RECONSTRUCTING NOMINAL TONE IN EDOID

INTRODUCTION

[1] Long term goals: (1) reconstruction of the Proto-Edoid tone system and (2) comparison to tonal systems within Benue-Congo (e.g. Igboid, Defoid, etc.)

[2] Immediate goal: establishing tonal correspondence sets within the four major branches of the Edoid family for nouns

[3] Example of tonal correspondence

<table>
<thead>
<tr>
<th>Branch</th>
<th>Delta</th>
<th>South West</th>
<th>North Central</th>
<th>North West</th>
<th>Proto Edoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Degema</td>
<td>Engenni</td>
<td>Urhobo</td>
<td>Okpe</td>
<td>Edo</td>
</tr>
</tbody>
</table>

[4] There are a number of issues which complicate establishing such tonal correspondence sets

[5] Issue 1: There is a lack of centralized data to facilitate tonal comparison
   a. Lexical material which is fully tone marked for many Edoid languages is difficult to find, non-existent, or of limited usefulness
   b. E.g. Urhobo dictionary (Ukere 2005 [1986]): collapses HL and HM

[6] Issue 2: There is a great deal of “irregularity” within the tonal correspondences across the different branches
   a. E.g. /HL/ within Esan (North Central branch) corresponds to cognates of /LL, LHL, HLM, LHM, LH/ within Degema (Delta branch)

[7] Theoretical importance
   a. Violation of the Regularity of Sound Change principle – a cornerstone of the Neogrammarian Hypothesis
   b. An original formulation goes back to Osthoff & Brugmann (1878)
      i. “every sound change, inasmuch as it occurs mechanically, takes place according to laws that admit no exception” (Labov 1981:268, quoting translation of original by Lehmann 1967:204)
   c. I.e. the null hypothesis is that a tone pattern in one Edoid language should correspond uniformly to another tone pattern in some other Edoid language across the entire (nominal) lexicon

[8] As it stands, segmental sound change has been established as largely following the regularity of sound change principle
   a. However, the extent to which suprasegmental sound change follows the regularity of sound change principle has not clearly been established empirically at this point

SUMMARY OF FINDINGS (AT THIS STAGE)

[9] Limited number of correspondence sets are established
   a. Highlights limited role of tone in Edoid for lexical contrast

[10] Can reconstruct them into specific tonal groups (whose exact phonetic and phonological representation up for debate)
   a. Delta: *H and *L
   b. South West (SW): *H and *L (possible: *L-2)
   c. North Central (NC): *HL and *L (possible: *H)
   d. North West (NW): *HL and *L


<table>
<thead>
<tr>
<th>Tonal group</th>
<th>Delta</th>
<th>South West</th>
<th>North Central</th>
<th>North West</th>
<th>Proto Edoid</th>
<th># of reconstructed forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>*L</td>
<td>*L</td>
<td>*L</td>
<td>*L</td>
<td>*L</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>*L</td>
<td>*L</td>
<td>*HL</td>
<td>*HL</td>
<td>*HL</td>
<td>40</td>
</tr>
<tr>
<td>3</td>
<td>*H</td>
<td>*H</td>
<td>*HL</td>
<td>*H</td>
<td>*H</td>
<td>31</td>
</tr>
<tr>
<td>(4)</td>
<td>(*H)</td>
<td>(*H)</td>
<td>(*H-2)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5)</td>
<td>(*L-2)</td>
<td>(*L-2)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RELEVANT BACKGROUND ON EDOID AND EDOID LINGUISTICS

[12] The Edoid family - subgroup within Benue-Congo (Niger-Congo phylum)
   a. Located around Edo and Delta states, southern Nigeria
The Edoid family constitute approximately 25 “languages” (with substantial dialect diversity), which group into 4 separate groups: North-West, North-Central, South-West, and Delta (the furthest south).

Grouping based on shared sound changes and lexical innovations (established in Elugbe 1989)

- Provides segmental reconstruction of approximately 200 Proto-Edoid words
- 4 Edoid sub-groups do not further subgroup together and form a “rake”

No tonal reconstruction at this point within Edoid (to my knowledge)

- “It seems clear, however, that PE may not have classified its verbs tonally, though its nouns did fall into different tone groups.” (Elugbe 1989:100)

Small background on Edoid nouns and tone

- Nouns in Edoid are typically 2-4 syllables.
- First syllable is almost always a syllable containing only a vowel, which is synchronically or diachronically a noun-class prefix

Noun class markers (both synchronically and diachronically) do not appear to bear their own tone (i.e. not fixed across the class of nouns)

