A lexical treatment for stem markers in Swahili[*]

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1. Introduction

In this paper I discuss the distribution of the so-called stem marker *-ku-* in Swahili, which is found with some, mostly monosyllabic verbs when used with certain tense morphemes. After introducing the data, I show that there are three potential analyses to explain the data, which I discuss in turn. Two of these analyses are phonological in nature and relate the distribution of *-ku-* to stress assignment. The first stress related analysis, which I call the 'prevent-stress' rule is popular in textbooks and teaching manuals of Swahili (e.g. Ashton 1944, Russell 1996, Maw 1999), but turns out to be wrong. According to the second, more satisfactory stress rule, first proposed by Meinhof (1910a, 1910b, 1933), *-ku-* is deleted throughout except in stressed syllables and before vowels. While this analysis provides a sufficient diachronic account of the distribution of *-ku-*, I provide an alternative synchronic analysis, according to which the distribution of *-ku-* results from a number of alternative lexical entries for the relevant verbs.

2. Monosyllabic verbs and the stem marker **-ku-**

A number of verbs in Swahili, usually referred to as 'monosyllabic', require the insertion of an 'empty morpheme' *-ku-* with certain tenses. For example, the monosyllabic verb *-ja*, 'come', takes *-ku-* with the perfect tense *-me-* (1), but not with the situational tense *-ki-* (2). In contrast, the non-monosyllabic verb *-soma*, 'read' never takes *-ku-*:

(1) *a-me-ku-j-a*
SCD1-PERF-ku-come-FV
'S/he has come'

(2) *a-ki-j-a*
SCD1-SITU-come-FV
'If s/he comes'

(3) *a-me-som-a*
SCD1-PERF-read-FV
'S/he has read'

(4) *a-ki-som-a*
SCD1-SITU-read-FV
'If s/he comes'

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The morpheme *-ku-* is often glossed as infinitival marker, although this implies that there are two infinitival markers in negative infinitives like (5):

(5) *ku-to-ku-j-a*
ku-NEG-ku-come-FV
'not to come'

Schadeberg (1995) glosses the second *-ku-* in (5) as stem marker. Historically, however, there is little doubt that the stem marker and the infinitival marker have the same origin. The distribution of the stem marker is often said to be related to stress, as for example in Ashton, who summarizes the situation under the heading 'Monosyllabic Verbs'. I present the section from Ashton (1944: 12) in full below:

Monosyllabic verbs
These are ten in number.

ku-cha	to fear	ku-la	to eat
ku-cha	to rise, i.e. of sun	ku-nya	to drop like rain
ku-chwa	to set	ku-nywa	to drink
ku-fa	to die	ku-pa	to give
ku-ja	to come	ku-wa	to be or become

Two disyllabic verbs with vowel stems - isha and enda - follow the rules for monosyllabic verbs, and in some localities other verbs also, such as iba (steal), oga (bathe).

The retention of ku- in certain tenses has been mentioned as the various forms have come under discussion. The reasons for this are now summarized.

In Swahili the penultimate syllable usually carries the stress. But certain tense prefixes and the relative particles -o and -ye cannot carry the stress; therefore ku- is inserted to prevent the stress falling to these particles. Note, however, that the tense prefixes -ki-, -ka-, and -ku- can carry stress, and do not need the insertion of ku-. Subject and object prefixes and hu- and si- can also take the stress; therefore no ku- is required if the stress falls on these.

Particles which cannot be stressed		Particles which can be stressed	
NA	Anakula	KI	Akila
ME	Amekula	KA	Akala
LI	Alikula	KU	Hakula
TA	Atakula	SI	Asile
NGE	Angekula	HU	Hula
NGALI	Angalikula	A	Yuala
Relative	Aliyekula	Subj. Pref.	Ale
	Asipokula		Hali
	Alipokula	Obj. Pref.	Ameyala
	Ajapokula		

