

MORPHOLOGICALLY BASED AGREEMENT IN SWAHILI*

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In this paper we argue that to a great extent noun class agreement in Swahili is based on inflectional features. Yet where inflectional features are not present, a derivational feature of inherent noun class controls agreement. Swahili, then, is seen as having a dual noun class system in which agreement is controlled by a hierarchical set of features ranging from inflectional to derivational. The evidence from Swahili indicates that Anderson's [1982] claim that inflectional morphology alone is relevant to syntax may be too strong and supports a weaker version admitting some interaction of derivational morphology with syntax.

1. Introduction

Anderson [1982] proposed a principled distinction between inflectional and derivational morphology. His claim is that inflectional morphology alone is relevant to syntax. In this paper, we test this claim against facts provided by Swahili noun class affiliation and patterns of agreement. We provide evidence for a dual noun class system in Swahili and a hierarchical set of features that determine agreement. In face of this evidence, we find that Anderson's criterion is too strong. We do, however, support a weaker version of it that allows for some interaction between syntax and derivational morphology.

In the first section, we provide arguments for a bifurcated noun class system composed of nouns that affiliate with noun classes inherently and those which do so non-inherently. We then examine the relevance of noun class to agreement. We conclude that agreement is based on inflectional features. When these features are

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not present, agreement is carried out based on the derivational feature of inherent noun class.

2. The Swahili Noun Class System

Traditional Swahili grammarians like Ashton [1947] depict the noun class system in Swahili as composed of approximately sixteen individual classes. Membership in a particular noun class is often indicated by the presence of a prefix characteristic of that class.

- | | | | | |
|-----|--------------|-------------------|----------------|------------------|
| (1) | <i>m -tu</i> | <i>vi -tunguu</i> | <i>u -zuri</i> | <i>ku -fanya</i> |
| | c.1 | c.8 | c.14 | c.15 |
| | person | onions | goodness | to do,doing |

In the examples above, the prefixes are all indicative of the class to which these nouns belong. The word *mtu* is like other words in its class in that it refers to humans, and it takes the prefix *m-*.

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|-----|-------------------|---------------------|----------------|------------------|
| (2) | <i>m -swahili</i> | <i>m -kurugenzi</i> | <i>m -toto</i> | <i>m -gonjwa</i> |
| | c.1 | c.1 | c.1 | c.1 |
| | Swahili person | boss | child | sick person |

Nouns in Swahili will also have their noun classes reflected on the modifying elements in the sentence. There are two types of agreement prefixes realized on these modifiers. An adjectival prefix occurs on attributive adjectives and is identical to the characteristic prefix of the noun class. A pronominal prefix is identical to the noun class prefix in only half of the sixteen noun classes, and it is realized on possessive particles and pronouns, demonstrative pronouns, and verbs. A full table can be found in the **Appendix**.

- | | | | | | | | | | |
|-----|-----------|------------|----------------|---------------|-----------|-----------|----------|-----------|--------------|
| (3) | <i>mi</i> | <i>-ti</i> | <i>mi</i> | <i>-kubwa</i> | <i>hi</i> | <i>-i</i> | <i>y</i> | <i>-a</i> | <i>mwitu</i> |
| | c.4 | nom | a.a, c.4 | adj | dem,prox | p.a.,c.4 | p.a.,c.4 | poss | |
| | trees | | big | | these | | of | | forest |
| | <i>i</i> | <i>-li</i> | <i>-anguka</i> | <i>jana</i> | | | | | |
| | p.a.,c.4 | tense,past | V | | fall | yesterday | | | |

‘these big trees of the forest fell yesterday’

In this example, “a.a.” stands for *adjectival agreement* and “p.a.” stands for *pronominal agreement*. Class 4 is one of the noun classes where the adjectival prefix and the pronominal prefix are different.

Most pedagogical texts and some theoretical works assume that agreement in Swahili is based upon the noun class of the head noun (cf., for example, Gregersen [1967]). There are various exceptions to this noun class based agreement. We will explore these exceptions below.