- E.g. See Class 8 prefix /a-/ in North Ibie (Masagbor 1989:79) below
- Bears L, H, or LH (rising) tone, depending on the lexical root

In general, Edoid has limited (lexical) tonal contrast

- Widely known that verbs do not lexically contrast for tone
- Tone on verbs determined by morpho-syntactico-semantic contexts, i.e. only grammatical tone

Often skewed tone patterns – E.g. Emai (North Central)

- Egbokhare (n.d.; p.c.) reports “Nouns appear to show a preference for HL(L) and LL(L) patterns. These account for almost 70% of the non-complex Emai noun vocabulary. Other patterns such as LLH, HHL, and LH(LH) account for the remaining 30%” (bolding mine)

The Edoid languages often have restrictions against specific lexical tone patterns

- Degema – none: *LL; marginal: *HL, *HH
- North-West and North Central in general: *HH/HHH; a low number of words with rising contours (e.g. LH, LLH, etc.)

Edoid languages which appear to have the most contrasts and least amount of lexical restrictions: Edo (Bini), Urhobo, North Ibie – conservation or innovation?

Establishing Correspondence Sets

The established correspondence sets are based on proposed cognates in different Edoid languages (based on segmental reconstruction and semantic meaning)

I look at 358 cognate nouns in Edoid – each branch displays only a subset of this full set of cognates

Data Sources – see References at end

- Elugbe (1989) [Many languages]
- Agheyisi (1986) [Edo]
- Schaefer & Egbokhare (2007) [Delta Edoid]
- Donwa-Ifofe (1986) [Isoko]
- Elimelech (1976) [Etsako]
- Elugbe & Schubert (1976) [Oloma]
- Kari (2007) [Degema]
- Masagbor (1989) [North Ibie]
- Thomas & Williamson (1967)
- Ekere (2005) [Urhobo]
- Evarista Osiruemu - Field notes on Esan
- Personal field notes on Urhobo, Okpe (SW), Edo, and Esan

Delta Edoid

- Delta Edoid: Degema, Epie-Atisa, and Engenni
  - Establish 102 cognate nouns in Delta Edoid
  - Reconstruct two tone groups: *L and *H
  - Account for nearly 90% of the cognate nouns found in Delta

The first reconstruction set I call Proto Delta Edoid *L shown in [26] below

- Within this table, I reconstruct this as *L due to the lack of /LL/ in Degema
- Suggests that the /H/tone in Degema was an innovation due a restriction against an all L lexical word
The second reconstruction set I call **Proto Delta Edoid *H**, shown in [27]
a. Here, a *H* tone occurs somewhere in the word in all three branches

**Delta Reconstruction set 1 – Proto Delta Edoid *L***

<table>
<thead>
<tr>
<th>Translation</th>
<th>Degema</th>
<th>Epie-Atisa</th>
<th>Engenni</th>
<th>Proto Delta Edoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>animal/meat</td>
<td>E-nhamhi</td>
<td>畜牧</td>
<td>猪</td>
<td>*L</td>
</tr>
<tr>
<td>native doctor</td>
<td>O-ọọ</td>
<td>厩</td>
<td>疳</td>
<td>*L</td>
</tr>
<tr>
<td>head</td>
<td>U-chimi</td>
<td>坳</td>
<td>耳</td>
<td>*L</td>
</tr>
</tbody>
</table>

**Delta Reconstruction set 2 – Proto Delta Edoid *H***

<table>
<thead>
<tr>
<th>Examples</th>
<th>Degema</th>
<th>Epie-Atisa</th>
<th>Engenni</th>
<th>Proto Delta Edoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>bone</td>
<td>Ṥụbụ HMM</td>
<td>ivement HLL</td>
<td>achuset</td>
<td>*H</td>
</tr>
<tr>
<td>song(2)</td>
<td>ṣẹvi HM</td>
<td>ivement HLL</td>
<td>SqlCommand</td>
<td>*H</td>
</tr>
<tr>
<td>paddle</td>
<td>ṽi ọnu LHL</td>
<td>ọvọ LHL</td>
<td>ọvọ LHH</td>
<td>*H</td>
</tr>
<tr>
<td>Other – these show irregularities</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**South-West Edoid***

**Establish 132 cognate nouns in SW Edoid**
a. Reconstruct two tone groups: *L and *H (accounts for over 90%)
b. Another potential proto-SW tone group: *L-2 (discussed at end of this talk)

