

THE VOWELS OF PROTO-ĒDOID

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Ten oral vowels are reconstructed for Proto-Ēdoid (PE). It is also assumed that PE operated vowel harmony of the Kwa type in which one set of vowels is characterized by an expanded pharynx and the other by an absence of such an expansion.

There is a reduced role for vowel harmony in modern Ēdoid languages. The reason for this is the reduction of the original ten-vowel system to a nine-, eight, or even seven-vowel system in the Ēdoid languages.

The ways in which vowel system reduction takes place are discussed: the vowels *ə, *ɪ, and *ɔ are the first to go in that order. The origin of vowel sequences is also discussed: in CVCV stems, the second consonant, -C₂- was invariably a lenis one, while the final vowel, -V₂, was -i/-ɪ, or -u/-ɔ or -ə/-a. The loss of -C₂- created vowel sequences.

Finally, nasals and nasalization are examined as they affect the reconstruction of the PE vowel system. In particular, the question is raised whether PE had significant vowel nasalization. The conclusion is that there was and that -C₂-nasals of PE are derived from their oral counterparts by a nasal rule.

On est arrivé à la conclusion que le proto-édoïde (PE), devait posséder dix voyelles orales, et il est également admis que le processus d'harmonie vocalique du PE était du type de celui du groupe kwa, dans lequel l'un des groupes de voyelles est caractérisé par une dilatation du pharynx et l'autre par une absence de dilatation du pharynx.

Le processus d'harmonie vocalique a une fonction plus restreinte dans les langues édoïdes modernes, en effet, il y a dans ces langues diminution du système original à dix voyelles, à des systèmes à neuf, huit ou même sept voyelles.

La façon dont ces diminutions du nombre de voyelles dans les systèmes vocaliques apparaissent, est étudiée dans l'article que nous résumons. Les premières voyelles à disparaître sont dans l'ordre [*ə], [*ɪ], [*ɔ]. L'origine des séquences vocaliques est également étudiée dans cet article. Dans la

structure CVCV, la deuxième consonne $-C_2-$, était invariablement une consonne faible et la voyelle $-V_2-$ était toujours $-i/[ɪ]$, ou $-u/[*o]$ ou encore $-[e]/a-$. Lors de la disparition de la consonne $-C_2-$ une séquence vocalique apparaissait donc.

Enfin, l'article étudie les nasales et la nasalisation pour, par ce biais, retrouver le système vocalique du PE. La question se pose, en particulier de savoir s'il y avait un phénomène de nasalisation des voyelles du proto-édoidé. La réponse est affirmative, et d'autre part les consonnes $-C_2-$ nasales du proto-édoidé, dériveraient des consonnes orales équivalentes suivant une règle spécifique.

0. INTRODUCTION

The Edoid languages are traditionally classified as Kwa (Greenberg 1963). More recently, Bennett and Sterk (1977) have classified them as a group (?) within Eastern South-Central Niger-Congo. Geographically, they are found mostly in the Bendel State of Nigeria. Delta-Edoid (DE) languages are spoken in the Rivers State while some North-Central (NCE) and North-Western (NWE) Edoid languages are spoken in the Bendel/Ondo border areas of Ondo State.

1. THE VOWELS OF PROTO-EDOID (PE)

Ten oral vowels are reconstructed for Proto-Edoid:

(1)	i	u
	ɪ	ɔ
	e	o
	ɛ	ɔ
	ə	
	a	

Donwa (forthcoming) has done a spectrographic investigation of vowels in Isoko and discovered that \underline{i} and \underline{o} are in fact lower than \underline{e} and \underline{o} . If this were the situation in PE, it could mean that the non-expanded vowels were lower all round than their expanded counterparts (see below). Synchronic evidence from modern Edoid languages suggests that PE operated a vowel harmony rule. This suggestion is confirmed by the pattern of vowel distribution in our reconstructed PE lexicon.

We assume that vowel harmony in PE was of the Kwa type in which vowels fall into two sets, one characterized by an expanded pharynx and the other by the absence of such an expansion. The two harmony sets in PE would thus be as in (2):

(2)	EXPANDED PHARYNX		NON-EXPANDED PHARYNX	
	i	u	ɪ	ɔ
	e	o	ɛ	ɔ
	ə		a	

According to the vowel harmony rule, all affix vowels had to agree with stem vowels in pharynx width. In the case of polysyllabic stems, all vowels also had to agree in terms of pharynx width.

In the modern Eḡdoid languages, there is a reduced role for vowel harmony. It is observed that the fewer the vowels in a given system, the less the role of vowel harmony. Thus vowel harmony is virtually non-existent in the NCE languages (Eḡdo, Auchì, Ghotuḡ, etc.) where the original ten-vowel system has been reduced to seven. In Delta-Eḡdoid, where ten-vowel systems still exist, vowel harmony is at its most symmetrical and rigid. The NWE and the SWE situations are intermediate between these two (DE and NCE) extremes.

