RHYTHM IN THAI

Richard B. Noss

1. Emphasis

Everyone knows the distinction between phonetics and phonemics, and everyone is also aware of the distinction between phonology and the rest of grammar, no matter what particular school of linguistics he happens to follow. So we have a common ground for considering rhythm in Thai. But the trouble is that with prosodic, or suprasegmental features such as rhythm, stress, and intonation, it is often difficult for the investigator to keep these distinctions firmly in mind—more difficult than it is, say, in the case of vowel and consonant features. In Thai, there are further distractions provided by features of tone, and of vowel length within the syllable.

One reason that it is difficult to collect phonetic data on prosodic features is that these features tend to be relative rather than absolute, like segmental features. Take the Thai number 5, for example. In a given utterance by a native speaker of Thai, any trained phonetician can tell you whether the vowel in /hâa/* is nasalized or not. Of course there are degrees of nasalization, too, but if the velic is open so much as a fraction of a centimeter, some part of the air-stream will escape through the nose and the phonetician will hear it. But put /hâa/ in an utterance of several syllables, and then ask the phonetician what the duration of that syllable is in relation to the syllables around it, for example in /sɔ̌ɔŋ rɔ́ɔj hâa sìp bàat/ and even the crudest machine can do a better job than most phoneticians.

The analysis of rhythm, for any language, is further complicated by the need to classify, before we are ready to classify—and therefore to get into phonemics before we have sufficient phonetic data. Suppose I have a Thai sentence with syllable lengths measured in centiseconds by a machine, as follows:

sɔ̌ɔŋ	rɔ́ɔj	hâa	sìp	bàat	
.20	.28	.22	.14	.31	(= 1.15)

* For all features of Thai except rhythm and final stops, Haas (1964) phonemic notation is used for the sake of simplicity. The final stops are written /p t k/ to emphasize their normally voiceless character, since this is one of the obstacles to measuring syllable duration.

If I use measurement in centiseconds as a criterion for purposes of collecting data, the distinctions may be fine enough, but I will soon run into trouble of another kind. I may never again find a sentence of five syllables with precisely these syllable lengths, even though I ask my informant to repeat the same sentence over and over again. For example, three repetitions might come out as follows:

sɔ̌ɔŋ	rɔ́ɔj	hâa	sìp	bàat	
.20	.28	.22	.14	.31	(= 1.15)
.29	.35	.26	.18	.42	(= 1.50)
.15	.22	.24	.10	.29	(= 1.00)

Thus it will do no good, if we are interested in collecting data, to make an arbitrary classification based on absolute syllable lengths—e.g. to say that anything under .20 centiseconds is "short," between .20 and .30 is "medium" and anything over .30 is "long." This kind of decision would force us to interpret /sɔ̌ɔŋ/ as sometimes short and sometimes medium, and /rɔ́ɔj/ as sometimes medium and sometimes long. This approach will do us no good, because in fact it is relative syllable length, and not absolute syllable length, that we are interested in.

If we want to collect data on relative syllable length, then we must first define some larger phonetic unit—something larger than a single syllable but smaller than a complete utterance. Abercrombie (1967) has established such a unit for English, which he calls a "foot." Its definition, however, depends on the previous identification of stress levels, and in this sense it is already in the realm of phonemics rather than phonetics. Here is an example:

/ Which	is	the / train	for / Crewe / please ?
(stress)		(stress)	(stress) (stress)

Noss (1964) tried to define a "phonemic phrase" for Thai, by using rhythmic features as a criterion. This kind of unit will not do either as a phonetic unit for the investigation of phonetic features of rhythm in Thai. Example:

khãw khoŋ mãj – dãj – klɛ̂ɛŋ: rɔ̀k-nâ.
"I'm sure they didn't mean to."

It is very difficult, in fact, to find such larger units in any language without depending on other prosodic features such as stress, intonation, terminal junctures, or rhythm itself for this definition. One technique is to bypass the problem by working only with minimal pairs--and this is a technique we have adopted for part of this paper.