One tense takes both forms: - Hajakula or Hajala

Ashton's summary shows that there are ten monosyllabic verbs in Swahili which show the alternation between *-ku-* and zero when used with a specific set of tense morphemes. In addition, some vowel-initial verbs show the same alternation, most commonly *-enda*, 'go', and *-isha*, 'finish'. The inclusion of the subject marker in Ashton's list implies that also in the 'general relative', in contrast to the 'synthetic' relatives listed, *-ku-* is not used: *wajao*, 'those who come', not **wakujao*. The list of tense morphemes with which *-ku-* is used can be extended to include the negative marker *-to-*, as the negative infinitive with a monosyllabic verb like *kuja* is *kutokuja*, and not **kutoja*. Also the new perfective forms with *-sha-* take the stem marker: *ameshakula, akishakula, ashakula.*

3. The 'prevent stress' analysis

In addition to describing the situation, Ashton offers an analysis for the distribution of *-ku-* as resulting from the assumption that some tense markers are unable to carry stress, and that in order to avoid a situation where stress would fall on them, *-ku-* is inserted in the stressed penultimate position. A similar analysis (i.e. relating *-ku-* to the avoidance of stress falling on some preceding morpheme) is also found in many student manuals of Swahili. For example, Russell in *Teach yourself Swahili* writes: '… the monosyllabic verbs keep the **ku-** with all the tenses you have learnt so far. These are among the tense-markers that cannot carry stress so the inclusion of **ku-** prevents them from occurring as the penultimate syllable' (Russell 1996: 59). Similarly, in Maw's *Swahili for Starters*, the following is found: 'The tense sign *-na-* cannot be stressed, so if a verb with a monosyllabic stem […] is used with this tense, the morpheme *-ku-* is used […] to carry the stress' (Maw 1999: 79).

The idea presented by these authors is thus very simple:

(6) If the main word stress would fall on a morpheme which cannot take stress, *-ku-* is inserted.

According to this rule, there are morphemes which cannot bear stress, so that *-ku-* is inserted in the stressed, i.e. penultimate, position. The form of the rule is cumbersome, as it does not refer simply to a context in which something happens, but rather to potential processes which need to be 'prevented'. However, a more serious problem is that the rule does not explain all the relevant facts, as discussed in the following sections.

3.1. Problems with the 'prevent-stress' analysis

Despite the popularity of the stress analysis, there are some problems with it. The first is that not only monosyllabic verbs take *-ku-*, but also, as Ashton points out, some bi-syllabic, vowel-initial verbs, including *-enda* and *-isha*, which are usually treated as 'exceptionally' taking *-ku-*. The second one is that the *-ku-* is retained even when post-verbal clitics are added to the verb form, and thus stress would not fall on the relevant tense morpheme even without *-ku-*.

3.1.1 Bi-syllabic verbs

Stems such as *-enda* and *-isha* are, in fact, not monosyllabic, and attract stress on the stem vowel. Stress would thus not fall on the preceding tense marker even without *-ku-*, which is, furthermore, syllabified in the onset preceding the stem vowel, so that the /u/ of *-ku-* in these forms is not syllabic. In other words, due to the presence of the stem vowel in these verbs, stress falls on the stem regardless of the presence or absence of *-ku-*. Yet as (7) and (8) show, they do – at least in some dialects – take the stem marker *-ku-* with the relevant tenses[1] (the accent shows that stress falls on the stem vowel and not on *-ku-*):

(7) *a-me-kw-énd-a*
SCD1-PERF-SM-go-FV
'S/he has gone'

(8) *a-me-kw-ísh-a*
SCD1-PERF-SM-finish-FV
'S/he has finished'

The examples show that the stress rule in (6) does not explain the presence of *-ku-* here. Main stress falls on the stem vowel in (7) and (8), as it does with tenses which according to the stress analysis can take stress (9), and in those dialects which do not use *-ku-* with bi-syllabic verbs (10):

(9) *a-ki-énd-a*
SCD1-SITU-go-FV
'If s/he went'

(10) *a-me-énd-a* (dial.)
SCD1-PERF-go-FV
'S/he has gone'

Thus, the rule in (6) has to be amended by either saying that examples such as (7) and (8) result from 'analogy', or that some other reason is involved – for example, that *-ku-* is inserted because the stems are vowel-initial and/or are part of the stressed syllable, a possibility I return to below. The analogy explanation essentially means that verbs like *-enda* and *-isha* are *lexically* marked as taking *-ku-*, in contrast to monosyllabic stems, which are subject to the general rule in (6). In section 5, I propose that in fact all instances of *-ku-* insertion can be analysed as resulting from lexical information, and that at least synchronically, a rule like (6) is not necessary. Before doing so, however, I turn to another problem with the prevent-stress rule.

