This report discusses the stress patterns of Bengali as spoken in Bangladesh. One of the findings indicate that every word has stress in the first syllable, with additional stress in the first syllable of the first word of the phrase. The Bengali language does not have penultimate and antepenultimate stress. Because there is no rule for changing the stress position or pattern, extrametricality is not required. Further, all verbs end with a vowel, suggesting lack of quantity sensitivity. (MSE)
STRESS IN BANGLADESHI BENGOLI

BY

SAMSUL ALAM
In Bangladesh, where I was born, and in some parts of India, about two hundred million inhabitants speak, read and write in Bengoli. It is their language of communication.

Since I was born and raised in Bangladesh, I do not have any difficulties to speak, read and write the language. All of my family members speak this language too, even though some of them have been living in English speaking countries, including the U.S.A.

Bengoli is from the Indo-European family. In my opinion, most Americans do not even know about the existence of Bengoli language. Bengoli is one of the "neglected" languages of the world, and it has not much research done on it especially "Bangladeshi Bengoli". There is a significant difference between Bangladeshi Bengoli and Indian (Calcutta area) Bengoli.
Yet surprisingly, recent statistics have shown that the Bengoli language is the seventh largest spoken language in the world (this information was gleaned from a book in Professor Bickmore's office.)

INTRODUCTION

All of the data, thoughts, ideas and opinions about this paper are my own, however, Professor Lee Bickmore initiated this project by encouraging me to do research on the Bengoli language. He also helped me from time to time when I felt I could not proceed anymore in this project.

Although there are many different dialects within the Bengoli language, I will establish my data from Bangladeshi Bengoli, specifically spoken within the capital district of Bangladesh.

It can be argued that Bengli is a tone language intonationally in some dimensions. However, the most part of the language occupied stress.

I have chosen the data very carefully and have presented them as they are pronounced. I tried to provide the actual phonetic transcription. The data I have established for this paper are most of it is present tense verbs and it seems to me tone is absent in the present tense verb.

My goal of this project is to analysis the Bengoli language stress pattern. Although I tried not to change the
structure, in order to keep them in a pattern sometimes I was forced to make minor changes.

I will show that the Bengoli verbs have primary stress in the first syllable and an additional stress in the phrase level. All the syllables are unbounded and left headed. There is no penultimate or antepenultimate in Bengoli language. There is no quantity sensitivity and extrametricality.

THEORETICAL ASSUMPTIONS

Since, I am not a phonetician yet and I have generated the data on my own, there is a chance incorrect phonetic notation in my data. Further, there is also lack of character (symbols) in the key board. The transcription of phonetic notation used here is based on followings:

<table>
<thead>
<tr>
<th>IPA</th>
<th>ORTHOGRAPHY</th>
</tr>
</thead>
<tbody>
<tr>
<td>ɣ</td>
<td>ch</td>
</tr>
<tr>
<td>ɣ</td>
<td>sh</td>
</tr>
<tr>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>k-h</td>
<td>aspiration</td>
</tr>
<tr>
<td>t &amp; d</td>
<td>alv-dental sound</td>
</tr>
<tr>
<td>t &amp; d</td>
<td>alveolar sound</td>
</tr>
<tr>
<td>ḍ</td>
<td>retroflex with alveolar sound</td>
</tr>
</tbody>
</table>
The first task is to establish the data, then determine the location of stress, and then I will analysis the data. I will start with monosyllabic words and then increase the syllable in order to substantiate my hypotheses.

Let's start with the question, "what is stress?" "...stress is an abstract phonological category of prominence whose presence is signaled through other features. Stress is a property of vowels or more generally of syllables" (Kenstowicz 48). From this definition, it is clear that a syllable or property of vowels produces the maximum sound for any word. In other words, the syllable is the most important unit to consider in order to actually HAVE a word. It is impossible to pronounce a word without a syllable (exception are rare) in the Bengoli language.

The question is, "how, can stress patterns be analyzed? Liberman's (1975) The Metrical Grid Theory is relevant in order to analyze the Bengoli language. I am going to use "The Metrical Grid Theory" in order to analysis the stress pattern of Bengoli language.

