The relationship between syllable weight and vowel processes in Dholuo

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Abstract
Syllable weight has consequences for weight-related phenomena (Hyman 2003). In Dholuo, as far as syllable weight is concerned, there are both heavy and light syllables. For a syllable to be heavy in Dholuo, the nucleus must branch and for it to be light, the nucleus does not branch. This article shows the relationship between syllable weight and vowel processes in Dholuo. Syllable weight has an influence on phonological processes involving vowels and vice versa. These phonological processes are deletion, compensatory lengthening and glide formation. It is observed that the deleted vowel is always in a light syllable. Some deletions are followed by compensatory lengthening while others are not. The vowel that lengthens is always in a light syllable and only becomes heavy after compensatory lengthening. Compensatory lengthening therefore has the effect of changing a light syllable into a heavy one. The deleted vowel always precedes the one that is lengthened. The vowel that undergoes glide formation is always in a light syllable. Syllable weight has an effect on vowel processes, namely deletion, compensatory lengthening and glide formation because the latter three always occur in a light syllable and not a heavy one. Vowel processes also have an effect on syllable weight because compensatory lengthening gives rise to a heavy syllable. This is a mutual relationship between syllable weight and vowel processes in Dholuo.

1 Introduction
Dholuo belongs to the Western Nilotic branch of the Nilo-Saharan family of languages. It is spoken in the south western Kenya and in the northern Tanzania. The two dialects in Dholuo are the Kisumu-South Nyanza (KSN) and the Boro-Ukwala (B-U) dialects (Oduor 1990). KSN is the focus of this paper.

Dholuo has 26 consonantal phonemes including five prenasalised consonants, namely /mb, nð, nd, nj, ng/ which are treated as individual or unit phonemes and not as consonant clusters. It has 9 pure vowel phonemes, namely /i, u, e, o/ which are [+ATR] and /i, o, e, o, a/ which are [-ATR].

1 This article is partly drawn from (Oduor 2002), the author’s Ph. D. thesis.
The syllable types that exist in Dholuo are CV, V, CV, V; CVV, CVC, VC, CV:C, V:C and CVVC (Ngala 1994 and Oduor 2002). The nucleus consists of a short vowel, a long vowel or a vowel-vowel sequence. There are both open and closed syllables. So, there is a possibility of the existence of a cluster of two consonants in word medial position.

The goal of this paper is to show that there is a relationship between syllable weight and phonological processes involving vowels in Dholuo. The three phonological processes involving vowels that are discussed in this article are deletion, compensatory lengthening and glide formation. In order to show this relationship clearly, the syllable types that provide an environment for deletion, compensatory lengthening and glide formation are identified and discussed. The syllables types that emerge from these three phonological processes are also identified and discussed. It is noted that these processes were discussed by earlier researchers such as Odhiambo (1981) and Okombo (1982) but without relating them to syllable weight as the latter was not part of their objectives.

2 Syllable weight in Dholuo

According to Hyman (2003:5), the distinction observed ‘between “heavy” and “light” syllables has received considerable attention’. He also notes that syllable weight has consequences for weight-related phenomena. For a particular phonological phenomenon to be given attention, it must have a significant influence in the phonology of the language in question. In Dholuo, there are both heavy and light syllables (Oduor 2002). In other words, some syllable structures have a greater weight, than others. Heavy syllables in Dholuo are CV, V, CV:C, V:C, CVV and CVVC. Therefore, for a syllable to be heavy in Dholuo, the nucleus must branch. Light syllables are CV, V, CVC and VC. The nucleus of a syllable that is light does not branch. Some syllables do not have an onset. The onset and coda are not relevant in the weight structure of a syllable. Syllable weight has an influence on phonological processes involving vowels in Dholuo and vice versa. The discussion begins with deletion, followed by compensatory lengthening and then glide formation. They are discussed as they occur at word boundary because that is the environment in which they mostly occur and that some of these processes change the weight of the syllable in this position.