3.1.2 Enclitics

The second problem with the prevent-stress rule is that *-ku-* is found also in verb forms with monosyllabic verb stem and post-verbal clitics. These clitics are added to the verb after the final vowel and are relevant for stress assignment, that is, they count for determining the penultimate position on which stress falls. This means that, as in

[1] There is, as Ashton points out, variation as to which vowel-initial verbs, if any, take *-ku-*, and as to whether *-ku-* is used with the negative perfective tense marker *-ja-* My cursory impression is that Kiunguja, i.e. urban Zanzibar speakers use *ku-* forms with the relevant tenses, while mainland speakers tend to not use *-ku-*.

the cases above, stress would not fall on the tense marker even without the *-ku-*. The following examples show this:

(11) *a-li-kú-w-a* *mwalimu*
SCD1-PAST-SM-be-FV teacher
'S/he was a teacher'

(12) *a-li-ku-w-á-po*
SCD1-PAST-SM-be-FV-LOC
'S/he was here'

(13) *a-me-kw-end-á-pi?*
SCD1-PAST-SM-go-FV-LOC_INTER
'where has he gone?'
(Ashton 1944: 153)

In (11), *-ku-* is found with the monosyllabic verb stem *-wa*, 'be', attracts stress, and thus, according to the stress analysis, prevents stress from falling on the tense marker *-li-*. In (12), however, where the locative clitic *-po* is added to the verb form, stress falls – regularly – on the penultimate syllable *-wa-*, that is, not on *-ku-*, so that stress would not fall on the tense marker even without *-ku-*. Yet, in (12) *-ku-* is inserted after the tense marker. A similar example is (13), where this time the interrogative locative clitic *-pi* is added. As in (12), stress assignment in (13) shows that *-ku-* does not prevent stress assignment to the tense marker, as it is the final vowel which is stressed independent of the presence or absence of *-ku-*[2].

One obvious solution to this problem is to assume that clitics are added to the verb after (the first) stress assignment has taken place – which licences the insertion of *-ku-* – and that then a second phonological cycle applies after the clitic has been added which re-assigns stress. At that stage, however, *-ku-* has already been inserted and can no longer be removed[3]. While this is a viable option, it does presuppose a model of phonology more complex than implied by the seemingly simple rule in (6). I show below that a lexical analysis of *-ku-* provides an alternative which does not require a specific model of phonology.

3.1.3 It's the wrong TAM markers which cannot take stress

A final problem of the prevent-stress rule is that there is no motivation for why certain morphemes can or cannot bear stress. The reason for the split in the tense morpheme inventory between those morphemes which are found with *-ku-* and those which are not is of course an interesting one. One well-known way of explaining this is by recourse to the morpheme's linguistic history. It so happens that all those morphemes which do take *-ku-* appear to be younger with respect to their grammaticalization; for most of them, a lexical source can be suggested, and in some cases there is diachronic evidence of their less grammaticalized stages. For example, the perfect marker *-me-* can be shown to replace an older perfect marker *-ile* and to result from grammaticalization of a lexical verb *-ma(l)a*, 'finish', the root of which is still found

[2] Even though, as Ashton (1944: 153) observes, secondary stress may fall on the antepenultimate syllable.

