ASPECTS OF KISWAHILI STRESS

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Stress in KIswahili is typically penultimate.[1] The only examples of non-penultimate stress are found in loanwords usually of Arabic or Persian origin. Even if the stress of the original form was penultimate, it often shifts due to the breaking up of certain non-Bantu consonant clusters within the form by the historical addition of epenthetic vowels or the addition of a final vowel to maintain the canonical form of the open syllable. In most of these forms, there is variation between penultimate and non-penultimate stress. Constraints on this variation would have to be stated in sociolinguistic terms. There are very few minimal pairs which demonstrate contrastive stress.

We will begin by considering three separate analyses of Kiswahili stress: Harris (1951); DeLany (1967) and Polome (1967). In Harris' analysis, a stress phoneme is not required. "Non-Ø stress occurs on the penultimate syllable of every utterance and on various other syllabics but never on two successive syllabics." He breaks down the utterance into successive parts so that each of these parts (i.e. words) will have penultimate stress. He then places # (a word boundary) directly after the vowel following the stressed vowel. Stress therefore becomes dependent on phonemic word juncture. For Harris, this eliminates the problem of whether to assign a C following V# to the next word since, by definition, it must be.

Harris sees a potential problem of phonemic over-lapping where no such problem exists. He claims that in a cluster $V_1V_2V_3$ where V_2 is /i/ or /u/, stress will fall on V_1. He posits both [i] and [y] as allophones of /i/, and [u] and [w] as allophones of /u/. Therefore, in a cluster of this type where V_2 is either /i/ or /u/, /i/ is realized phonetically as [y] and /u/ as [w]. His claim here that [y] and [w] are not phonemic is inaccurate. Minimal and near minimal pairs exist which show a contrast between the two, e.g., kúwa 'to be', kuúa 'to kill' or, with identical stress patterns, walímu 'teachers', ualímu 'teaching profession'.

DeLany (1967) claims that stress is not phonemic but rather "dynamic" although the latter term is never defined. Three degrees of stress are set up: primary ($\acute{\tilde{V}}$), tertiary ($\tilde{V}$) and weak (or $\emptyset$ stress). However, since stress, like tone, is internally relative and since there is no stress between what is called "primary" and "tertiary", the term "tertiary" is misleading except perhaps insofar as the study was intended as a constrastive analysis of Kiswahili and North American English. Primary stress occurs on the penultimate syllable, e.g. nyúmba 'house', nyumbáni 'in the house'; alitengenéza 'he repaired', alimtengenezéa 'he repaired for him', etc. "Irregularities in the accepted stress pattern i.e. non-penultimate stress occur in a few isolated cases most of which are words of foreign origin," e.g., lázima 'necessity', gháfula 'suddenness', amérika 'America', áfrika 'Africa'. DeLany fails to point out, however, that many of these forms have been quite well assimilated into the language; most of his examples are forms in which penultimate stress varies freely with non-penultimate stress.

The minimal pair barabára 'highway', barábara 'exactly' are cited but DeLany simply states that these "may appear to contradict a previous statement that stress is not phonemic." This also partially contradicts what he claims earlier since both forms are loanwords. barábara is probably Persian in origin and barabára a doubled form of Arabic bar.

DeLany's statement that these forms have not been completely assimilated must therefore be modified; furthermore, forms of this type often demonstrate different levels of assimilation. Some retain a final consonant or consonant cluster, e.g. sim

'telephone' (from the Persian) but varying with its assimilated counterpart, e.g., sīmu. Others already had the final open syllable in the original form. That is, a loanword may drop a vowel or consonant or a combination of the two depending upon its shape in the original language. For example, a loanword with the shape CVCVCV may also have the shapes CVCCV or CVCVC. Cases where the final vowel is dropped are more common among speakers of Arabic. This levelling is further supported by the fact that in some forms stress is invariable, e.g., itália 'Italy'. In a few cases, the variation occurs infrequently, e.g. afrika 'Africa' but occasionally áfrika. Most, however, have a more flexible variation in stress, a fact which DeLany never mentions, e.g., lázima~ lazíma 'necessity'; kadhálika~ kadhalíka 'likewise' where the second form of each pair shows characteristic penultimate stress.