3 On the theories

The theories of generative CV - phonology model and autosegmental phonology and are still found to be instrumental in expressing the relationships that exist between the phonological phenomena identified. The three tiers (syllable tier, CV-tier and the phonemic tier) in the generative CV - phonology model of the syllable, as illustrated by Clements and Keyser (1983), are used to show the relationship between syllable weight and the relevant vowel processes. The CV tier is important in
this analysis because it shows the weight of each syllable. The phonemic tier shows the segments that delete, lengthen or glide. It also shows the sound segments that combine to form meaning words and utterances in the language. Association lines show the relationship between elements on the three tiers. They help to express instances of deletion, ressociation, lengthening or gliding.

Goldsmith (1990:74) summarises one of the goals of autosegmental phonology as being:

the reduction of natural phonological processes to changes that can be expressed in the minimal autosegmental notation, a notation that includes at its core just deletion and ressociation.

Therefore, both CV-phonology and autosegmental phonology help to show that compensatory lengthening is an instance of deletion followed by lengthening unlike Odhiambo (1981) who treats compensatory lengthening as an instance of assimilation.

4 Vowel deletion
It is the eliding of vowel sounds in certain environments. In Dholuo deletion affects vowels consonants and syllables. In this paper it is deletion of vowels that we are interested in because vowels are important in the identification of syllable weight in Dholuo. Vowel deletion occurs in monosyllabic function and content words and also in words of more than one syllable.

4.1 Vowel deletion in monosyllabic function words
The final vowel of a monosyllabic word deletes when it precedes an initial short vowel (light syllable) at word boundary. Okombo (1982) states that it is specifically the non-high vowels that are deleted. The examples in this paper show that both the high and non-high vowels are deleted. In the examples in (1) below, the monosyllabic function words are in bold type.

(1) (a) ká # ɔ-góːl → kó-góːl ‘like a frog’
(b) ká # i-k ɛː-ló → ki-k ɛː-ló ‘if you bring’
(c) má # õ-čiɛŋ → mò-čiɛŋ ‘then Ochieng’
(d) tó # i-ːtí-mó # à-ŋó → tí-ːtí-má-ŋó ‘but what are you doing’
(e) má # ɔ-foː:-wò → mò-foː:-wò ‘which is stupid’
(f) ká # à-tiɛ-nò → kà-tiɛ-nò ‘if Atieno’
The steps involved in the deletion process are shown in (2) below. The explanation of the process is provided within the diagram itself.

(2) (a) Syllable tier

```
  CV - tier
  Phonemic tier
    k  a  o  t  i  e  n  o

  'at Otieno's
  (Otieno's place)'
```

(b) Syllable tier

```
  CV - tier
  Phonemic tier
    c  v  c  v  c  v

  deletion of the vowel /a/

  k  o  t  i  e  n  o

  'at Otieno's'
```

c) Syllable tier

```
  CV - tier
  phonemic tier
    k  o  t  i  e  n  o

  deletion of the V-slot and 0-node
```

d) Syllable tier

```
  CV - tier
  phonemic tier
    c  v  c  v  c  v

  resyllabification of the consonant /k/

    k  o  t  i  e  n  o
```

The examples in (3) show that the high vowels are also deleted in the same environment as that of the non-high vowels in the examples in (1) and (2). The affected monosyllabic words are in bold type.

(3) (a) **nî # à-tuó** → **ná-tuó** 'that I am sick'

(b) **nî # ú-cié- l'mó** → **nú-cié- l'mó** 'that you (plural) are eating'

(c) **à-pi-jå # gi # ó-dô-ngô** → **à-pi-jå # gó-dô-ngô** 'Apiyo and Odongo'

(d) **kúón # gi # â-ló: t** → **kùón # gá-ló: t** 'ugali and vegetables'

(e) **mi # 3-går-jé** → **mår-går-jé** 'then he beat him'
The steps involved in the deletion process shown in (4) below are exactly the same as those illustrated in (2).