[3] For a more detailed development of such a cyclic view of phonology, see e.g. Brame (1974), Kiparsky (1982), Katamba (1993).

in modern Standard Swahili in the causative form *-maliza*, 'finish'. Similar evidence is available for all other tense morphemes which take *-ku-* (see, for example, Sacleux 1909, Miehe 1979), and for the development of the synthetic, as opposed to the general relative (Schadeberg 1989). In contrast, most tense morphemes which do not take *-ku-* are from an older stage of the language, and some can be reconstructed to Proto-Bantu (e.g. *-ka-* or *-si-*, see Meeussen 1967). While this is valuable evidence – which I will come back to further below – it does not support the prevent-stress analysis. This is because it is usually assumed that in the process of grammaticalization, lexical items lose a number of characteristics and become less independent over time. One of these qualities is the ability to bear stress, which is associated with more lexical forms, but not with more grammatical forms. In view of this, it should be exactly the 'older' morphemes which cannot bear stress (and hence would require *-ku-*), and not, as is the case, the 'younger' morphemes which are still closer to their lexical source. The consequence of this is that, while the historical evidence for the two groups of tense morphemes in Swahili seems to have a bearing on the distribution of *-ku-*, it is not clear how this fact can be related to the ability to bear stress. In the following section I review Meinhof's stress analysis which avoids a number of the problems discussed so far. However, Meinhof's analysis is a diachronic analysis and a synchronic lexical alternative is presented in the subsequent section.

4. Meinhof's diachronic analysis

A different phonological analysis of the distribution of *-ku-* has been developed by Meinhof, who proposes that the presence of *-ku-* is the remnant of a diachronic process of tense grammaticalization during which infinitival *-ku-* was deleted in all but stressed and vowel-initial positions (Meinhof 1910a, 1910b, 1933). The idea is that Swahili has inherited a system in which tense marker and verb stem were combined without ever involving the infinitival marker *-ku-*, which explains why *-ku-* is not found with the 'old' tense markers which are a direct reflex of this system. At a later stage, new tense markers were formed by grammaticalizing a main verb with an infinitival complement, marked with *ku-*. These main verbs developed into tense markers (for which there is, as pointed out above, good evidence), involving processes of reduction often associated with grammaticalization. One of these processes was the loss of the infinitival *ku-*, except, so Meinhof argues, when the *-ku-* was stressed, or when the following verbal base was vowel-initial. The interaction of stress and segmental reduction is, similarly, well supported, and found elsewhere; it accounts, for example, for the difference in vowel quality between English *Christ* and *Christmas*.[4]

The first context for the retention of *-ku-*, i.e. when *-ku-* was stressed, explains the relation between monosyllabicity and *-ku-*. Note that in this historical explanation, the real issue is that *-ku-* was stressed, and not, as in the prevent-stress analysis, that *-ku-* prevents stress from falling somewhere else.[5] It also explains why *-ku-* is found with recently developed tense morphemes, which were formed with *ku-* as part of the infinitival complement.

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[4] A regular process of vowel shortening applied to the historically long vowel /i:/ in compounds like *Christmas*, as stress was distributed over two syllables, but not to /i:/ in *Christ* as the vowel was the sole bearer of the word stress. The vowel in *Christ* was subsequently diphthongized as part of the 'Great Vowel Shift' (Jespersen 1948 [1909]: 122/3).

[5] A similar rule is found in the nominal system of Swahili, where the nasal class prefixes of classes 9 and 10 are lost except when stressed.

The explanation so far can be extended to the cases of bi-syllabic verbs such as *-enda* in two ways. One is that *ku-* in these cases was, if not bearing stress itself, part of the stressed syllable, so that *kw-* was protected for the same reason that *ku-* was with monosyllabic verbs. An alternative view is that *kw-* is used with verbs like *-enda* because *ku-* was retained not only when stressed, but also when found before vowel-initial verb stems. Meinhof seems to favour the second view, although he does not give a detailed explanation (cf. 1910a: 109). In either scenario, Present day Swahili vowel initial verbs which never take *-ku-*, e.g. *-ona*, 'see', are analysed by Meinhof as having lost their initial consonant only after the rule protecting *-ku-* had ceased to be productive[6]. The view that *kw-* is retained before vowel-initial stems is supported by considering comparative evidence showing that an infinitival prefix is used with vowel initial stems in Swahili dialects and related Bantu languages. In the Zanzibari dialect of Kinungwi (Kristina Riedel, p.c.), for example, *-ku-* is found with all vowel-initial verbs, so that forms like (14) contrast with the corresponding Standard Swahili (15):

