THE PHONOLOGY OF JOOLA HULUF

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Part of the interest in the phonology of Jóola Huluf is that there is not only a difference between short versus long vowels, but there is also a difference between a long vowel and a sequence of short vowels. Also of interest is that in predictable pitch sequences in words of two syllables, the pitch differs in accordance with the make up of the word. If the word ends in a long vowel followed by a voiced consonant, there is a downglide; if the word ends in a voiceless consonant, there is no downglide. In a word with a long vowel followed by a syllable with a short vowel, there is a downstep, etc.

Un point d'intérêt dans la phonologie du joola (diola) huluf découle du fait qu'il y a non seulement une distinction entre voyelles courtes et voyelles longues mais aussi une distinction entre voyelles longues et une séquence de voyelles courtes. D'intérêt également sont les schémas prévisibles de hauteur musicale dans les mots de deux syllabes. Les schémas de hauteur musicale diffèrent selon le canon syllabique du mot. Si la dernière voyelle du mot est longue et suivie d'une consonne sonore, il y a une rechute de la hauteur musicale. Si la dernière voyelle est suivie d'une consonne sourde, il n'y a pas de rechute. Dans un mot dont le canon syllabique est voyelle longue suivie de voyelle courte, il y a un 'downstep' entre les deux syllabes.

0. INTRODUCTION

Jóola Húluf is a language spoken¹ in the Department of Ouassouye, in the central western part of lower Casamance, a region of southern Senegal. This language is spoken by a group of villages which frequently meet together for fetish (hunii) ceremonies and which constitute the Huluf community. There are fifteen villages in all.² The total population numbers around 10,000.

The Huluf community can be broken down into three subgroups: Ayuun, Huluf, Seelek. Each of these groups can, in turn, be broken down into smaller subgroups. A number of slight variations exist between these subgroups in terms of intonation and semantics. These differences do not in any way hinder mutual understanding between the subgroups. Variation may be observed even between villages of the same subgroup.

1. CONSONANT PHONEMES

In Jóola Húluf the consonant phonemes are shown in (1).

<table>
<thead>
<tr>
<th></th>
<th>Bilabial</th>
<th>Alveolar</th>
<th>Alveopalatal</th>
<th>Velar</th>
<th>Glottal</th>
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<tbody>
<tr>
<td>Stop Vls</td>
<td>t</td>
<td>k</td>
<td>?</td>
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<tr>
<td>Vd</td>
<td>b</td>
<td>d</td>
<td>j</td>
<td>g</td>
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<tr>
<td>NasalVd</td>
<td>m</td>
<td>n</td>
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<td>FricativeVls</td>
<td>f</td>
<td>s</td>
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<td>LateralVls</td>
<td>l</td>
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<td>Vd</td>
<td>w</td>
<td>j</td>
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</tbody>
</table>

¹ Bernard Diatta is a native speaker of Jóola Húluf. He is responsible for the data in this article. Eunice Pike is responsible for the analysis and presentation of the data. We appreciate very much the help given by Sharon Rand. She was constantly interpreting French for Pike and English for Diatta. She also gave suggestions for the analysis.

² This language is spoken by a group of villages located in southern Senegal. They are as follows: Niambalang, Carouanate, Siganar, Edioungou, Djivent, Kahinda, Sengalene, Calbòne, Ouassouye, Ouout, Diakene, Diandene, Essaout, Boukitingo, and Emaye.
1.1 STOPS

Some voiced and voiceless stops in Jóola Húluf are contrasted in (2) though the voiced alveolar stop /d/ is rare.

(2) /t/ versus /d/
   eindum       drum
   mante'       maybe

/k/ versus /g/
   kókíik   alcoholic drink made from honey
   kageet   to go around

However, there is no contrast between voiced and voiceless bilabial stops. The phoneme /b/ is voiceless when it occurs prepause as in (3a) and voiced when in initial or medial position in a word as in (3b).

(3) a. uusub   yams
    b. banak   sun
         ebök   mosquito

There is a contrast between voiced and voiceless velar stops occurring in the word in initial (4a), medial (4b), and final (4c) positions.

(4) a. gaggag   cluttered
      kageet   to go around
    b. kagoto   weak
           bakóot   mange
    c. bateg   to collect money
           kókíik   an alcoholic drink made from honey

Two identical voiced stops may occur in sequence as in (5a) as well as two identical voiceless stops in (5b). When voiceless stops occur prepause, they are aspirated as shown in (6).

(5) a. lababba   he sat down
      lagaggaj'   he touched it
    b. kakttten   to explain
         lakttkuf   he wrote

(6) kaat [tʰ]   foot
     ebök [kʰ]   mosquito
     bakóot [tʰ]   mange
     banak [kʰ]   sun

There is also a voiced alveopalatal affricate /j/ shown in (7).

(7) jikil   eye
     ejaw   to go
     hótɕ   a cork

1.2 NASALS

The voiced nasals /m n ɲ ŋ/ each occur in the initial, medial, and final positions in a word as shown in (8). Also, two identical nasals may occur in sequence as demonstrated in (9).