(4) (a) Syllable tier
\[
\sigma \sigma \sigma \sigma
\]
CV - tier
\[
c v \quad c v \quad c v \quad c v \quad c v
\]
Phonemic tier
\[
g \quad \# \quad a \quad \delta \quad i \quad a \quad m \quad b \quad o \quad \text{‘with Adhiambo’}
\]
\[\downarrow\]
deletion of the vowel /u/

(b) Syllable tier
\[
\sigma \sigma \sigma
\]
CV - tier
\[
c v \quad c v \quad c v \quad c v \quad c v
\]
Phonemic tier
\[
g \quad a \quad \delta \quad i \quad a \quad m \quad b \quad o \quad \text{‘with Adhiambo’}
\]
\[\downarrow\]
deletion of the V-slot and σ

(c) Syllable tier
\[
\sigma \sigma \sigma
\]
CV - tier
\[
c v \quad c v \quad c v \quad c v \quad c v
\]
Phonemic tier
\[
g \quad a \quad \delta \quad i \quad a \quad m \quad b \quad o \quad \text{‘with Adhiambo’}
\]
\[\downarrow\]
resyllabification of the consonant /g/

(d) Syllable tier
\[
\sigma \sigma \sigma
\]
CV - tier
\[
c v \quad c v \quad c v \quad c v \quad c v
\]
Phonemic tier
\[
g \quad \# \quad a \quad \delta \quad i \quad a \quad m \quad b \quad o \quad \text{‘with Adhiambo’}
\]

The rule that describes the process of deletion is given in (5) below. It states that a vowel is deleted when it precedes a word beginning with a vowel in a light syllable at word boundary.

(5) \[ V \] \[ \rightarrow \] \[ \Theta \] \[ \# \]
\[
\left[ \begin{array}{c}
\uparrow \\
V \\
\text{+ Syllable - heavy}
\end{array} \right]
\]

4.2 Vowel deletion in monosyllabic content words
Just as in Okombo (1982), it is observed in Oduor (2002) and in this article that some monosyllabic content words delete their final vowel at word boundary with the concomitant lengthening of the following vowel. Such instances are shown in the examples in (6) below. The content words are in bold type.
(6) (a) ká #5-1-bóö-ló→ká:1-bóö-ló ‘bite the mushroom’
    (b) ká # à-ciël → ká-ciël ‘one guard’

Unlike in deletion without lengthening (see (2) or (4) above), the V-slot that is temporarily floating and the syllable node immediately dominating it is not deleted because of the ressyllabication that has taken place. After ressyllabication the lengthened vowel appears to be ambi-syllabic. Dholuo does not have any ambi-syllabic sound segments; therefore, the two syllable nodes dominating the doubled vowel are merged. The vowel that deletes is light and the one that is lengthened, as a result of deletion, was initially in a light syllable. It is observed that some deletions leave room for the formation of a heavy syllable, that is, they lead to compensatory lengthening.

4.3 Vowel deletion in polysyllabic words

In polysyllabic words, a word final non-high vowel deletes at word boundary when it precedes a vowel which is in a light syllable. The syllables containing the vowels that are deleted are in bold type.

(7) (a) wi-jó # è-cò → wi-pè-cò ‘there is the bird’
    (b) ò-bò-kè # ò-tòó → ò-bò-kà-tòó ‘the leaves are dry’
    (c) ná-kó # à-ciël → ná-kà-ciël ‘one girl’

High vowels in polysyllabic words can also be deleted in the same environment as illustrated in the examples in (8). The syllables with the high vowels at word boundary are in bold type.