(14) tu-ta-kw-imb-a [Kinungwi]
SCD1PL-FUT-SM-sing-FV
'we will sing'

(15) tu-ta-imb-a [Standard Swahili]
SCD1PL-FUT-sing-FV
'we will sing'

Outside of Swahili, Luguru (G30, see Marten and Ramandhani 2001) shows the use of *-ku-* with vowel-initial stems:

(23) *mayi* *ka-kw-ambik-a* *ipfidyo*
mother SCD1.PRES-SM-cook-FV food
'The mother is cooking food'

(24) *mayi* *ka-pf-ambik-a* *ipfidyo*
mother SCD1.PRES-OCD8-cook-FV food
'The mother is cooking food'

The examples in (23) and (24) show that the vowel-initial verb stem *-ambika*, 'cook', requires the presence of either a stem marker (23) or an object marker (24). The Swahili dialect of Kinungwi and the related language Kiluguru show that the system of retaining *-ku-* before vowel-initial stems is found outside Standard Swahili more productively. These data show that the use of *ku-* before vowel initial stems is attested synchronically and thus lends further support to the hypothesis that the *-ku-* of *-isha* and *-enda* is a relict of this strategy.

Meinhof's analysis accounts for the distribution of *-ku-* by providing a diachronic explanation. However, it is possible to reformulate the analysis such that it explains the present day situation without direct recourse to the history of the language (as is implied, for example, in Schadeberg 1995). Under this interpretation,

[6] Another piece of evidence discussed by Meinhof (1910b: 63) is the dialectal variation between the forms *-oga* and *-koga*, 'bath', where the claim is that *-koga* is historically a complex form of infinitival prefix and stem. However, those speakers who use *-koga*, use it with all tenses, so there is no alternation dependent on tense morpheme as found with *-isha* and *-enda*.

all verb forms which are built with the relevant 'new' tense markers have an underlying *-ku-* morpheme. The *-ku-* could be analysed as an infinitival *-ku-* so that tenses with new TAM markers are underlyingly still main verb plus infinitival complement constructions, or, alternatively, the new tense markers may have been reanalysed as containing an underlying *-ku-* as second part. In either case, *-ku-* in this view would be part of all verbal forms built with TAM markers like *-na-*, *-ta-*, *-li-* etc. The phonological rule which deletes *-ku-* except when stressed would then be analysed as still being active in present day Swahili, and thus *-ku-* is only found with monosyllabic underived stems, i.e. in whenever *-ku-* attracts stress. Of the problems listed for the synchronic 'prevent stress' rule listed above, the present solution avoids a few. The explanation of which tense markers have *-ku-* carries over from the diachronic explanation, as does the fact that monosyllabic verbs are affected. The presence of *-ku-* with verb forms with clitics presupposes a layered phonology as outlined above. The main problem for this analysis is the inclusion of *-isha* and *-enda* in the *-ku-* taking verbs, which does not result from any straightforward phonological rule. This, and the assumption necessary for this analysis that all tense forms built with new tenses have an underlying *-ku-* makes is worth while to look for an alternative analysis.

5. A lexical treatment of **-ku-**

Within a wider context, the question of how to analyse the distribution of *-ku-* in Swahili concerns the relation between diachronic and synchronic analyses, and the role of regularity in language. The question here is to what extent a regular diachronic process is analysed as being regular synchronically even though it is no longer fully productive. Or, in other words, at what stage in the history of a language are a comparatively small group of items reanalysed as lexical 'exceptions' rather than as being subject to a general rule of grammar. The synchronic adoption of Meinhof's analysis emphasizes the regular aspects of present day *-ku-*, capitalizing on the monosyllabicity of the relevant verbs. The trade-off is that this explanation postulates that *synchronically* all verbs – monosyllabic or not – are formed with an underlying *-ku-* which is deleted when not stressed. In addition, forms like *-enda* and *-isha* have to be marked lexically as exceptional so as to predict that they do take *-ku-* while phonologically similar verbs like *-ona*, 'see' or *-iba*, 'steal' do not. The diachronic regularity is thus essentially taken over to the synchronic level. An alternative view, which I sketch in this section, is to analyse all instances of *-ku-* as resulting from lexical information encoded in the relevant verbs. From this perspective, all verbs are like *-enda* and *-isha*, while the fact that a large number of these verbs are monosyllabic is a synchronically accidental property[7].