(8) /m n ɲ ŋ/ each occur in the initial, medial, and final positions in a word as shown in (8). Also, two identical nasals may occur in sequence as demonstrated in (9).
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1.3 FRICATIVES

The voiceless fricatives /ʃ s j h/ are given in (10) in initial, medial, and final positions in the word. The fricatives /s/ and /ʃ/ may also occur in sequences of identical phonemes as in (11).

(10) Initial Medial Final

/f/ faafa father hofalaj a thunder elaf a basket for rice
/s/ sooʃ oysters kasaab to counsel kahas shrimp
ʃʃʃʃaab It is a little bosaʃ hunger botaʃ ceiling
/h/ hɔtaj a wrestling kahɛ a to weave katal a stinger

(11) sissis It has been salted.
ʃʃʃʃ It is cut.

1.4 LATERALS

The voiced and voiceless laterals /l l/ are used in initial, medial, and final positions in a word in (12). Two identical laterals may also occur in sequence as in (13).

(12) Initial Medial Final

/l/ leeli-leeli insipid asalal a lamb batowol to pick something not yet ripe
ʃʃʃʃọọọọl disorganized kaʃaw to beg maʃal hardness

(13) labɔɔb he talked
leleʃleqet he is angry

1.5 GLIDES

The glides are represented in Jóola Húluf by the labial glide /w/ and the palatal glide /ʃ/ with examples given in (14).

(14) Initial Medial Final

/w/ want manioc muwol little fish kalaʃ to beg
ʃʃʃʃʃʃʃ jana one bajaas trip ohaj refuse
2. VOWEL PHONEMES

2.1 VOWEL HARMONY

There are ten vowels in Jóola Holuf which are divided into two sets of five each in (15).

\[
\begin{array}{cccccc}
\varepsilon & \circ & \iota & \varepsilon & o \\
\hline
\text{a} & \text{e} & \text{a} & \text{e} & \text{o} \\
\text{Set 1} & \text{Set 2} & \text{(lax)} & \text{(tense)}
\end{array}
\]

Within a word there is vowel harmony, i.e., the vowels of only one set are used. No word is composed of vowels from both sets.\(^3\) Example (16) gives words from Set 1 and (17) gives words from Set 2.

(16) kakil vein
elal bed
kannen to keep
bOlak to work
bakọt mange

(17) jikil eye
csuk a village
kalak elastic
ekosum carrion-eater
bagot a weak person

2.2 SHORT VERSUS LONG VOWELS

In Jóola Hüluf there is contrast between short vowels and long vowels as shown in (18). Occasionally two long vowels may occur in the same word as in (19).

(18) katim a funeral ceremony
kakil vein
eleli your (wild) fruit
kabet to knock down
elal bed
kalak a beam that supports the ceiling
kakọl to lock
kabọt to pull out
kagol peanut plant
kamul ripe
katimm evening
kakul palm tree fiber
eleli insipid
kabet to dilute
elaal a small river
kalak elastic
kakọl to exceed
kabọt to weave a rope
kagöl dark corner in a house
or a big tree
kamuul to make bricks

(19) eyaameen a goat
katiimeel dinner, evening meal

2.3 VOWEL SEQUENCES

A sequence of like vowels has a different effect on the stress than a long vowel does. In §6 we will see that stress occurs on the last syllable of the word if that

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\(^3\) J. David Sapir described vowel harmony as occurring in Diola-Fogny. The vowel harmony of Jóola Hüluf is very similar to that described by Sapir (1965). (Diola and Jóola are different spellings of the same word. Diola is the French spelling; Jóola is the spelling in the orthography used by the people themselves.)
syllable ends with a consonant. Stress occurs on the penultimate syllable when the word ends in a vowel.

The final syllable of hooleen ‘a flock of birds’ has a long vowel and ends in a consonant. Therefore stress occurs on that syllable.

In kaleen ‘to make place’, there is a sequence of three syllables with short vowels. Stress occurs on the last syllable.

In kaleen ‘never ever’, the last syllable with a long vowel is preceded by a syllable with a short vowel of the same quality.

In addition to sequences of like vowels, vowels of different quality may occur in sequence as in (20).

(20) au  aatc  let him stand up
ae  aelen  a little stream
aeen  let him row
ao  ao  you
et  etq  flying termite
eo  eot  a star
eoelen  a sham
ta  tap  let me cultivate
ejanglat?  the dog
ei  eitum  feather in a bird’s wing
eu  euu  a fly
oi  oit  let him fly
one  a man
oe  oeen  it was him
oa  oalen  stir up (IMPERATIVE)
oi  olaat  you can’t
oq  ool  tear off (IMPERATIVE)
iu  uilen  mint plants
uitum  bird feathers

3. CONSONANT CLUSTERS

All consonant clusters in Jóola Húlf, except for clusters of like consonants, begin with a nasal. They do not occur in initial position in a word, but they may occur medially (21) or finally (22), and are always in the final syllable of the stem.

(21) esomba?  tobacco
tanfom  all together
esanta?  a wound
esanjoo  a mouse
hoqanka  okra
seqki-seqki  It is deep.
seqii-segni  That hurts.

