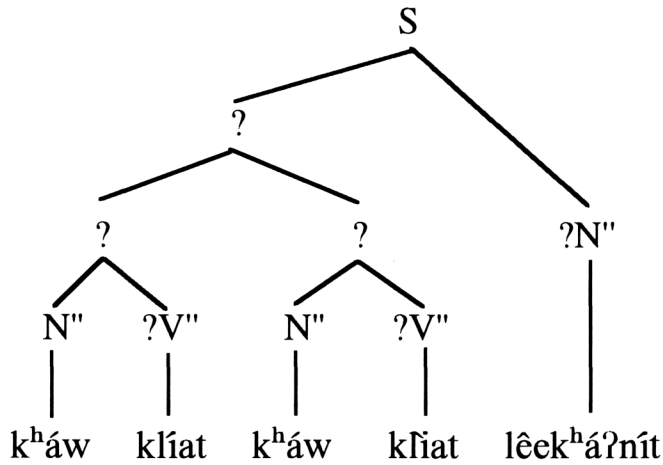   'He really does hate mathematics.'

The CR3 of this puzzling unit raises the following questions: What kind of syntactic category dominates the reduplicated unit? What syntactic category should dominate the object NP node? And last, how can such a sentence, which is grammatical in Thai, be explained by syntactic theories, especially non-transformational ones?

Two choices for the configuration of sentence (21b), which are both problematic, are presented in (21c) and (21d). Neither of them provides a good syntactic description. Here the base and the reduplicant of a sequence of elements undergoing CR3 are treated as coordinate structures.
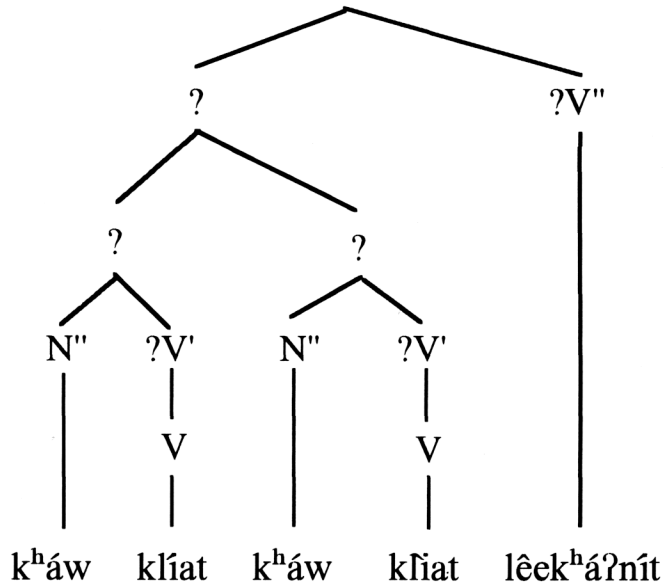
To describe configurations of reduplicated units, I propose that syntactic categories of modifiers such as Degree, Quantifier, or even Adverb be collapsed to combine semantically with syntactic categories they modify. As for a non-lexical unit—a phrase, a clause, a sentence—which undergoes CR1, CR2, or CR3, I would allow a

coordinate structure. In this circumstance, we need to propose a new kind of coordination here.

(21c)

S
? ?N"
? ?
N" ?V" N" ?V"
kʰáw klíat kʰáw klíat lêekʰáʔnít

(21d)

? ?V"
? ?
N" ?V' N" ?V'
V V
kʰáw klíat kʰáw klíat lêekʰáʔnít

As has been shown, it is necessary that the reduplication of a grammatical unit in Thai be allowed to take a coordinate structure as its syntactic configuration. However, this coordination does not yield the meanings of 'or' or 'but,' nor does it yield the direct meaning of 'and.' The examples in (22) show this. (22a) shows CR3 of a verb phrase.

(22a) kʰáw cʰɔ́ɔp dɔɔkmááy–cʰɔ́ɔp dɔɔkmáy ciŋciŋ
     she   like   —   like   flower   really
     'She really does like flowers.'
     ??/* 'She really does like flowers and does like flowers.'

*'She really does like flowers but does like flowers.'
*'She really does like flowers or does like flowers.'

(22b) shows CR1 of a verb phrase.

(22b) kʰáw cʰɔ̀ɔp dɔ̀ɔkmáay–cʰɔ̀ɔp dɔ̀ɔkmə́ə rə̌ə
    she   like   flower   like   —   yes/no Q
'Does she like (something like) flowers?'
*'Does she like flowers and flowers?'
*'Does she like flowers or flowers?'
*'Does she like flowers but flowers?'

(22c) shows CR2 of a noun phrase.

(22c) nákroŋ–nákrian sà?mǎy níi mii kʰuaamcʰîamân sǔuŋ
    ....   student generation this have confidence   high
'Students in this generation have high confidence.'
*'Students and students in this generation have high confidence.'
*'Students or students in this generation have high confidence.'
*'Students but students in this generation have high confidence.'

(22d) shows CR3 of an adjective predicate.

(22d) pʰǒm kʰɔ̌ŋ kʰáw dám–dam
    hair of   she   — black
'Her hair is very black.'
???/*'Her hair is black and black.'
*'Her hair is black or black.'
*'Her hair is black but black.'

Based on the present analysis of reduplication in Thai, I propose the following. (1) To describe a nonlexical unit by configuration, we need another type of coordination—one which does not yield a regular coordinate meaning, but an emphatic or intensifying one. (2) There is a close correlation between the emphatic meaning expressed by reduplication and the syntactic structure. In other words, there is a strong tie between phonology, syntax, semantics, and pragmatics. (3) In reduplication, syntactic categories that function as modifiers are collapsed to combine semantically with those that they modify.

CONCLUSION

This study presents an analysis of reduplication which deals with issues that have heretofore not been discussed. A definition of reduplication is proposed as well as a division of reduplication into two main types: simple reduplication (SR) and complex reduplication (CR). In addition, CR is further divided into three subtypes: CR1, CR2, and CR3. Based on the proposed definition of reduplication, an element in the leftmost position is called a base, and the element adjacent to it on the right is called a reduplicant. Both SR and CR are productive for lexical and non-lexical grammatical units. Because such non-lexical units as phrases and clauses/sentences undergo reduplication in Thai, we are faced with a number of syntactic problems when trying to describe the configurations of such units. One problem involves the syntactic categories of reduplicated units including a base and a reduplicant. Another problem is the semantic characterization of the syntactic category that dominates a base and a reduplicant. The final problem, the most difficult one, concerns the constituency of elements combined together when reduplicated. This phenomenon creates a complicating distortion of various syntactic categories in configuration. Transformationalists might ignore the configuration of the output, leaving the analysis of the phenomena to non-transformationalists. However, the configuration of a syntactic unit is crucial because it should reflect a syntactic category. Another significant issue addressed in this paper is the phenomenon of reduplication involving various types of syntactic units rather than only reduplication of single words with a clear relation of sound and meaning. The reduplication of these syntactic units involves a relation of sound, meaning, and syntax. By dealing with this type of reduplication we can gain a better understanding of the complex linguistic phenomenon of reduplication.

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