[7] One often used test for productivity is the treatment of loan-words; if they are treated like the diachronically regular verbs, the relevant phonological rule can be assumed to be productive; if not, the process is no longer productive. For the case at hand, however, this is problematic; although monosyllabic loanwords do not take *-ku-*, they retain their original stress-pattern and thus do not bear on the analysis of *-ku-* (Rhiannon Stephens, p.c.; cf. Stephens 2000 for the study of Swahili-English code-switching from which this example is taken):

(i) *ni-ta-wín*
SCD1SG-FUT-win
'I will win'

5.1. Lexical entries

As a starting point recall that for the non mono-syllabic verbs which do take *-ku-* (e.g. *-isha* and *-enda*), some lexical information has to be assumed to state that these forms take *-ku-* as this does not follow from phonological rules such as (6). From this, it is but a small step to assume that this is true also for all monosyllabic verbs. Once we assume that all verbs taking *-ku-* simply share certain lexical information stating that fact, no general rule is needed. Such a lexical statement may take the form exemplified for *-ja,* 'come', in the entry below:

(14) Sample lexical entry for -j- (i.e. kuja)

-j-
SYN: verb;
SEM: 'come';
ALT: -kuj- *after* na, me, me, li, ta, nge, ngali, to, ye, Xo.

In the entry in (14), SYN stands for syntax (or syntactic category) and SEM for semantics, or 'meaning', which I here give as the English translation equivalent; in both cases I do not claim that this is a serious analysis. The relevant point here is the final entry ALT, meaning an alternative form is used (with identical SYN and SEM as it is one lexical entry). In the list of forms after which *-kuj-* is used, I have listed all relevant morphemes, including the relative morphemes *-ye-* (for class 1) and *-Xo-*, which is meant to be a variable over all referential concords built with *-o* in relative clause construction. Of course this could be modelled differently, for example by making reference to a morpho-syntactic category such as Relative concord ('RCd') to include *-ye-* and referential concords in *-o*. While there are several possibilities as to the details of the proposal, the general idea is simply that the lexical entry for *-ja* includes, next to syntactic and semantic information, morphological information which gives an alternative form to be used in the circumstances specified. Of course, this information has to be included in the lexical entries of all relevant verbs. On the other hand, no special phonological or morphological rule regulating *-ku-* has to be postulated as part of the grammar of Swahili.

Another instance where a morphological alternation can be modelled as lexically driven is the alternation found with the future tense marker *-ta-*. The future marker has an alternative form *-taka-*, which is used after relative morphemes, and this can be conveniently expressed in the following entry:

(15) Sample lexical entry for -ta-

-ta-,
SYN: Tense Marker;
SEM: future,
ALT: -taka- *after* Xo.

Like with *-ku-* verbs, the entry in (15) lists syntactic and semantic properties as well as an alternative form to be used after relative morphemes[8].

[8] Like for the *ku-* case, there is a diachronic analysis for this alternation which reflects the origin of the future tense marker *-ta-* from the verb *-taka,* 'want'.

One consequence of this lexical treatment is that it does not postulate a relation between the distribution of *-ku-* and either stress assignment or the phonological form (i.e. monosyllabicity) of the relevant verbs. From the perspective adopted here, these aspects are synchronically accidental, as the group of verbs having alternative forms in their lexical entry is not further motivated. While the lexicon under this view has a more complex structure, the rule component of the grammar is correspondingly smaller.