2. VOWEL SYSTEM REDUCTION

The implication of postulating a ten-vowel system for PE is that most Eḡdoid languages have reduced the original system in various ways. The first step is, of course, to prove that we are dealing with reduction rather than expansion in the Eḡdoid situation.

The evidence for postulating reduction is overwhelming and conclusive: while *i and *e have regular i- and e- reflexes respectively, *ɪ shifts to i, ɪ, e, or ɛ! Similarly, while *u and *o have u- and o- reflexes respectively, *ɔ has u-, ɔ-, o- and ɔ- reflexes. These observations are parallel to what happens in the case of *ə and *a. *ə has a very varied set of reflexes but *a does not. All these observations are supported by the evidence in Table 1.

Some generalizations may be drawn from the way in which the original ten-vowel system has been reduced in the Eḡdoid languages: (See Table 1 overleaf.)

- (3) a. In the nine-vowel system, there is no /ə/.
- b. In the eight-vowel system, there is no /ə/ and no /ɪ/.
- c. In the seven-vowel system, there are no /ə, ɪ, ɔ/.

An example of (3a) in Eḡḡeḡ (Engenni). Ibilo (NWE) is an example of (3b) while all NCE languages provide examples of (3c). In cases of (3a), [ə] sometimes remains as an allophone of /a/ while, in cases of (3b), there is no trace of [ə] but [ɪ] is an allophone of /i/.

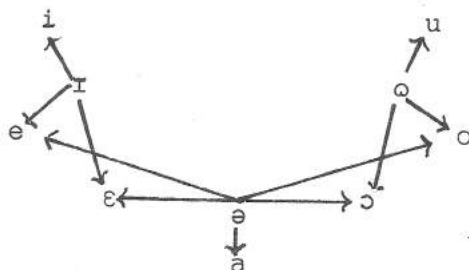
Table 1: Vowel correspondences in Ėdoid

	i	ɪ	e	ɛ	ə	a	ɔ	o	ɔ̃	u
DE: Degema	i	ɪ	e	ɛ	ə	a	ɔ	o	ɔ̃	u
Eg̃eg̃e	i	ɪ	e	ɛ	e	a	ɔ	o	ɔ̃	u
Epie	i	ɪ	e	ɛ		a	ɔ	o	ɔ̃	u
SWE: Eruwa	i	ɪ	e	ɛ	ɛ	a	ɔ	o	ɔ̃	u
Isoko	i	ɪ	e	ɛ	^e ɛ	a	ɔ	o	ɔ̃	u
Okpe	i	e	e	ɛ	ɛ	a	ɔ	o	o	
Urhobo	i	e	e	ɛ	ɛ	a	ɔ	o	o	u
Uvbię	i	ɪ	e	ɛ	ɛ	a	ɔ	o	ɔ̃	u
NCE: Ėdo	i	e	e	ɛ	a	a	ɔ	o	o	u
Aoma	i	e	e	ɛ	a	a	ɔ	o	o	u
Avbianwu	i	e	e	ɛ	a	a	ɔ	o	o	u
Auchi	i	e	e	ɛ	a	a	ɔ	o	o	u
Unęmę	i	e	e	ɛ	ɔ	a	ɔ	o	o	u
Ghotuɔ	i	e	e	ɛ	a	a	ɔ	o	o	u
NWE: Ȯloma	i	ɛ	e	ɛ	a	a	ɔ	o	ɔ	u
Ėmhalę	i	ɛ	e	ɛ		a	ɔ	o	ɔ̃	u
Ibilo	i	ɛ	e	ɛ	a	a	ɔ	o	ɔ̃	u
Uhami	i	i	e	ɛ	a	a	ɔ	ɔ	u	u
Ehueun	i	i	e	ɛ	a	a	ɔ	o	u	u
Ukue	i	i	e	ɛ	a	a	ɔ	o	u	u

In the ten-vowel system of Dɛgɛma, /ə/ is forbidden in prefix position (cf. Elugbe 1976); in the nine-vowel system of Ɖgɛɛ, /ɪ/ and /ɔ/ are forbidden in prefix position. It would appear that this kind of distributional restriction is one of the first steps in vowel system reduction.

Table 1 and our discussion so far are summarized in (4):

(4) Vowel system reduction routes in Ɖdoid



It may well be that PE *ə was closer and therefore more centralised than here indicated since Table 1 and our summary in (4) show that it has the ability to shift to the greatest variety of vowels. It is followed by *ɪ and *ɔ. The evidence also shows that although Elugbe (1973) did not reconstruct *ə, there is ample evidence for its reconstruction. The inclusion of data from Dɛgɛma (DE) and Unɛmɛ (NCE) has been useful in bringing a new dimension into the correspondences (see the items 'river' and 'two' in the appendix).