Diachronically, this noun class system is believed to have been semantically defined. In the synchronic grammar, this semantic cohesion is no longer evident. There are, however, some semantic sub-groups within each noun class (cf. Ashton [1947]). Zawawi [1979] rejects the traditional criteria of noun class and instead proposes a system based on a more limited set of semantically-defined “nominal indicators”. These indicators correspond to a subset of the traditional prefixes. Below is her proposed system.

| (4) <u>Form</u> | <u>Function</u> |
|-----------------|---|
| <i>m-</i> | Indicates substance of life singular. |
| <i>u-</i> | Indicates substance of abstractness and singularity. |
| ∅, <i>n-</i> | Substance is not specified, a catch-all. |
| <i>ki-</i> | Indicates comparison of size or manner; singular may refer to person, animal, thing, or place. |
| <i>ji-</i> | Indicates intensification in substance or action; it is unmarked and therefore co-occurs with any nominal. |
| <i>ba-</i> | Indicates intensification; a marked form refers only to large. |
| <i>ma-</i> | Indicates a plural substance of unmarked or unspecified stems. |
| <i>wa-</i> | Indicates a plural number of substance which is marked for life in animals. |
| <i>mi-</i> | Indicates a plural number of substance which is marked for life in plants and trees or those inanimate singulars which co-occur with the prefix <i>m-</i> . |
| <i>vi-</i> | Indicates a plural number of substance marked for comparison of size and manner |

A distinction can be seen within some of these groupings. For example, in the group represented by the nominal indicator *ki-*, the notion “comparison of size or manner” indicates a group of nouns in Swahili that are usually made diminutive or refer to manner when they take the *ki-* indicator. The second function in the *ki-* group is to delimit a singular that may refer to a person, animal, thing, or place. It seems that any concrete noun fits into this category. It really does not capture a function at all in Swahili.

- (5) *kitu* 'thing'
chakula 'food'
kitabu 'book'
kioo 'mirror'
kiosho 'act of washing'

There is nothing in the meanings of these words that indicates anything about a comparison of size or manner. There is no semantic bond that renders the list in (5) a group. These nouns do, however, take the same set of agreement markers on their modifiers.

- (6) *ki* *-tabu* *hi* *-ki* *ch* *-a* *Ali* *ki* *-li* *-anguka*
 c.7 N dem c.7 c.7 poss c.7,s.a. T,past V
 book this of fall
 'this book of Ali's fell'
- (7) *ch* *-akula* *ki* *-le* *ki* *-li* *-pik* *-w* *-a* *naye*
 c.7 N c.7 dem c.7,s.a. T,past V passive
 food that cook by her/him
 'that food was cooked by her/him'

Zawawi notes that the *ki*- group of nominals can be singular people, animals, things, or places. In this definition there is no semantic restriction at all since there are people, animals, things, and places that affiliate with other classes as well. On the other hand, the nouns in this group that refer to a comparison of size or manner are semantically defined.¹

- (8) *kitoto hiki kizuri* 'this little child is good'
kikoba hiki kizuri 'this little bag is good'
kikombe hiki kizuri 'this cup is good'
kifagio hiki kizuri 'this little broom is good'
kigudulia hiki kizuri 'this little water jar is good'
kisanduku hiki kizuri 'this little suitcase is good'

Note that in (8), all of the sentences but one, the one with *kikombe*, refer to the small size of the object. Corresponding to each of these diminutive nouns are nouns from other classes that refer to the same objects of normal size.

¹The following examples are from Zawawi [1979].

- | | |
|-----------------------------|--------------------------|
| (9) <i>mtoto huyu mzuri</i> | ‘this child is good’ |
| <i>mkoba huu mzuri</i> | ‘this bag is good’ |
| <i>fagio hili zuri</i> | ‘this broom is good’ |
| <i>gudulia hili zuri</i> | ‘this water jar is good’ |
| <i>sanduku hili zuri</i> | ‘this suitcase is good’ |

The one noun in (8) that is not diminutive can be made so with the intensifier *-ji-*.

- (10) *ki -ji -kombe* ‘a/the small cup’

This intensifier distinguishes an inherently class 7 form from its diminutive.

In each of the nominal categories in (4), there are nouns that correspond to the function listed but there are other nouns which are exceptions to the delimiting functions. Moreover, there is no delimiting function in one case, the *n-* case.

Some of the semantically defined functions that Zawawi lists are composed of nouns that have corresponding nominals in other classes. These are listed in (11).