Polomé (1967) agrees with the analysis of non-penultimate stress in the case of certain Arabic loans but does not mention loanwords from other languages, many of which have penultimate stress. For example, the English borrowings buráshi 'brush' and bulangéti 'blanket' both contain an epenthetic vowel inserted to break up the initial clusters of br and bl respectively, although the variant blankéti also occurs in certain dialects. Notice, however, that stress could have followed that of the original English form, i.e. *bulángeti or *blánketi but does not, although one would suspect that at some earlier stage of the language, the stress varied for a while and finally shifted. Polome claims that the pair barabára 'highway', barábara 'exactly' (as above) proves that stress is phonemic. Furthermore, he perceptively notices another apparent example of contrastive stress in the pair watáka#kázi 'they want work', wataka#kazi, 'those looking for a job', the latter being a reduced form of the relative construction, i.e. 'those who want work'. This latter stress alternation, however, is predictable on grammatical grounds defined by different underlying phrase-markers in much the same way as Adj-Noun and Noun-Noun pairs are predictable in English, e.g., blue jeans vs. blúe jeàns.

For descriptive purposes, we can divide loanwords up into four major types: Type 1: Those with penultimate stress, e.g., barabára 'highway'; Type 2: Those in which stress varies stylistically from pre-penultimate to penultimate, e.g. kadhálika ~ kadhalíka 'likewise';

Type 3: Those in which an epenthetic vowel has been inserted into the loanword and where stress is penultimate in both assimilated and unassimilated variants, e.g., heshíma ⁓ héshma 'honor'; Type 4: Those in which the stress is pre-penultimate, e.g., barábara 'exactly'.

The minimal pair which has been traditionally cited as demonstrating contrastive stress turns out to contain one form of Type 1 and the other of Type 4. Both are historical loanwords; the form with non-penultimate stress has a variant form with penultimate stress where the latter has a slightly modified syllabic structure, e.g., barábara has variants such as barábar, baraba or even barábr.

Given the stress patterns of Kiswahili as described above, a set of rules can be established which, inter alia, account for stress placement and stress reduction. Each syllable is assigned primary stress and, by a subsequent reduction rule, all stresses except that of the penultimate syllable are reduced. Equivalently, if our only concern were with the assignment of penultimate stress and no other, we can simplify the phonology and still correctly assign stress by using as a structural index the syllabic structure of the form. Primary stress would automatically be assigned to the penultimate syllable using the final word boundary as reference. Also needed would be a rule deleting a medial (or final) vowel for those dialects which have either variant forms or only the unassimilated loan similar to the original form. This by itself is insufficient, however, since there would still be no way of predicting stress on those forms with non-penultimate stress, e.g. kadhálika 'likewise', amérika 'America', etc. Nor would there be any way of correctly assigning stress to the small set of minimal pairs like barabára 'highway' vs. barábara 'exactly'.

There is a way, however, in which even these patterns can be handled in a neat and relatively simple way. We must first draw the distinction between a historical loanword (i.e. a form which has come into Kiswahili from another language) and a phonological loan-word (i.e., a word which can be formally defined as un-assimilated, in this case one with non-penultimate stress). A phonological loanword is, by definition, a historical loanword but the converse is not necessarily the case.

We can now divide the lexicon into two major sets:

Set I: Those formatives which have penultimate stress and are unmarked in the lexicon. A set of Kiswahili stress rules can be easily formulated to account for the canonical penultimate stress.

Set II: Those formatives which have non-penultimate (i.e. pre-penultimate) stress and are marked in the lexicon with some feature [F] indicating a phonological loanword such that normal Bantu stress rules must be supplemented with an additional rule which moves the stress to the preceding syllable.

A subset of Set II would include those formatives which have variable phonetic outputs of (a) normal penultimate stress, and (b) pre-penultimate stress which must be marked by [(F)] indicating that the rule is variable and applies or not according to the speaker, the style and even the speech situation.