(8) (a) nú-mú # à-hí:-já → nú-má:1-hí:-já ‘very raw’
    (b) bú-rú # ò-rú:-mò → bú-rò:-mò ‘the ash is finished’
    (c) guò-gi # è-là:1 → guò-gò:-là:1 ‘the dogs are lost’
    (d) jà-pì-di # ò-bí:1-ŕó → jà-pì-dò-bí:1-ŕó ‘the nurse has come’

4.4 A Summary of Deletion in Dholuo

Table 1 gives a summary of the process of deletion in Dholuo. The terms trigger and target are borrowed from Campos-Astorkiza (2005) as seen in section 5. The trigger shows the syllable with the vowel that is deleted. The target shows the vowel that takes the place of the deleted vowel. The

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2 Polysyllabic words in this paper refer to words of two or more syllables. Bisyllabic and trisyllabic words are treated as part of polysyllabic words.
output shows the product as a result of deletion and it is noted that in some cases compensatory lengthening occurs. The part labelled syllable weight gives the syllable weight of the trigger, the target and the output.

Table 1 A summary of deletion

<table>
<thead>
<tr>
<th>Deletion</th>
<th>Trigger</th>
<th>Target</th>
<th>Output</th>
<th>Syllable weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>monosyllabic function words</td>
<td>CV #</td>
<td>#V</td>
<td>CV</td>
<td>1#1 → 1</td>
</tr>
<tr>
<td>monosyllabic content words</td>
<td>CV #</td>
<td>#V</td>
<td>CVV</td>
<td>1#1 → h</td>
</tr>
<tr>
<td>polysyllabic words</td>
<td>-CV #</td>
<td>#V</td>
<td>CV</td>
<td>1#1 → 1</td>
</tr>
<tr>
<td>polysyllabic words</td>
<td>-CV #</td>
<td>#V</td>
<td>CVV</td>
<td>1#1 → h</td>
</tr>
</tbody>
</table>

5 Compensatory lengthening

According to Goldsmith (1990:73):

Compensatory lengthening refers generally to a process of lengthening a segment - most commonly a vowel, but not always - which is seen as a response to a prior process which removed or in some way shortened the segments previously present.

In rule (9) Goldsmith states that X and Y are on the CV tier. M is on the phonemic tier. X and m are already linked. Compensatory lengthening extends m to Y.

![Diagram](image)

Adapted from Goldsmith (1990:73)

Campos-Astorkiza (2005: 1) defines compensatory lengthening as ‘deletion of a segment together with lengthening of another segment’. She goes beyond this definition by indicating that the deleted segment is known as the trigger while the lengthened segment is known as the target. In her
research, she identifies four logical types of compensatory lengthening. She uses the terms trigger and target to specify the four types as seen in Table 2 below.

Table 2  Four logical types of compensatory lengthening

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Trigger</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>2.</td>
<td>C</td>
<td>V</td>
</tr>
<tr>
<td>3.</td>
<td>V</td>
<td>C</td>
</tr>
<tr>
<td>4.</td>
<td>C</td>
<td>C</td>
</tr>
</tbody>
</table>

Partly adapted from Campos-Astorkiza (2005: 1)

Table 2 shows that both vowels and consonants can be deleted and lengthened. The trigger for vowel lengthening can be a consonant or a vowel. The trigger for consonant lengthening can be a vowel or a consonant. The type of deletion numbered (1) takes place in Dholuo. The remaining three do not occur as seen in the discussion in this section. Compensatory lengthening is discussed as it occurs in monosyllabic and polysyllabic words. The weight of the syllable containing the trigger as well as that containing the target is identified.

5.1 Compensatory lengthening in monosyllabic words

In Dholuo compensatory lengthening affects vowels. Compensatory lengthening is always preceded by deletion as seen in the examples in (6) and (10). The syllables containing the vowels that are deleted to the left of the word boundary are in bold type. The vowels that are lengthened after word boundary, that is, to the right side of the word boundary are also in bold type.

(10) (a) bó # 5-mě:-nà → bɔ:-mě:-nà  ‘wrap omena (a kind of small fish)’
(b) ká # 5-mě:-nà → kɔ:-mě:-nà  ‘bite omena (a kind of small fish)’
(c) lə # à-cièl → lə: -cièl ‘one axe’

The words with the deleted vowels are content words. When a vowel in a content word is deleted at word boundary, the vowel of the following word in word initial position is lengthened. In the three examples given in (10), compensatory lengthening occurs from right to left. The lengthened segment is usually to the right of the domain it spreads to. The trigger is to the left of the target.