**SW Reconstruction set 1 – Proto SW Edoid *L***

<table>
<thead>
<tr>
<th>Translation</th>
<th>Proto-Edoid</th>
<th>Eruwa</th>
<th>Isoko</th>
<th>Okpe</th>
<th>Urhobo</th>
<th>Uvbie</th>
<th>Proto SW Edoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>night</td>
<td>A-coNa</td>
<td>ọvọ LLL</td>
<td>ọvọ LLL</td>
<td>ọvọ LLL</td>
<td>ọvọ LLL</td>
<td>ọvọ LLL</td>
<td>*L</td>
</tr>
<tr>
<td>tongue</td>
<td>U-dhamhi</td>
<td>ọvọ LLL</td>
<td>ọvọ LLL</td>
<td>ọvọ LLL</td>
<td>ọvọ LLL</td>
<td>ọvọ LLL</td>
<td>*L</td>
</tr>
<tr>
<td>copse</td>
<td>O-dhimhi</td>
<td>ọvọ LLL</td>
<td>ọvọ LLL</td>
<td>ọvọ LLL</td>
<td>ọvọ LLL</td>
<td>ọvọ LLL</td>
<td>*L</td>
</tr>
<tr>
<td>Other – these show irregularities</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Buyer Beware**: we see that this group actually corresponds to a number of sub-correspondence sets – e.g. HLL and LHL in Epie-Atisa conflated together
a. Conflicted to get enough numbers to compare to other Edoid groups
b. We should accept that this likely corresponds to more than one reconstructed value, though for the moment I collapse them into only tone group – *H
The distribution of /HL/ vs. /LH/ in Okpe has not been clearly established, and they do not appear to co-vary uniquely with other tone groups in other branches.

**SW Reconstruction set 2 – Proto SW Edoid *H**

a. **Very messy** – not very clear, esp. with regard to Urhobo (highlighted below)

b. What they have in common is the presence of a High tone in all SW language reflexes

<table>
<thead>
<tr>
<th>Translation</th>
<th>Proto-Edoid</th>
<th>Eruwa</th>
<th>Isoko</th>
<th>Okpe</th>
<th>Urhobo</th>
<th>Uvbie</th>
<th>Proto SW Edoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>child(1)</td>
<td>O-mo</td>
<td>ṭọ́ mọ́</td>
<td>ṭọ́ mọ́</td>
<td>ṭọ́ mọ́</td>
<td>ṭọ́ mọ́</td>
<td>ṭọ́ mọ́</td>
<td>*H</td>
</tr>
<tr>
<td>ear</td>
<td>ghU-chOgi</td>
<td>0</td>
<td>ògí HH</td>
<td>ògí LH</td>
<td>ògí LHH</td>
<td>ògí LHH</td>
<td>*H</td>
</tr>
<tr>
<td>rope(2)</td>
<td>òfì</td>
<td>òfì HL</td>
<td>òfì LH</td>
<td>òfì HH</td>
<td>òfì LHH</td>
<td>òfì LHH</td>
<td>*H</td>
</tr>
<tr>
<td>cotton/thread</td>
<td>O-dhudhu</td>
<td>0</td>
<td>òlùlù LHH</td>
<td>òrùrà LHH</td>
<td>òlùlù LHH</td>
<td>òrùrà LHH</td>
<td>*H</td>
</tr>
</tbody>
</table>

**North-Central Edoid**

<table>
<thead>
<tr>
<th>Field</th>
<th>Proto-Edoid</th>
<th>Edoid</th>
<th>Edo</th>
<th>Edo/Edo &amp; Edoid</th>
<th>Proto-Edoid</th>
<th>Edoid</th>
<th>Edo</th>
<th>Edo/E&amp; Edoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**NC Reconstruction set 2 – Proto NC Edoid**

**NC Reconstruction set 3 – Proto NC Edoid**
NORTH-WEST EDOID

“North West Edoid keeps us in business” – Francis Egbokhare (p.c.)

I present data from 7 varieties/languages of North-West Edoid: Oloma, Emhalhe, Ibilo (Okpamheri), Uhami, Ehueun, Ukue, and North Ibie

a. Relation of North Ibie to North West (or North Central) not clearly established at this point

Establish 68 cognate nouns in NC Edoid – Lowest number of all branches studied

a. Reconstruct two tone groups: *HL and *L
b. Shown in the tables in [55] and [56] on page 12

We should note one caveat for NW Edoid – the surface tones and the phonological tones are not necessarily the same – and can be quite different

Elugbe (1989:93, citing Laniran 1981) notes that in Emhalhe e.g. /LL/ is realized as [FL] in “nouns as lexical items”, and citing the following changes

a. /LL/ [FL]
b. /LH/ [LF]
c. /HL/ [HL']
d. /HM/ [HL] (falling to low part of pitch range)

This speaks to the necessity to understand both the surface phonetics patterns and the underlying tonal system (as it operates to create lexical contrast) present in each Edoid language
CROSS-BRANCH TONE COMPARISON

We have established the tone groups for the four branches of Edoid.

a. These are not necessarily the reconstructed phonological or phonetic tone values themselves.
b. I.e. *H tone group should not necessarily be interpreted as */HL/ *[HF] or something similar at this point.