- | | | | |
|------------------------|--|-----------------|--------------|
| (11) <u>Form</u> | <u>Function</u> | | |
| <i>u-</i> | Indicates substance of abstractness and singularity. | | |
| <i>utoto</i> | ‘childhood’ | <i>mtoto</i> | ‘child’ |
| <i>uzee</i> | ‘old age’ | <i>mzee</i> | ‘old person’ |
| <i>ushamba</i> | ‘rural’ | <i>shamba</i> | ‘farm’ |
| <i>uongozi</i> | ‘leadership’ | <i>kiongozi</i> | ‘leader’ |
| <i>ki-</i> | Indicates comparison of size or manner. | | |
| Cf. (8) and (9). | | | |
| <i>ji-²</i> | Indicates intensification in substance or action. | | |
| <i>toto</i> | ‘large child’ | <i>mtoto</i> | ‘child’ |
| <i>jitu</i> | ‘giant’ | <i>mtu</i> | ‘person’ |
| <i>jumba</i> | ‘large building’ | <i>nyumba</i> | ‘house’ |
| <i>goma</i> | ‘large drum’ | <i>ngoma</i> | ‘drum’ |
| <i>jito</i> | ‘big river’ | <i>mtu</i> | ‘river’ |
| <i>jisanduku</i> | ‘big suitcase’ | <i>sanduku</i> | ‘suitcase’ |

²The noun class prefix or nominal indicator, *ji-*, only appears before monosyllabic or vowel initial roots/stems.

ma- Indicates a plural substance of unmarked or unspecified stems.

| | | | |
|----------------|----------------|----------------|----------|
| <i>makombe</i> | 'large dishes' | <i>vikombe</i> | 'cups' |
| <i>mabuzi</i> | 'large goats' | <i>mbuzi</i> | 'goat/s' |
| <i>madege</i> | 'large birds' | <i>ndege</i> | 'bird/s' |
| <i>matabu</i> | 'big books' | <i>vitabu</i> | 'books' |

vi- Indicates a plural number of substance marked for comparison of size or manner.

| | | | |
|------------------|--------------------|------------------|--------------|
| <i>vitoto</i> | 'small children' | <i>watoto</i> | 'children' |
| <i>vikoba</i> | 'small bags' | <i>mikoba</i> | 'bags' |
| <i>vijikombe</i> | 'small cups' | <i>vikombe</i> | 'cups' |
| <i>vifagio</i> | 'small brooms' | <i>mafagio</i> | 'brooms' |
| <i>vigudulia</i> | 'small water jars' | <i>magudulia</i> | 'water jars' |

Note that in all cases the nouns that are semantically predictable are those that belong to a subset of one of Zawawi's functions. The nouns to which they correspond, in the right columns, are not affiliated with their class markers in any semantically transparent way.

It is obvious, then, that a subset of functions that Zawawi recognizes are functions that are applied to already existing nouns in the system. Their meanings are predictable and they delimit the meaning existing in these other nouns. Based on this distinction, we will henceforth call the nouns that correspond to the functions above "non-inherent nouns", since they have a marked affiliation in the system already. The nouns to which the functions are applied we will refer to as "inherent nouns", since belonging to the class to which they do must be a stated, inherent feature of the root or stem involved. In the discussion that follows, we will focus our attention on the non-inherent class of diminutives and adverbials.

In at least one case, there is phonological motivation for this morphological distinction. Looking again at the non-inherent *ki-* nouns, we find that these prefixes are not subject to the palatalization that the inherent nominal prefixes are.

(12) Inherent Nouns
chakula **kiakula*
 'food'

chuma **kiuma*
 'piece of iron'

Non-inherent Nouns
kialimu **chalimu*
 'small teacher'

kiunguja **chunguja*
 'Swahili dialect of Zanzibar'

| | | | |
|-------------------|-----------------|-----------------------|-----------------|
| <i>cheti</i> | * <i>kieti</i> | <i>kiembe</i> | * <i>chembe</i> |
| ‘piece of paper’ | | ‘small mango’ | |
| <i>chombo</i> | * <i>kiombo</i> | <i>kiomo</i> | * <i>chomo</i> |
| ‘tool, implement’ | | ‘small bow of a ship’ | |

This is not to say that inherent noun stems that begin with a vowel will always realize a palatalized *ki-* prefix, but we are not aware of any diminutive nouns that take a palatalized prefix.

Based on the functions discussed by Zawawi, we find that there is evidence that noun class affiliation in Swahili is of two types: inherent affiliation, in which a prefix and a stem are paired together to form a nominal that is not semantically decomposable, and non-inherent affiliation, in which such a pairing is semantically transparent. We may now ask if this morphological distinction is related in any way to derivational and inflectional morphology.