Compensatory lengthening also takes place when the deleted word final vowel is similar to the word-initial vowel. The words in (11) show that the vowel sounds on either side of word boundary are similar. The sounds showing the environment of compensatory lengthening are in bold type.
(11) (a) kɔ # ɔ-ɔ → kɔ_:ɔ-ɔ ‘the gourd is broken’
(b) cɔ # ò-ò:r → cɔ:-ò:r ‘the toilet is locked’
(c) mɔ # ò-la:l → mɔ:-la:l ‘the oil is lost’

The lengthened vowels are all word initial vowels in light syllables. The deleted vowel is in a light syllable. Though the changes are not as clear as those of the example in (10), where the vowels involved are different, it is compensatory lengthening that has taken place in (11) and (12) because the environment is not different from that of (10). The illustration given in (12) makes the explanation clear.

(12) (a) Syllable tier

CV - tier

Phonemic tier

(b) Syllable tier

CV - tier

Phonemic tier

(c) Syllable tier

CV - tier

Phonemic tier

(d) Syllable tier

CV - tier

Phonemic tier

deletion of the word final vowel /a/ at word boundary

reassociation of the floating V -slot

merging of the two σ -nodes dominating the double vowel /a/
5.2 Compensatory lengthening in polysyllabic words

Okombo (1977) states that word final vowel deletion followed by compensatory lengthening also takes place when a word initial vowel at word boundary is the same as the word final vowel that is indicating the possessor. This seems to be the only environment for compensatory lengthening in polysyllabic words as seen in the relevant syllables bold type in (13).

(a) lüé-tí # i-tú:-cô → lüé-tí:-tú:-cô ‘you have pieced your hand’
(b) ri-ngû # ú-kê:-lô → ri-ngû:-kê:-lô ‘you (plural) have brought your meat’
(c) kó-îmbá # á-ciél → kó-îmbá:-ciél ‘my one chair’
(d) kó-îmbí # i-kê:-lô → kó-îmbí:-kê:-lô ‘you have brought your chair’

In the last two examples, /ɔ/ in kó-îmbá changes to [o] in kó-îmbí so that it is in harmony with the rest of the vowels in the sequence. The word final vowel that deletes is in a light syllable. The word initial vowel, preceded by the word final vowel, is also in a light syllable. When compensatory lengthening occurs, a heavy syllable is created. This process, therefore, takes place on a light syllable and it leads to the formation of a heavy syllable as illustrated diagrammatically in (14).

![Diagram](image_url)

(14) (a) Syllable tier
(b) Syllable tier
(c) Syllable tier
(d) Syllable tier
Once again the changes that have taken place show that the deleted segment is to the left of the one that undergoes compensatory lengthening. The direction of compensatory lengthening is therefore from right to left.

5.3 A summary of compensatory lengthening in Dholuo

Table 3 gives a summary of compensatory lengthening in Dholuo. Once again the trigger shows the syllable structure of the syllable containing the deleted vowel. The deleted vowel triggers compensatory lengthening. The syllable that contains the deleted vowel is seen in the part of the table labelled target. The product of compensatory lengthening is seen under the part labelled output. The part labelled syllable weight shows the weight structure of the trigger, the target and the output.

<table>
<thead>
<tr>
<th>Compensatory lengthening</th>
<th>Trigger</th>
<th>Target</th>
<th>Output</th>
<th>Syllable weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>monosyllabic content words</td>
<td>CV #</td>
<td>#V</td>
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</tr>
<tr>
<td>polysyllabic words</td>
<td>-CV #</td>
<td># V</td>
<td>CVV</td>
<td>1#1 → h</td>
</tr>
</tbody>
</table>

6 Glide formation

The two glides in Dholuo are /j/ and /w/. These two glides are found in non-peak positions of syllables. In other words, they are [-syllabic]. Some surface glides are derived by the process of glide formation at word boundary (Odhiambo 1981). The glide /j/ is formed from the high vowels /i/ and /i/ while /w/ is formed from the high vowels /a/ and /u/. Goldsmith (1990) summarises the rule of glide formation as seen in (15).