Within the wider picture of linguistic theory, the move from rule-based to lexical analyses is part of a more general research development. In early generative grammar, in a situation like the distribution of Swahili *-ku-* a rule based analysis would have been preferred. For example, in Chomsky and Halle's *Sound Pattern of English* (1968), the overall approach to linguistic analysis is to represent regularities, however small, and to avoid exceptions to rules as much as possible: '… an overriding consideration is that the evaluation measure must be designed in such a way that the wider and more varied the class of exceptions to a rule, the less highly valued is the grammar' (1968: 172). One of the reasons behind this strategy was, in addition to demonstrating the range of applications of generative grammars, the assumption that linguistic knowledge is open-ended and that it therefore could not be stored in memory, but rather had to be represented in some algorithmic format. In addition, it was generally assumed at the time that the storage space available in the brain was more costly than rules, and thus that rules were preferred to lexical solutions (see e.g. discussions in Bromberger and Halle 1989, Kaye 1995). More recently however, presumably in part as a result of the increase in available storage space in information technology, the view that rules are better than lexical storage has come under criticism, and there is general agreement that lexical information plays a much bigger role in linguistic representation. For example, constraint based frameworks such as LFG (e.g. Bresnan 2001) and HPSG (e.g. Sag and Wasow 1999) have highly structured and complex lexical entries, as does the procedural Dynamic Syntax model (Kempson et al. 2001). In phonology, Kaye (1995) proposes a lexical rather than a derivational solution for English irregular past tenses such as the relation between *keep* and *kept*. Once we assume, in line with this research direction, that the lexicon is not maximally minimal, but rather the locus of complex syntactic, semantic, and phonological information, the Swahili case discussed here provides another example of how idiosyncratic, semi-regular patterns can receive a simple lexical solution such as provided in the lexical entries above.

5.2. A potential problem: extended monosyllabics

One potential advantage of the stress analysis is that it correctly predicts that when monosyllabic verbs are used with a derivational suffix, they do not take *-ku-*. Thus, for example, the derived forms *-fiwa*, the passive, and *-fia*, the applicative of 'die' do not take *-ku-* in (16) and (17) (cf. Johnson 1939: 88):

(16) *a-li-f-í-a* *bahari*
SCD1-PAST-die-APPL-FV sea
'S/he died at sea'

(17) *a-li-f-íw-a* *na* *mtoto*
SCD1-PAST-die-PASS-FV by child
'S/he lost his/her child'

According to the stress analysis, *-ku-* is not needed here, as stress falls on the vowel introduced by the derivational suffix. However, even in the cases of extended verb stems, the problem with bi-syllabic verbs remains, as these, similarly, do not take *-ku-* when used with suffixes, despite the fact that stress doesn't play a role with them in the first place, as can be seen with the causative form of *-enda* in (18):

(18)	*a-li-end-ésh-a*	*gari*
	SCD1-PAST-go-CAUS-FV	car
	'S/he drove the car'	

In (18), like in the preceding cases, stress falls on the vowel of the suffix, and *-kw-* is not used even in dialects where *-kwenda* rather than *-enda* is used with the past tense *-li-*.

While this evidence doesn't exactly support a lexical analysis, it does not, on the other hand, provide a real problem, if it is assumed that derivational morphology is modelled as operating on lexical entries to give other lexical entries. From this perspective, it is not surprising that lexical information is changed when derived verbs are formed – certainly the syntactic and semantic values of the base form are modified, and the only stipulation needed is that morphological information such as the ALT statements in the lexical entries above are not taken over into the newly formed lexical entry[9].

6. Conclusion

I have argued that the distribution of the stem marker *-ku-* in Present day Standard Swahili should be analysed as a lexical phenomenon, formalised as a statement in the lexical entries of the relevant verbs. In contrast, diachronically, the distribution reflects the former productive process of protecting *-ku-* in stressed positions, and before vowel-initial stems. The diachronic analysis – essentially Meinhof's – can be further supported by comparative evidence from languages like Kiluguru, where the protection of *-ku-* before vowel-initial stems is still productive. I thus argue for a division between synchronic and diachronic analysis, so as to accommodate the fact that in present day Swahili forms with *-ku-* are lexicalised and do not reflect a productive pattern. By separating these two aspects of linguistic analysis, it becomes clear that the distribution of *-ku-* is not, and has never been the result of some presumed inability of some tense markers to carry stress, contrary to the view customarily adopted in Swahili manuals.

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[9] Supporting evidence of sorts for the view that derived verbs in Bantu should be analysed as modified lexical entries are offered in Kula (2002) for Bemba, and in Marten (2002: 185-7) for applied verbs in Swahili.

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