Ewe Vowel Harmony: Implications for Theories of Underspecification (handout)

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Introduction

Earlier studies of Ewe vowel harmony overlooked data that show dialectal variation in the harmony process.

I will;

- Introduce this data and highlight the differences that exist between the old and new data.
- Propose an analysis for the new data using the theory of radical underspecification (Archangeli & Pulleyblank (1986)) and lexical phonology (Booij & Rubach (1987))
- Show the challenges faced by radical underspecification

First, let us look at the vowel inventory

Vowel inventory of Ewe

i		u
e	ə	o
ɛ	a	ɔ

- Dialects select from this inventory Clements (1974)
- Adangbe is the only dialect with all eight phonemic vowels
- The high, back and low vowels (i, u, o, a, ɔ) in Ewe are phonemic
- The phonemic status of the mid, non-back vowels, and the front, low vowel (e, ɛ, ə) are subject to some debate

Inventory of Adangbe

i		u
e	ə	o
ɛ	a	ɔ

Inventory of Northern dialect

i		u
e		o
ɛ	a	ɔ

Clements (1974) on Ewe Vowel Harmony

- Harmony occurs when the enclitic vowel is cliticized to a word ending in a vowel.
- "[T]he clitic [-e] assimilates to the immediately preceding stem vowel in terms of the features [high] and" [low] (height harmony) Clements (1974:289)[1]
- The clitic serves as the third person singular pronoun or the focus marker

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1   Clements used the features [high] and [ATR]. However, I relied on Capo's (1985) feature specification for Ewe vowels. As such, I used the features [high] and [low] to represent the harmonizing features.

1. Adangbe Vowel harmony

   a. əsì -í
      water-FOC
      'it's water'

   b. avu -i
      dog-FOC
      'it's a dog'

   c. əʊlɛ -ɛ
      weaverbird-FOC
      'it's a weaver bird'

   d. əye -e
      spider-FOC
      "it's a spider'

   e. əsɔ -ɛ́
      horse-FOC
      'it's a horse'

2. Adangbe Vowel harmony with central vowels

   a. ənyə -e ⟶ ənye -e
      1SG-FOC
      'it's me'

   b. agba -e ⟶ agbɛ -ɛ
      load-FOC
      'it's a load'

Interim Summary
- Enclitic vowel harmonizes to the root vowel in the features [high] and [low]
- The enclitic vowel serves as third person singular pronoun and focus marker across dialects of Ewe.
- Central vowels in stems undergo a fronting when they precede front vowels
- Fronting occurs before harmony
- Harmony process is the same irrespective of whether the enclitic is third person singular pronoun or focus marker.

Harmony in Northern Dialect of Ewe
Two processes take place:
- Height harmony (3SG pronoun)
  Enclitic vowel harmonizes to stem vowel in the features [high] and [low]
- Low harmony (focus marker)
  Enclitic vowel harmonizes to the stem vowel in only the feature [low]

Height Harmony
3. Height harmony in Northern dialect

   a. ko -e ⟶ ko -e
      laugh-3sg
      'laugh at him/her'

   b. tsɔ -e ⟶ tsɔ -ɛ
      take-3sg
      'take it'

   c. ku -e ⟶ ku -i
      fetch-3SG
      'fetch it'

   d. mli -i ⟶ mli -i
      roll-3SG
      'roll it'

4. Height harmony with /a/ as root vowel (harmony with 3SG pronoun)

   a. da -e ⟶ dɛ -ɛ
      throw-3SG
      'throw it'

   b. ta -e ⟶ tɛ -ɛ
      draw-3SG
      'draw it'

   c. fa -e ⟶ fɛ -ɛ
      mourn-3SG
      'mourn him/her'

   d. sa -e ⟶ sɛ -ɛ
      tie-3SG
      'tie it'