(15)  

\[
\begin{array}{c}
\text{c} \\
\text{X} \quad [+\text{high}] \\
\end{array}
\]

Partly adapted from Goldsmith (1990: 52)

In (15) the symbol X stands for any consonant sound. A glide is formed by associating C – slot of the CV tier with a high vowel.
6.1 /j/ formation in monosyllabic content words

When a monosyllabic word ending in a high front vowel precedes a word beginning with either a non-high vowel or a high vowel with the opposite value for the feature [back], there is an obligatory /j/ formation (Okombo (1977) and Odhiambo (1981)). Obligatory /j/ formation seems to occur in monosyllabic content words. The monosyllabic content words are in bold type in (16) below.

(16) (a) gi # ɔ-tiè-nò → giò-tiè-nò 'Otieno's property'

(b) pì # ɔ-kièl → pjò-kièl 'water has been brought'

The word in (17) shows the steps involved in the process of glide formation.

(17) (a) Syllable tier

(b) Syllable tier

(c) Syllable tier

(d) Syllable tier
The word /jɪ/ ‘people’ is an exception as its vowel can undergo both deletion and glide formation. Since /jɪ/ is a content word, after the deletion of the vowel /i/, there is compensatory lengthening of the following vowel as seen in (18). The syllables containing the changes as a result of the two vowel processes are in bold type.

(18) (a) jì # ū-lù-o-ngò → jì jù-lù-o-ngò or jì -lù-o-ngò ‘have you called people’
(b) jì # ā-ři̯-jò → jì jā-ři̯-jò or jā-ři̯-jò ‘two people’
(c) jì # ā-bì:c → jì jā-bì:c or jā-bì:c ‘five people’
(d) jì # ō-ři̯-ŋò → jì jō-ři̯-ŋò or jō-ři̯-ŋò ‘people have run away’

6.2 /j/ formation in monosyllabic function words

Monosyllabic functions words with a CV syllable structure undergo /j/ formation when their front high vowels are followed by vowels that are either non-high or high with the opposite value for the feature [back]. These high vowels in the final position can optionally undergo either glide formation or deletion (Odhiambo (1981:93-94)). These monosyllabic function words are in bold type in (19). The changes that take place in them are also in bold type.

(19) (a) gí # ā-tié-nò → gjá-tié-nò or gá-tié-nò ‘with Otieno’
(b) ni # ō-tié-nò → njó-tié-nò or nō-tié-nò ‘that Otieno’
(c) mi # ō-tié-nò → mjó-tié-nò or mō-tié-nò ‘then Otieno’
(d) gí # ō-řó-kå-má-nò → gjé-řó-kå-má-nò or gé-řó-kå-má-nò ‘with thanks’
(e) gí # ū-mé → gjú-mé or gú-mé ‘with his/ her/ its nose’

6.3 /j/ formation in polysyllabic words

Obligatory /j/ formation occurs in polysyllabic words when a front high vowel precedes a word that begins with a different vowel at word boundary. Very few words fall under this category. Some examples are given in (20).

(20) (a) dā-pí # ō-dō:nè → dā-pjó-dō:nè ‘the water pot has remained’
(b) dā-pí # ō-ŋé → dā-pjó-ŋé ‘there is no water pot’
(c) nā-oí # ā-ciël → nā-ejā-ciël ‘one child’
(d) nā-oí # ō-ři̯-ŋò → nā-ojá-ři̯-ŋò ‘the child has run away’

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Optional glide formation is more common. It occurs in words such as those found in the examples on (21). This means that glide formation may or may not occur.