3. Inflectional Morphology

The traditional criteria for distinguishing inflection from derivation are informal and unreliable. Anderson [1982] provides counterexamples to each traditional criterion, and he goes on to argue for a more principled distinction. He proposes the following:

(13) Inflectional morphology is what is relevant to syntax.

Anderson assumes that agreement is a syntactic process.

It is assumed in the literature that noun class determines agreement in Swahili. Gregersen [1967:9, ex. 24b], for example, proposes that agreement in Swahili is accomplished by means of a transformational copying of the noun class prefix onto the modifiers:

(14) A *P - N - X \Rightarrow A *P - N - A - X

In (14), A indicates the left-most prefix, *P represents any number of following prefixes, N is the head noun, and X is the modifying element. This rule captures the alliterative copying of the noun class prefix which is restricted in the agreement system in Swahili but predominant in other Bantu languages. Initially, there does not seem to be any distinction between inherent and non-inherent noun with respect to agreement. Whatever the final prefix is, the agreement pattern follows. There are, however, some problems with this type of agreement rule. There is evidence that Bantu agreement is sometimes based upon more abstract features than overt noun class. Consider in this respect the following example from Swahili:

- (15) a. *ki -boko m -moja a -li -kula ma -jani*
 c.7 N c.1 num c.1 T V c.6 N
 hippo one s/he eat leaves
 'one hippo ate the grass/leaves'
- b. **kiboko kimoja kilikula majani*
 c.7 c.7 c.7

Here, the noun class of the subject is class 7, as indicated by the prefix *ki-*. The agreement prefixes, however, reflect not the noun class of the noun, but rather its animacy. No matter what class prefix an animate noun takes, it will usually take the agreement series of noun classes 1 and 2. The implication here, according to Anderson's criterion, is that the head noun prefixes in these cases are not inflectional. It is the more abstract feature [+animate] that must be the inflectional feature since it determines the agreement pattern. In addition, there are features that can override animacy. Consider these examples from Ashton [1947]:

- (16) \emptyset -joka hi -li \emptyset -baya li -me -kufa
 c.5 N dem c.5 c.5 adj c.5 T,perf V
 (aug) snake this bad it die
 'this monstrous snake is dead'
- (17) *ki -toto hi -ki ki -zuri ki -me -kufa*
 c.7 N dem c.7 c.7 adj c.7 T,perf V
 (dim) child this good it die
 'this good infant has died'

In (16) and (17), the animacy of the subjects is overridden by features of [+augmentative] and [+diminutive], respectively, in determining the agreement. Note also that the two subjects in question are non-inherent nouns. They correspond to the inherent nouns *nyoka* ('snake/s', c.9/10) and *mtoto* ('child', c.1). The agreement pattern of these two inherent classes is overridden as well. From these sentences, we can establish a hierarchy of features that trigger agreement. (The symbol > denotes "overrides".)

- (18) animacy > noun class (cf. 15)
 dim/aug > animacy (cf. 16-17)

This pattern is not completely accurate because it is possible for animacy to override diminution as the controlling feature of agreement.

- (19) *ki -toto hu -yu m -zuri a -me -kufa*
 dem .c.1 c.1 adj s.a.,c.1 T,perf V
 (dim) child this good she/he die
 ‘this good infant has died’

It is clear from (15), (16), and (17) that diminution, augmentation, and animacy override noun class when they are features of the head noun, but there is some variation in the hierarchical relations among these three features, as seen from (17) and (19).

Another example of where the expected noun class agreement is superseded is in the case of locatives. Many nouns can be made locative by suffixing *-ni* to an already prefixed noun.

- (20) *n -(y)umba -ni pa -na watu wengi*
 c.9/10 N loc c.16
 in/at the house with people many
 ‘there are many people in the house’

The feature which determines agreement here is the abstract feature [+exact location], not the noun class of the noun as indicated by any affix. There are three different agreement patterns that are possible with any noun marked with the locative suffix *-ni* representing three aspects of location: exact, approximate, and contained. This information is not represented on the noun because it takes only one possible suffix, *-ni*, so agreement in location is not something that is realized overtly on both modified and modifier.

Note that (20) is different from the other cases of disagreement above in that the prefix of the inherent category is preserved, but its control over agreement is lost.

The last example of disagreement that we will discuss is that involved with the collective kinship terms, given below.

- (21) *ma -baba z -angu* ‘my fathers’
 pl. father c.10 poss

ma -dada z -angu ‘my aunts’
 pl. aunt c.10 poss

ma -rafiki z -angu ‘my friends’
 pl. friend c.10 poss

The noun class copying rule (cf. 14) would yield agreement markers that correspond to the *ma-* class, yet the agreement markers realized are those of the inherent class of these nouns, class 10.