Allowing for the feature [F] as a feature of certain formatives in the lexicon, we need four phonological rules to correctly assign stress to all forms: (1) Stress Place-ment which assigns primary stress to each syllable. Such a rule is necessitated within a more complete phonology since our theory must adequately describe various degrees of non-primary stress; (2) Vowel Deletion which deletes the vowel of the penultimate syllable variably along dimentions of style, education, speaking speed and the like. This would provide, for example for a more "Arabicized" pronunciation. Thus, the form heshíma 'honor' is alternately heard as héshma; warídi 'pink' as wárdi', and so on. There is a related rule (not described here) in which a final vowel may be deleted along the same lines as the deletion of the penultimate one, e.g., símu 'telephone' is sometimes realized as sím; lázima 'necessity' as lázm; (3) Stress Reduction which reduces all stresses except of the penultimate syllable, e.g., barabára 'highway'; kadhalíka 'likewise' and son on. Rule (3) like Rule (1) is neces-sitated only if describing non-primary stress as well; (4) Stress Shift which allows the primary stress to shift to the preceding (i.e. pre-penultimate) syllable. This rule is triggered by the presence of the feature [F] of the formative and marks the form as a loanword. Note, however, that the feature is obligatory in some forms and optional in others, e.g. kadhalíka 'likewise', afríka 'Africa' can

also be realized as kadhálika, áfrika, but <u>barábara</u> 'exactly', <u>amérika</u> 'America' only as such.

The following shows how these rules can be applied to various types of formatives:

RULE	TYPE 1	TYPE 2 [(F)]	TYPE 3	TYPE 4 [F]
STRESS PLACEMENT	barabara 'highway'	kadhalika 'likewise'	heshima 'honor'	barabara 'exactly'
VOWEL DELETION	------	------	heshma	------
STRESS REDUCTION	barabara	kadhalika	heshma	barabara
STRESS SHIFT	------	kadhalika	------	barabara

It could be argued that the actual historical processes which create this variability in Swahili stress patterns proceded in the opposite direction. That is, forms like Kiswahili heshíma 'honor' are really assimilated from the Arabic, i.e. something akin to héshma, and not the other way around. Why then do we need rules such as vowel (and perhaps syllable) deletion to get back to the more Arabicized pronunciation?

There are two reasons for this directionality: (1) There would be no way of predicting which vowel would be inserted in the assimilated form. Certain patterns do emerge under careful scrutiny, e.g., the vowel is often /i/ as in warídi 'pink' (Ar. wárdi); lazíma 'necessity' (Ar. lázm), and so on but we also find epenthetic /u/ as in buráshi 'brush', bulangéti 'blanket' and /a/ as in barabára 'highway; (2) Directionality of phonological rules should not necessarily be predicted on historical direction since we are describing Kiswahili, not English or Arabic. Thus, it is the Kiswahili form which is basic and the alien forms which must be described in terms of the former. While a certain percentage of Kiswahili speakers do have a more Arabicized pronunciation of certain forms, most do not. This is precisely why the distinction between the historical and the phonological loanword is crucial.

It may also turn out, in an analysis ranging over the thousands of loanwords in Kiswahili, that stress is connected with grammatical class in a way not previously realized. For example, there seems to be a tendency for nouns to become assimilated in terms of stress before adjectives, adverbs and place names. If this could be quantitatively defined as a strong tendency, it would have important theoretical implications for the analysis of loanwords in other languages.

Clearly, the analysis of Kiswahili stress outlined above would be slightly more complicated were we to describe the assignment of non-primary degrees of stress as well. However, our purpose here has been simply to demonstrate that there is a systemicity to stress which has been ambiguously handled in the past. And although we have concentrated primarily on specific stress-assignment rules, it seems clear that any reasonable theory of phonology must take into account not only the formal mechanics of rule application but also dialect differentiation and social variance. While this has been done to a certain extent in the past, it remains for future research to incorporate such data into a workable theory of phonology.

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