(22) ekamb  a handful of straw
hoqanta  bamboo
katant  beach
kaland  genealogy
kantaf  to splatter
kaqenq  zinc for a roof
hoqang  wheel
4. THE GLOTTAL STOP PHONEME

The glottal stop phoneme occurs only in word-final position. In that environment it contrasts with a word-final /h/ and a word-final vowel as shown in (23). It is interesting to note that the glottal stop is lost when it is followed by another word within the phrase as in (24).

(23) kagoʔ to touch
tkoh I scratch
ata Let him stand up.
amataʔ a shepherd
katah a stinger
faafa father
haantʔ no
kaʔtʰ to fill in a whole
ejaŋtů a dog
əkmμutůʔ We don’t trust him.
esiʔ to cook
eleli your wild fruit

(24) taateʔ here
taate laɓe here he said
esanʃoʔ a mouse
esanʃo laɓe a mouse he said

5. INTONATION

5.1 PREDICTABLE PITCH CONTOURS

5.1.1 Downglide

In Jóola Húluf, one- and two-syllable words end in a slight voiced consonant DOWNGLIDE when in prepause position, if the vowel is long as in (25). The pitch contour is [——]. If the vowel is short, or if the final consonant is voiceless as in (26), there is no downglide. The pitch contour is [——].

(25) aŋtul a child
honɔm to sell, to buy
sunaŋ rice
kəŋliŋ tooth
bọleel to look for wood
kəsuum goodness

(26) bajaas trip
kaʃeef to build
kaʃɔʃ to waste
ẹloɔf house

If the final consonant is a voiced continuant /m n ɲ j l/ and the vowel is long as in (27), there is a downglide: [——] and [——]. But, if the vowel is short, it does not downglide as in (28) [——].

(27) ɓool face
ɛjaameen goat
sunaŋ rice
kəsuum goodness
(28) mal        water
celal        bed

Two-syllable words, such as in (29), end in a long vowel downglide: [−−].

(29) susso        birds
sku    u        thief

5.1.2 Downstep

If the last two syllables are long as in (30), there is a DOWNSTEP between the next to the last and the last syllable: [−−].

(30) teetaam  on the ground
gaaameen  the goat
kakejaam  a grain of rice

When the last syllable is short, following a long vowel or a vowel cluster, there is also downstep: [−].

(31) haant?  no
eehee?  yes

5.1.3 Upstep

There is UPSTEP on the last syllable of the penultimate word in a sequence of two words: [− − −].

(32) jikil lalbe  eye he said
chutoom lalbe  lamp he said
ebok lalbe  mosquito he said
elooof lalbe  house he said

5.1.4 Multiple syllables

For three-syllable words, the pitch in (33) is: [− −]. However, when it is a case of the stem being followed by a suffix, it is the last syllable of the stem which is raised. In booltkenabo? ‘the training’, -abo? is a suffix meaning ‘DEFINITE ARTICLE’ and has a pitch: [− − −].

(33) enaalt  cat
elobba  dress
kokiimeel  dinner
gaaameen  goat
lalbo  he fell
lakkkuuf  he wrote

In four syllable words in which the last syllable is part of the stem, the penultimate syllable is raised in pitch as in (34): [− −].

(34) hosahbet  towel
sumunaso  the trunks
loobbalob  we two spoke
slooofaso?  the houses
hooolooafa?  the big house

5.2 CONTRASTIVE CONTOURS.

Two contrastive intonation contours which are easy to hear are the question contour requesting affirmation and the negation versus a statement contour.
In a question, the whole sentence is raised in pitch. In the answering statement, the voice is low pitch and relaxed as in (35).

(35) enaaltat etetet (high pitch) Did the cat run?
enaltaat etetet (low pitch) The cat ran.
laalo enaalt (high pitch) Is that a cat?
laalo enaalt (low pitch) That is a cat.

6. STRESS

Stress must be considered to be extra emphasis or loudness and not length. For the most part, stress occurs on the last syllable of the word including those ending with a glottal stop as in (36). If, however, the word ends in a vowel, stress occurs on the penultimate syllable in (37).

(36) ho'bē'kēl palm nut
kasō'ō'hen to give a gift
ekū'kōm a needle
maŭ'gen the truth
ka'nah a sting
e'sih to cook
ho'bo'o'bo? a lake
e'bēŋ'ka? a duck
ka'bo'ko? to give birth

(37) ka'sala to sacrifice
e'feugu to sting
ēge'leste peanut
ka'fo'ko to be hurt
e'leli your fruit

7. SUMMARY

In Jóola Húluf there is vowel harmony with two sets of vowels such that each word has vowels from only one set.

There is not only a contrast between long versus short vowels, but there is also contrast between a long vowel versus a sequence of two identical short vowels.

The glottal stop has a restricted distribution, occurring only in the final position in a phrase. A word which ends in glottal stop at the end of a phrase, occurs without a glottal stop when in a different environment.

In an unemotional statement, the pitch contours are predictable. There is a contrast in pitch between a question and a statement.

REFERENCES