Professor Bickmore uses the following symbol "6" as the grid level. Every syllable of a word is at 0-level or grid level, immediate line above it is called "foot level" then the line above is called "word level" and the line above is called the "phrase level." I am going to use same symbol as Prof. Bickmore used.
According to Michael Kenstowicz, "... the metrical grid permits many of the long distance features of stress to be assimilated to the more familiar, local kind of relation that we have come to expect of linguistic structure." (Ibid. P 554). Therefore, the possible types of Bengoli syllables would be CV, CVCV, CCVCVCV, CVCCVCV etc.

SYLLABLE STRUCTURE

At the beginning of my research, I thought that all Bengoli morphemes have stress in the first syllable of the morpheme. While two morpheme together produce a compound word, I found that the first morpheme gets maximum stress and second morpheme get weaker stress. Later, I found that this is not true.

In my data, most of the verbs contains two words. Phonologically, especially, four, five and six syllable words are two words. Bengoli speakers or writers might consider they are single word, because they are verb and cannot be separate. I think officially both are correct.

In fact, all the word get an stress in the first syllable of the word. In phrase level, first word of the phrase get and additional stress. Lets start with mono syllabic word. Here are the some example:
In the data, we can observe that all the mono syllabic words are not verbs and they have CVC syllables. There are possibilities of quantity sensitivity but my paper will not concentrate on noun. If we add all these words with other pronoun, then we will find as follows. Their patterns and derivation will look like:

<table>
<thead>
<tr>
<th>Phrase level</th>
<th>Word level</th>
<th>Grid level</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. ma</td>
<td>8. pa</td>
<td>9. kor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. ámar ma</th>
<th>'my mother'</th>
</tr>
</thead>
<tbody>
<tr>
<td>'my mother'</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. tomar pa</th>
<th>'your leg'</th>
</tr>
</thead>
<tbody>
<tr>
<td>'your leg'</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. jómir kor</th>
<th>'land tax'</th>
</tr>
</thead>
<tbody>
<tr>
<td>'land tax'</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. tomar nam ke</th>
<th>'what is your name'</th>
</tr>
</thead>
<tbody>
<tr>
<td>'what is your name'</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14. taher shada dat</th>
<th>'his white teeth'</th>
</tr>
</thead>
<tbody>
<tr>
<td>'his white teeth'</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. taher shondor bór</th>
<th>'her handsome husband'</th>
</tr>
</thead>
<tbody>
<tr>
<td>'her handsome husband'</td>
<td></td>
</tr>
</tbody>
</table>
phrase level ⬜
word level ⬜ ⬜ ⬜ ⬜
grid level ⬜ ⬜ ⬜ ⬜ ⬜

15a. tāher shōndor bor ‘her handsome husband’

The strongest stress of the phrase is on the first syllable of the first word and a weaker stress (secondary stress) is on the initial syllable of each other word. Therefore, stress patterns could be rhythmic as the phrase contains three or above words. This also justifies that phrasal stress is: left headed and unbounded. But, I would not discuss rhythmic patterns in this paper. Further, I am not sure until I test all my data.

TWO SYLLABLE WORDS

16. jáwa ( 珺 ) 'go'
17. asha ( ṡقاعدة) 'come'
18. dewa ( 珺 ) 'give'
19. hōwa ( ṡruby ) 'be'
20. thaka ( ṡruby ) 'stay'
21. lōwa ( ṡruby ) 'take'
22. dōba ( ṡruby ) 'dive'
23. pōra ( ṡruby ) 'fall'
24. kháwa ( ṡruby ) 'eat'
25. nóra ( ṡruby ) 'move'
From the above data I can conclude that two syllable words follow a general pattern in which contain the primary stress on the first syllable. Stress is left headed. By using the grid theory the patterns looks like:

word level  \( \times \)  \( \times \)  
foot level  \( \times \)  \( \times \)  
grid level  \( \sigma \)  \( \sigma \)  \( \sigma \)  \( \sigma \)  

26. jawa  27. asha

At this point, I really can't conclude metrical parameters however, for two syllable words, I can say that there are two syllable in the foot level which might call binary feet. Feet are left headed. Therefore, metrical parameters could be like this:

FOOT LEVEL:
1. Headedness: Left headed
2. Boundedness: Unbounded
4. Extrametricality: Don't know \( \gamma \)
5. Quantity Sensitivity: Not sure yet
THREE SYLLABLE WORDS

TYPE: A

28. pathano (p a t a n o ) 'to send'
29. χαπανο (χυρπανε) 'to publish'
30. χάλανο (χαλάνα) 'to drive'
31. dekhano (δεχανα) 'to show'
32. kapano (καπανα) 'to shake'

TYPE: B

33. kazikora (καζικορα) 'to work'
34. pankora (πανκορα) 'to drink'
35.накикора (νακικορα) 'to dance'

There are two types of words contain in three syllable Bengali verbs. In the above three syllable words have similar patterns as mono-syllabic and two syllable words, which contains primary stress in first syllable of the words with few exceptions. It is obvious that feet are left headed and further data will also confirm that.

Perhaps, there are compound words in the three syllable verbs as we can see in "TYPE: B"(exampe 33 to 35). That may also consider a small phrase, because suffix can be a separate word. It seems to me secondary stress hard to hear in three syllable verbs. But I am sure there is a stress in "TYPE: B". It is still not clear at this point. As I proceed to four syllable words I will perhaps clearer or I have to drive on further. At this point, I still don't want to mentioned the
exceptional words but Bengoli verbs are unbounded and the metrical structure of \( \overline{VVV} \) words looks like:

phrase level
word level \( \chi \)
foot level \( \chi \)
grid level \( \sigma \sigma \sigma \)

36. p\'t\'ano 37. k\'az\'k\'ora

However, if we accept the position and allow for unbounded constituents and left headed, then analyzing four, five, six syllable words will be easier. Therefore, the possible metrical parameters for three syllable words look like this:

FOOT LEVEL: WORD LEVEL:
1. Headedness: Left headed 1. Left headed
2. Boundedness: Unbounded 2. Unbounded
3. Extrametricality: No 3. No
4. Quantity Sensitivity: No 4. No

In order to show beginning of the word get a stress, I will generate word contains monosyllabic suffixes and compare them with mono syllabic words.
Since, all monosyllabic suffixes does not get any stress, than we can say they are only one single word phonologically. Further, 'ba', 'ta' cannot be a separate word and without 'ba', 'ta' the verbs are meaningless. But in "TYPE:B" of three syllable words without suffixes "kora" verb changed into noun and can be a meaningful word. So, phonologically, they are separate word and two word produce a small phrase.

FOUR/FIVE & SIX SYLLABLE WORDS

46. grōhonkora (গ্রোহনকোরা) 'to receive'
47. prōsopolkora (প্রোসোপকোরা) 'give birth to'
48. choutrakora (চৌট্রকোরা) 'to make broad'
49. jatnoslowa (জাতনোশলো) 'take care of'
50. shābdanhowa (শব্দানহও) 'watch from danger'
51. nōromhowa (নোরোমহও) 'become soft'
52. chomokdewa (চোমোকদেও) 'to glint'
53. prōsroydewa (প্রোস্রোয়েদেও) 'to gratify'
54. borditokora (বোর্ডিতোকোরা) 'to increase'
55. shahiju kora (শাহিজু কোরা) 'to help'
56. njoktokora (ন্যোক্তোকোরা) 'to employ'
57. bistretohowa (বিষ্ট্রেতোহও) 'be wide'
All these four, five and six syllable words/phrase are made out of two words. All of them have primary stress in the first syllable of the first word and secondary stress in first syllable of the second word. Well! I could be wrong because I haven't practice (for a long time) speaking with the native Bengoli speakers. But the metrical grid structure of some data looks like:

phrase level  
word level  
grid level  

70. grohon kora
At these point I came to Dr. Bickmore and I tried to find out the exact location of the stress. While, I was pronouncing five and six syllable words, he thought that the intonational fluctuation at the right edge of word was probably due to intonational melody instead of secondary stress. Perhaps, he is right. Perhaps, according to him, the following words/phrase containing stress might looks:

73. grōhon#kōra
    'to receive'

74. prōshop#kōra
    'to give birth'
If I put them in a phrase and draw their derivation, then they may looks like this:

<table>
<thead>
<tr>
<th>Phrase level</th>
<th>Word level</th>
<th>Grid level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

75. *tahir grohon kora*  
'his receiving'

<table>
<thead>
<tr>
<th>Phrase level</th>
<th>Word level</th>
<th>Grid level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

76. *pur shuttle kor kothin*  
'giving birth is hard'

These also confirm me that on the word level, each word get a stress on the first syllable of the word. At the moment, I am 100% sure that on the word level, every word gets stress in the first syllable. Now, I am nearly close to conclude final metrical parameters for all Bengoli verbs.