5. Height harmony with /ε/ as root vowel (harmony with 3SG pronoun)
    a. fε -e   ⟶   fe -e   c. gbε -e   ⟶   gbe -e
        split-3SG   refuse-3SG
        'split it'   'refuse it'

    b. kpε -e   ⟶   kpe -e   d. tε -e   ⟶   te -e
        invite-3SG   sting-3SG
        'invite him/her'   'sting him/her'

Low Harmony (Harmony with focus marker)
6. Low harmony
    a. tu -e   ⟶   tu -e   d. atɔtɔ -e   ⟶   **atɔtɔ -ɛ**
        gun-FOC   pineapple-FOC
        'it's a gun'   'it's a pineapple'

    b. ati -e   ⟶   ati -e   e. atε -e   ⟶   **atε -ɛ**
        stick-FOC   ant-FOC
        'it's a stick'   'it's an ant'

    c. to -e   ⟶   to -e   f. agba -e   ⟶   **agba -ɛ**
        mortar-FOC   load-FOC
        'it's a mortar'   'it's a load'

Summary
In the northern dialect of Ewe, two processes take place depending on whether the enclitic vowel functions as the third person singular or the focus marker.
- As the third person singular;
  ○ The enclitic harmonizes to the [high] or [low] feature of stem vowels.
  ○ It also harmonizes to the low feature of /a/ after fronting has applied.
  ○ However, if the stem vowel is /ε/, the enclitic causes the stem vowel to harmonize to its [-low] feature.
- As the focus marker;
  ○ The enclitic harmonizes to only the [low] feature of the stem vowel
  ○ This is true irrespective of the quality of the stem vowel
  ○ Also, vowel fronting is blocked when the enclitic is a focus marker even though its conditions are met

Questions Arising
- How is the front low vowel /ε/ able to pass its low feature in low harmony but not in Height harmony?
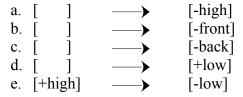- Also, why is vowel fronting blocked in low harmony?

Proposed Analysis

Radical Underspecification (Pulleyblank (1986; 1988); Archangeli (1988); Archangeli & Pulleyblank (1989); Archangeli (2011) for consonants see paradis & prunet (1991))
- All redundancies are absent in the underlying representation
- Predictable feature values are absent from the underlying representation
- Only a single value of features are in the underlying representation
- Predictable feature values are supplied by fill in rules

7. Proposed specification of Ewe vowels using radical underspecification

	/i/	/e/	/ɛ/	/u/	/o/	/ɔ/	/a/
[low]		-				-	
[back]				+	+	+	
[front]	+	+	+				
[high]	+			+			

8. Fill-in rules
   a. [   ] ⟶ [-high]
   b. [   ] ⟶ [-front]
   c. [   ] ⟶ [-back]
   d. [   ] ⟶ [+low]
   e. [+high] ⟶ [-low]

Lexical Phonology (Booij & Rubach (1987); Ruback (2008)
- Phonology is organized into different levels/strata;
- Stem, word and phrasal levels
- Some processes occur at the stem level while other occur at the word or phrasal level.
- The lower levels feed the higher levels.
- Morphological rules interact with phonological rules at the stem level

9. Derivation of height harmony

UR		fɛ[-back]
Cycle 1	Morphological rule	fɛ[-back] + e[-low, -back]
	Harmony	fɛ[-back, -low] + e[-low, -back]
SR		fe -e

10. Derivation of Low harmony

UR		atɛ[-back]
Cycle 1	Fill-in rule	atɛ[-back, +low]
Cycle 2	Morphological rule	atɛ[-back, +low] + e[-low, -back]
Harmony		atɛ[-back, +low] + e[+low, -back]
SR		atɛ -ɛ

Challenges with Proposed Analysis
- Phonetic [+low] vowels do not get specified for [low]
- They cannot trigger height harmony

Conclusion
- Clements' (1974) work lays a good foundation for further studies on the harmony system of Ewe.
- The generalizations proposed are not sufficient in light of new data
- New data can be partly analyzed with radical underspecification and lexical phonology
- There are challenges to the theory of radical underspecification in predicting feature specification in the northern dialect of Ewe.