(21) (a) wǝ-ndî# ǝ-duò-gò → wǝ-ndjó-duò-gò ‘your visitors have come back’
   (b) ji-ri # ǝ-dé:k → ji-rjá-dé:k ‘three girls’
   (c) pèl-1ni # ǝ-là:1 → pèl-njò-là:1 ‘the knives are lost’

6.4 /w/ formation in monosyllabic words
It is also noted that, just as in /j/ formation, when a monosyllabic content word ending in /u/ or /u/ precedes a word beginning with either a non-high vowel or a high vowel with the opposite value for the feature [back], there is an obligatory /w/ formation. The examples in (22) show obligatory /w/ formation. The affected monosyllabic content words are in bold type.

(22) (a) fú # i-nèː-gò → fwi-nèː-gò ‘the puff adder is being killed’
   (b) fú # ǝ-ǝd → fwód-ǝd ‘the puff adder is dead’
   (c) jó # ǝ-1ɔːt → jwá-1ɔːt ‘tear the vegetable’

Dholuo does not seem to have monosyllabic function words with the back vowels /u/ and /u/.

6.5 /w/ formation in polysyllabic words
It is observed that optional /w/ formation occurs when words of two or more syllables that end in a high back vowel precede words beginning with a different vowel. The syllables with the vowels that undergo optional glide formation are in bold type in (23).

(23) (a) bú-qqú # ǝ-ː-rè → bú-ngwè-ː-rè ‘where is the forest’
   (b) nú-mú # ǝ-ː-híː-ːná → nú-mwá-ː-híː-ːná ‘very raw’
   (c) bú-rú # ǝ-ː-rúː-mò → bú-rwó-rúː-mò ‘ash is finished’
   (d) à-gú-lú # ǝ-ː-tɔːrː → à-gú-lwó-tɔːr ‘the pot is broken’

The examples show that the vowel following the glide can either be in a light syllable or a heavy syllable. The glide is mostly formed before a light syllable.

6.6 A summary of glide formation in Dholuo
Table 4 below provides a summary of glide formation at word boundary in Dholuo.
Table 4 Glide formation

<table>
<thead>
<tr>
<th>Glide formation</th>
<th>Target</th>
<th>Trigger</th>
<th>Output</th>
<th>Syllable weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>monosyllabic function words</td>
<td>CV #</td>
<td>#V</td>
<td>CCV</td>
<td>1 # 1 → 1</td>
</tr>
<tr>
<td>CV #</td>
<td>#VV</td>
<td>CCVV</td>
<td>1 # h → h</td>
<td></td>
</tr>
<tr>
<td>monosyllabic content words</td>
<td>CV #</td>
<td>#V</td>
<td>CCV</td>
<td>1 # 1 → 1</td>
</tr>
<tr>
<td>CV #</td>
<td>#VV</td>
<td>CCVV</td>
<td>1 # h → h</td>
<td></td>
</tr>
<tr>
<td>polysyllabic words</td>
<td>-CV #</td>
<td># V</td>
<td>CCV</td>
<td>1 # 1 → 1</td>
</tr>
<tr>
<td>-CV #</td>
<td># VV</td>
<td>CCVV</td>
<td>1 # h → h</td>
<td></td>
</tr>
</tbody>
</table>

In glide formation, the target comes before the trigger.

7 Conclusion
This article has analysed the relationship between syllable weight and vowel processes. The deleted vowel is always in a light syllable. The vowel that lengthens is always light and only becomes heavy after compensatory lengthening. Compensatory lengthening therefore has the effect of changing a light syllable into a heavy syllable. The vowel that undergoes glide formation is always in a light syllable. Syllable weight has an effect on vowel processes, namely deletion, compensatory lengthening and glide formation and vowel processes have an effect on syllable weight. The relationship between syllable weight and vowel processes is mutual.

Abbreviations and symbols
C: consonant, h: heavy syllable, l: light syllable, V: vowel

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[+ATR]: Advance Tongue Root,  [-ATR]: Retracted Tongue Root
σ: syllable node,  -: syllable boundary,  #: word boundary,  →: becomes or is realized as
`: low tone,  `: high tone,  '?': Falling tone,  `': downstepped high tone

References