After examining the stress pattern of the above phrases, In Bengoli verbs each word gets a stress in foot level and word level. The first syllable of the first word gets an additional stress in the phrase level.

Since, there is only one stress in every word and unbounded feet locates at the initial syllable of the words. At this point, it is whole lot better shape than I was suffering. That is, now I am going to discuss penultimate, antepenultimate stress patterns, quantity sensitivity, then final hypothesis and conclusion.
PENULTIMATE/ANTEPENULTIMATE

In my analysis, all two syllable words have penultimate stress, and also sometimes the three, four, five, and six syllable phrases contain penultimate stress if only phrase consider as a word. But, three syllable words also have antepenultimate stress. As an example:

78. jāwa 'go'
79. pātano 'send'
80. sāpano#ta 'in printing'
81. grōhono#kora 'to receive'
82. bōrditoko#kora 'to increase'
83. utsahetokora 'to encourage'

The question is how to prove that penultimate or antepenultimate stress does not exist in Bengoli verbs. Previously, I established that first syllable of all Bengoli verbs get a stress. It is also obvious form the above data example 79, there is no stress on "tan" of the word "patano" in order to be penultimate stress and there is no stress on "pan" on example 80, in order to be antepenultimate stress, then my conclusion is the penultimate and antepenultimate stress patterns are absent in Bengoli verbs.
A native Bengoli speaker may argue that all the verbs contain kora, howa, jowa, etc. etc. and they are suffix of the word. Because, they are segment of verb and cannot be separate. Even though, they are separate words phonologically. The argument still will not establish any new hypothesis for antepenultimate or penultimate stress. If example 46 is consider as a single word, then it will look like this:

84. gr0honk0ra 'to receive'

In this case stress is only on first syllable of the word. Even though, it is not true phonologically. But still it is far way from even antepenultimate stress.

QUANTITY SENSITIVITY

Previously, I have shown example 33 through 35, that without suffixes all the word changes into nouns instead of verb. Even, a phrase containing two words then first syllable of each word gets an stress in foot level and first syllable of first word gets an additional stress in phrase level. So, quantity sensitivity might exist in Bengoli nouns. But in the following example also evident that quantity sensitivity is not present in noun either.
Here, if quantity sensitivity is present then stress should appear on 'mök' instead of 'țo.'

From all these observations, it is also clear that there is no extrametricality in Bengoli language because there is no rule require in order to changes the stress pattern. Within the data, I have shown that Bengoli verbs have straight cut pattern (all the words have stress beginning of the word).

Therefore, I can confirm the metrical parameters for Bengoli(verb) language and I have come up with the following hypothesis.

HYPOTHESIS 1: In all level Bengoli verbs are "left headed"
HYPOTHESIS 2: Syllables are unbounded, Since unbounded, therefore directionality is not required.
HYPOTHESIS 3: Penultimate/antepenultimate stress is absent in Bengoli verbs.
HYPOTHESIS 4: Extamticality and Quantity Sensitivity and absent in Bengoli verbs.
CONCLUSION

In conclusion, although beginning of the paper shows different direction, but I did not have any difficulties in order to reach the final decision. That is, in Bengoli language every word has a stress in the first syllable of the word and addition stress in the first word of the first syllable of the phrase. My analysis also conclude that Bengoli language does not have penultimate or antepenultimate stress. Since, there is no rule apply for changing the stress position or pattern, obviously, extrametricaly is not require. Further, all the verb ended with vowel, that tells me that quantity sensitivity is also absent.

Since, I did not prove that the existence of quantity sensitivity in noun, that might be interesting in addition to my research. I also think that on historical grammar, borrowing and relationship with other Indo-European family will be nice topic to research. Further research might establish new ideas and I am looking forward to do so.
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