- (22) *baba* ‘father/s’
ndugu ‘sibling/s’
rafiki ‘friend/s’

This is an example of noun class overriding the non-inherent noun class of collectives. The hierarchy that emerges is given in (23).

- (23) animacy > noun class (cf. 15)
dim/aug > noun class (cf. 16-17)
dim/aug > animacy (cf. 16-17)
animacy > dim/aug (cf. 19)
location > noun class (cf. 20)
noun class > collective (cf. 21)

The general implication in this hierarchy is that non-inherent noun class overrides inherent noun class in determining agreement. This is true in every case examined except in the case of collective animates (cf. 21). In these cases inherent noun class controls agreement on the possessive adjectives, although not on the other modifying elements. However, there is an explanation. All of the nouns which pattern like this are animate. Most of them originate in class 9/10, where possessive agreement is distinct between singular and plural. The agreement marker for animate possessives does not overtly distinguish between singular and plural.

- (24) *m -toto w -angu* *wa -toto w -angu*
c.1 N c.1 poss c.2 N c.2 poss
‘my child’ ‘my children’

According to the hierarchy in (23) animate nouns from any class should take the agreement pattern in (24). Nouns in classes 9 and 10 do not show morphological number through a prefix. However, the agreement markers do show this distinction.

- (25) *n -dugu y -angu* *n -dugu z -angu*
c.9/10 c.9 poss c.9/10 c.10 poss
‘my sibling’ ‘my siblings’

Zawawi claims that it is non-distinction of number in the animate possessive that leads people to use the possessives of class 9/10 to distinguish number. Moreover, she points out, if we use the agreement marker from class 6, the *ma-* class, the possessive prefix is phonetically identical to the singular *n-* class possessive prefix.

Also, standard Swahili requires object agreement when the object is animate. Otherwise, agreement with the object is optional.

(32) *tu -li* $\left\{ \begin{array}{l} -mw \\ * \emptyset \end{array} \right\}$ *-ona Juma*
 s.a.,1 pl. T,past o.a.,3 sg. V
 'we saw him Juma'

(33) *tu -li* $\left\{ \begin{array}{l} -ki \\ \emptyset \end{array} \right\}$ *-ona ki -tabu chako*
 s.a.,1 pl. T,past o.a.,c.7 V c.7 N c.7, poss
 'we saw it your book'

According to Anderson, if animacy is a syntactically relevant feature, then it must be inflectional.

The strong version of Anderson's claim in (13) when applied to Swahili depicts the noun class system as a unified entity where noun class determines agreement. The exceptions noted above must be handled as stipulations in the system of agreement. We have provided evidence that the noun class system is not unified, but rather is made up of two types of classes, inherent and non-inherent. This morphological distinction corresponds to the distinction in the agreement system. Since animacy is an independently needed syntactic feature and it overrides noun class agreement, it must be an inflectional feature in Anderson's framework. By extension, we propose that all of the overriding features in agreement are *inflectional*. Whenever they are present, they determine agreement. This leaves inherent noun class as syntactically relevant only in those cases where there is no inflectional feature to determine agreement. Based on these facts, we propose a weakening of Anderson's claim.

(34) Inflection is what is *most* relevant to syntax.

In a morphologically rich language like Swahili, the distinction between inflection and derivation is not so clear cut. In Anderson's system, non-inherent/inflectional noun class takes precedence over inherent noun class in determining agreement, but is not the only syntactically relevant feature. To maintain the strong version of Anderson, it would be necessary to claim that inherent noun class agreement is extra-syntactic or that there is no distinction within the noun class system. Both of these alternatives have drawbacks. We maintain the position that agreement is syntactic since it operates between and across words. To deny that there is a distinction in the Swahili noun class system would miss an important generalization about the relation of noun class to agreement.

Although Anderson rejects the traditional criteria that differentiate inflection from derivation, he claims that many of these criteria fall out as a consequence of his model. This is also true in our system. Below are the traditional criteria that Anderson discusses:

| (35) | <u>Inflection</u> | <u>Derivation</u> |
|--------------------|-------------------|-------------------|
| Productivity | + | - |
| Category Changing | - | + |
| Paradigmatic | + | - |
| Exterior | + | - |
| Semantics Changing | - | + |

In this regard, consider diminutives once again. According to the traditional criteria, diminution is inflectional. It is productive, it is not category changing, it is paradigmatic, and it is neutral to the exterior criterion since it does not cooccur with inherent noun class. It does not change the meaning of the word, but merely delimits it in a predictable manner. So, diminutives represent the traditional paradigm of inflection that Anderson rejects.