I acknowledge that there is a large degree of irregularity in tonal correspondences within each branch, all of which requires greater data and examination.

Major question now: What are the patterns that we can see through the noise?

Cross Branch tone group correlation

a. Establishing the degree of correlation between the different reconstructed Edoid branch tone groups – allows to propose reconstructed values.
b. For example, how often does Proto Delta Edoid *L correlate with a *L in Proto SW Edoid, Proto NC Edoid, and Proto NW Edoid?

Cross Branch comparison

a. Light shading – Strong Correlation
b. Dark shading – No correlation
c. No shading – Some (limited) correlation

Edoid Branches | Delta | SW | NC | NW
--- | --- | --- | --- | ---
| Reconstructed Branch Tone | *L | H | *L | H | *L | H | *L | H | *L | H |
| n | 61 | 30 | 63 | 59 | 99 | 47 | 11 | 37 | 22 | |

Delta

*H 61 - X X X X X X X X
*H 30 X - X X X X X X X X

SW

*L 63 30 1 - X X X X X X
*H 59 6 12 - X X X X X X

NC

*HL 99 28 12 33 22 - X X X X
*H 47 18 0 9 6 X - X X X X
(*H?) 11 1 2 0 4 X X - X X

NW

*HL 37 16 8 20 8 29 0 / - X
*H 22 13 1 11 6 2 16 / X -

For example, a Proto Delta *H correlates with a Proto SW *H in 12 instances, e.g.:

Transliteration | Proto-Edoid | Degema | Engemi | Epic | Er eruwa | Isoko | Okpe | Urhobo | Uvbie | Proto-Edoid
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
tree | U-thaN | ŋňN | ËźŁ | ŋăř | ŋăř | ŋăř | ŋăř | ŋăř | ŋăř | *H

Interpretation of table above:

a. SW and DELTA
   i. SW and Delta *L correlate with one another
   ii. SW and Delta *H correlate with one another
b. NC and NW
   i. NC and NW *HL correlate with one another
   ii. NC and NW *L correlate with one another
c. All Branches
   i. Delta and SW *L correlate with both NC and NW *L and *HL
   ii. Delta and SW *H correlates with NC and NW *HL
   iii. Some instances of *H in SW correlate with NC/NW *L (more below – see [69] on page 15)

A more full cross-branch comparison is shown below

<table>
<thead>
<tr>
<th>Tonal group</th>
<th>Proto Delta</th>
<th>Proto South West</th>
<th>Proto North Central</th>
<th>Proto North West</th>
<th>Proposal for Proto Edoid</th>
</tr>
</thead>
</table>
| 1 | *L | *L | *L | *L | *L | 21
| 2 | *L | *L | *HL | *HL | *HL | 40
| 3 | *H | *H | *HL | *HL | *HL | 31
| 4 | (*)H | (*)H | (*)H-2 | (*)H-2 | |
| 5 | (*L-2) | (*L-2) | |

This shows all the symptoms of a classic Merger of 3 distinct phonological contrasts into only 2
This scenario accounts for both (1) why *L in Delta and SW correlate with *HL in NC and NW, and also (2) why *HL in NC and NW correlates with both *L and *H in Delta and SW.

If correct, it may act as evidence of a single phonological innovation (a tonal merger), which would support a two part division of Edoid into SW + Delta vs. NC + NW.

Finally, must note that some *H in SW correspond to *L in NC, NW, and Delta.

### Word Proto-Edoid (Elugbe 1989)

| a. bag | E-kpa |
| b. chin/jaw(1) | A-gbhamh |
| c. earth/soil/sand | I-kcn |
| d. face(1) | I-caN(a) |
| e. ground/soil(1) | U-t0 |
| f. heart/liver | U-ʣa |
| g. saliva | A-cuaN |

It is not currently established whether this is a conservative feature of SW – and therefore warranting an additional Proto-Tone (e.g. *L-2) – or if this is an innovation and split of *L from some currently unknown condition.

### OUTSTANDING QUESTIONS

- How can we further support (or challenge) the tonal groups thus established?
- How can we refine these tone groups to more accurately represent their original phonological or phonetic shape?
- Is there evidence for splitting of tonal correspondence sets based on the segmental environment (processes akin to those established for tonogenesis)?
- What is the role of grammatical tone in altering the lexical patterns which have established, if any?