The Tibetan Vowel Feature 'Constricted'

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The purpose of this paper is to argue in favor of the employment of the vowel feature Constricted in the description of spoken Tibetan (phööqεε).¹ This feature has been discussed previously in the literature in terms of the position of the root of the tongue in relation to the size of the pharynx, within the context of vowel harmony processes that occur in many Niger-Congo languages of West Africa and Nilo-Saharan languages of East Africa.

The Tibetan vowels are given below, classified according to the features High, Back, and Round.

<table>
<thead>
<tr>
<th>-Back</th>
<th>+Back</th>
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<tbody>
<tr>
<td>-Round</td>
<td>+Round</td>
</tr>
<tr>
<td>i</td>
<td>ü</td>
</tr>
<tr>
<td>I</td>
<td>(ø)</td>
</tr>
<tr>
<td>e</td>
<td>ö</td>
</tr>
<tr>
<td>ε</td>
<td>a</td>
</tr>
</tbody>
</table>

At issue here is the question: which feature best specifies the contrast between the vowels of Set A, and the vowels of Set B, which are generally lower and more central than the Set A vowels:
TIBETAN: Set A: i e u o 
Set B: I ë U ë

Also to be answered is the question of how the four remaining Tibetan vowels, ù, ë, æ, and ø, are defined in relation to this feature.

Two types of explanations or features have traditionally been offered to account for the contrast between the Set A and Set B vowels. One explanation is the tense/lax distinction. The other explanation is a multi-valued height specification, where the vowels, i, I, e, and e, for example, would differ only in terms of height and not in terms of any additional feature, such as tenseness. It will be demonstrated that neither of these two explanations gives a satisfactory account of the patterning of Tibetan vowels, but rather that a third explanation or feature is the only viable solution.

The basis of this third explanation was first outlined by Stewart (1967), who proposed that the advancement of the root of the tongue was the articulator gesture that accounted for the vowel harmony alternation in Akan, a West African language. He noted that in Akan, the vowels of Set 1 patterned as what he called the 'raised' alternates of Set 2:

AKAN: Set 1: i e a o u²
Set 2: I ë a ë U
Ladefoged (1964) had used the term 'tenseness' to describe the vowels of Set 1. However, Stewart hesitated to apply the tense/lax distinction to Akan, because the Set 2 vowels, he stated: '... particularly the high ones I and U, have often struck me as choked or even strangled' (1967:196). Stewart referred to the literature that he consulted on vowel tenseness as 'singularly unilluminating,' with the exception of Hockett's reference to the 'bunching and tension in the muscles . . . above and in front of the glottis within the frame of the lower jaw' (1958:78-79).

Stewart reproduced Ladefoged's cineradiographic film showing the tongue positions for one set of Igbo vowels, indicating that the position of the back or base of the tongue for one set of vowels was consistently positioned further back than the other set. Stewart discounted the tense/lax explanation for Akan vowels, and maintained that the vowels of Set 1 were associated with 'an advancement of the root of the tongue, as well as a wide pharynx' (1967:199). Stewart therefore introduced the notion that more than just the body of the tongue was relevant in determining the perceived height of a vowel. The importance of tongue body position was a basic implicit assumption behind the tense/lax explanation for vowel contrast, as well as the multi-valued height explanation.

Regarding the advancement of the tongue root in Akan, Clements (1980) subsequently noted:
This distinction can be confirmed visually by observing an Akan speaker in profile. The advancing of the tongue root produces a noticeable protrusion at the angle of the throat and upper neck in each case.

Following Stewart, Halle and Stevens (1969) proposed that the position of the base of the tongue be considered the articulatory gesture for the binary feature Advanced Tongue Root (ATR). Other terms used have been Covered (Chomsky and Halle 1968:314), or simply, Advanced (Clements 1980).

Lindau (1978) elaborated on Stewart's account of Akan vowels. Lindau's superimposed tracings from cineradiographic recordings of eight Akan vowels are reproduced on the following page. With reference to these tracings, she stated:

The tongue-root mechanism is usually combined with vertical displacements of the larynx, and sometimes with movements of the back pharyngeal wall. It thus seems that what a speaker tries to accomplish is variation of the pharyngeal size. (551)