4. Conclusion

The distinction between inflectional and derivational morphology has never been clearly made. Anderson's attempt to attribute inflectional morphology to that morphology which is syntactically relevant, we believe, is a step in the right direction. We have provided evidence in this paper that it is too strong. The spirit of his proposal is, however, substantiated in Swahili. By looking at the noun class system and patterns of agreement in this light, certain unaccounted for facts acquire a principled explanation.

We have not provided a complete account of all of the inflectional classes in Swahili but we feel that we have established a program upon which future research can be directed.

Further empirical evidence for or against this proposal will be found in the agreement facts of other languages outside of Swahili. If it is found that both syntactically relevant and irrelevant features determine agreement in other languages and furthermore that a hierarchy can be established between these, then this will constitute evidence for the weakened version of Anderson's hypothesis.

APPENDIX

Noun classes and Agreement Markers

| Noun Class | Prefix | Subject Affix | Object Affix | Dem. Pro | Relative Affix | Adjective Affix | Possessive Affix |
|------------|--------------|---------------|--------------|-------------|----------------|-----------------|------------------|
| 1 | <i>m-</i> | <i>a-/yu-</i> | <i>-m-</i> | <i>huyu</i> | <i>-ye-</i> | <i>m-</i> | <i>w-</i> |
| 2 | <i>wa-</i> | <i>wa-</i> | <i>-wa-</i> | <i>hawa</i> | <i>-o-</i> | <i>wa-</i> | <i>w-</i> |
| 3 | <i>m-</i> | <i>u-</i> | <i>-u-</i> | <i>huu</i> | <i>-o-</i> | <i>m-</i> | <i>w-</i> |
| 4 | <i>mi-</i> | <i>i-</i> | <i>-i-</i> | <i>hii</i> | <i>-yo-</i> | <i>mi-</i> | <i>y-</i> |
| 5 | <i>(ji-)</i> | <i>li-</i> | <i>-li-</i> | <i>hili</i> | <i>-lo-</i> | \emptyset | <i>l-</i> |
| 6 | <i>ma-</i> | <i>ya-</i> | <i>-ya-</i> | <i>haya</i> | <i>-yo-</i> | <i>ma-</i> | <i>ya</i> |
| 7 | <i>ki-</i> | <i>ki-</i> | <i>-ki-</i> | <i>hiki</i> | <i>-cho-</i> | <i>ki-</i> | <i>ch-</i> |
| 8 | <i>vi-</i> | <i>vi-</i> | <i>-vi-</i> | <i>hivi</i> | <i>-vyo-</i> | <i>vi-</i> | <i>vy-</i> |
| 9 | <i>n-</i> | <i>i-</i> | <i>-i-</i> | <i>hii</i> | <i>-yo-</i> | <i>n-</i> | <i>y-</i> |
| 10 | <i>n-</i> | <i>zi-</i> | <i>-zi-</i> | <i>hizi</i> | <i>-zo-</i> | <i>n-</i> | <i>z-</i> |
| 11 | <i>u-</i> | <i>u-</i> | <i>-u-</i> | <i>huu</i> | <i>-o-</i> | <i>u-</i> | <i>w-</i> |
| 14 | <i>u-</i> | <i>u-</i> | <i>-u-</i> | <i>huu</i> | <i>-o-</i> | <i>u-</i> | <i>w-</i> |
| 15 | <i>ku-</i> | <i>ku-</i> | <i>-ku-</i> | <i>huku</i> | <i>-ko-</i> | <i>ku-</i> | <i>kw-</i> |
| 16 | <i>-ni</i> | <i>pa-</i> | <i>-pa-</i> | <i>hapa</i> | <i>-po-</i> | <i>pa-</i> | <i>pa-</i> |
| 17 | <i>-ni</i> | <i>ku-</i> | <i>-ku-</i> | <i>huku</i> | <i>-ko-</i> | <i>ku-</i> | <i>kw-</i> |
| 18 | <i>-ni</i> | <i>mu-</i> | <i>-mu-</i> | <i>humu</i> | <i>-mo-</i> | <i>mu-</i> | <i>mw-</i> |

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