But suppose we can identify such a unit in Thai—let's call it a phonetic phrase—and suppose further that our example "250 baht" fits the definition in contexts like /kháw khyyn ŋən phǒm 250 bàat/. The next step would be to compare all the examples of "250 baht," pronounced at different speeds, or tempos, in various contexts and by itself. The result would be a longer table like the one shown below. Then we could work out the percentages of each syllable's duration in terms of the duration of the entire phrase, and we would get figures like those shown at the bottom of the table.

	sɔ̌ɔŋ	rɔ́ɔj	hâa	sìp	bàat	
Absolute :	.20	.28	.22	.14	.31	(= 1.15)
	.29	.35	.26	.18	.42	(= 1.50)
	.15	.22	.24	.10	.29	(= 1.00)

Percentages :

15–19% 22–25% 17–22% 10–12% 27–29%

By comparing the percentages for all kinds of five-syllable phrases (like 250 baht) we might be able to arrive at typical rhythmic patterns for the five-syllable phrase. Similarly, we could establish patterns for phrases of two syllables, three syllables, and up to ten, or however many syllables might occur in a single phonetic phrase.

Notice that we have said nothing here about stress, tone, intonation, or vowel length within the syllable. We have been concerned only with the relative length of entire syllables. The data we have obtained will thus be free of phonemic influence, and we can use it, for example, in studying the relationship of rhythm to stress or vowel length, provided only that we have investigated those things independently as well.

2. Previous Research

Now let's turn to consider what has already been done in the field of rhythm in Thai. Nearly every linguist who has written on Thai phonology has had something to say about stress, and we have a paper by Dr. Udom on this very subject in the present conference. But very few linguists have dealt with rhythm, in the total context of prosodic features. A very good summary of work done in this general field up to 1965 is already available in Panninee (1965), and I need not go into detail here. It would be well, however, to summarize the conclusions of those investigators who have written specifically about rhythm—Panninee, Foongfuang and Sanit among the Thai linguists; Haas and myself among the foreign linguists.

1. Haas (1964), without commenting on the phonemic status of rhythm, recognizes a rhythmic group, consisting of syllables without spacing (juncture) between them and containing at least one stressed syllable. These rhythm groups can be inferred from the transcription used in the Thai-English Students' Dictionary. For example:

   sôm'nii'â? wǎan'dii'
   "These oranges here are nice and sweet."

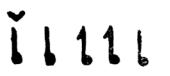
2. Foongfuang (1960) agrees in general with the position of Haas. She concludes tentatively (p. 57) that "there is some sort of rhythm or juncture which results in the grouping of syllables into larger units."

3. Panninee (1965, p. 80) concludes that rhythm in Thai is predictable, being determined by stress and terminal contour phonemes; hence rhythm itself is not phonemic.

4. In Noss (1954) and later (1964), I took just the opposite position, claiming that although both stress and rhythm had to be considered phonemic because of certain minimal pairs, a morphophonemic solution could be devised that would write only extra-heavy stress, other stresses being predictable from the rhythmic pattern.

5. Sanit (1955) is the only writer I know of who provides actual phonetic data on Thai rhythm. Sanit uses a musical notation, which is illustrated below, to analyze the rhythmic characteristics of groups of two to five syllables. He also marks stress for each syllable. The crotchet with ictus denotes the syllable with heaviest stress in each stress-group.


ˈdi: ˈˈcaj ˈmáj
"Are you pleased?"


ˈwìŋ ˌsíə ˌcon ˈmŏt ˈˈrɛ:ŋ
"I ran until I was exhausted."

While Sanit used his own intuition, rather than instruments, to determine relative syllable duration, it is remarkable how closely his examples come to the ideal model for rhythmic analysis described at the beginning of this paper.

As far as the relationship between stress and rhythm is concerned, he concludes that (p. 20) although there is some instrumental evidence of correlation between degree of stress and relative duration of syllables, the deciding factor in determining stress must still be what is "felt" or "heard" by the native speaker of Thai.