If we take Donwa's forthcoming position on Isoko as representative of what may have operated in PE, we should re-arrange the vowels of PE as in (1¹):

(1 ¹)	i		u
	e		ɔ
		ə	
	ɪ		ɯ
	ɛ		ɔ
		a	

It would become obvious that the three most central vowels are the most prone to change. It may well be that peripheral vowels are more resistant to change than non-peripheral (i.e. central) vowels - at least within vowel systems of the Kwa type with vowel harmony.

3. VOWEL SEQUENCES AND -V₂-

Vowel sequences are widely attested in the Ɖdoid languages. The sequences are either closing or opening. A closing sequence of vowels is one in which the last vowel is closer (i.e. higher on the Height scale) than the first. On the other hand, an opening

sequence is one in which the last vowel is more open (i.e. lower on a Height scale) than the first.

Thus we find opening sequences -iV, -rV, -oV, and -uV in which V is lower than the close i, r, o, u. On the other hand typical closing sequences are -ei, aI, -ɔo, ou etc.

There are more vowel sequences to be found in a typical modern Eḍoid language than I postulate for PE. This arises from the fact that most Eḍoid languages have zero-reflex for the PE -C₂- consonants which were lenis -dh-, -mh-, -nh-, etc. (see Elugbe 1980 for a discussion of this).

In CVCV stems of PE, there was a restriction as to the vowels which could occur at -V₂. Only *-i/*-r, *-o/*-u and *-ə/*-a could occur there. Once a -C₂- was lost, original CVCV stems became CVV in which, very often, -V₂ was a close vowel. Donwa (forthcoming) gives evidence which shows a development CVCV > CVV > CV within the dialects of Isoko. Elugbe and Williamson (1977) also give evidence from the Eḍoid languages to support the view that some vowel sequences have arisen from the loss of -C₂- in the Eḍoid languages.

4. VOWELS, NASALS, AND NASALIZATION IN PE

In Elugbe (1973) I suggested that significant vowel nasalization was a feature of PE. I also said then that of all the vowels of PE, only *e and *o had no significantly nasalized counterparts. This point about nasalized ẽ and õ was based on the observation that no *ẽ or *õ could be convincingly reconstructed for PE.

Nasalization in the Eḍoid languages is often traceable to PE -mh- and -nh-, i.e. -C₂- nasals, which have been lost. But there are also cases where synchronic nasalization is not traceable to a PE lenis nasal in -C₂- or any other position. It is for such cases that significant nasalization is postulated in the 1973 work, giving us *Cṽ and *Cṽṽ stems. However, in the 1977 work by Elugbe and Williamson, PE *Cṽ and *Cṽṽ are said to have been derived from a pre- or early-Proto-Eḍoid form in which a velar nasal -C₂- occurred. In Elugbe (1980), that position is slightly modified and -N- is postulated in place of -ŋ-. Thus the item 'tree' is reconstructed at various stages as in (5):

(5)	1973	PE *o-thāĩ	'tree'
	1977	*o-thaŋr	
	1980	*o-thaNr	

The difference between the 1977 and the 1980 positions is that -ŋ- was postulated for a pre-Proto-Eḍoid level while -N- is postulated

for PE. There is also no claim in the 1980 work that -N- was necessarily -ŋ-. In fact, the claim is that -N- may never have been realized segmentally but rather as nasalization of the surrounding vowels.

In making a case for a pre-PE -ŋ-, Elugbe and Williamson (1977) point to two considerations which are relevant: (1) the irregularity of having -mh- and -nh- but not -ŋ- (our -N-); and (2) the derivation of significant nasalization from the loss of -mh- and -nh-.

The case, already made in 1977 against the background of Benue-Kwa, will be briefly amplified here. If we assume that the typical PE stem was CVCV (and occasionally CV, CVV or CVC) in which -C₂- was frequently a lenis nasal -mh-, -nh-, or -N-, we find that all Ɖoid languages have lost -N-, with faint traces of it left in the form of vowel nasalization; on the other hand, -mh- and -nh- are retained here and there. Using Dɛgɛma and Eɛɛɛ (DE), Isoko (SWE), Aoma (NCE), and Ibilo (NWE) as examples, we find the following interesting situation:

(6)	Proto-Ɖoid	CVmhV	CVnhV	CVNV
	> Dɛgɛma	CVm	CVn	CṼV/CVV
	> Eɛɛɛ	CVm(V)	CVn(V)	CVV
	> Isoko	CVV	CVrV	CVV
	> Aoma	CVmV	CṼ	CṼ
	> Ibilo	CV	CVŋV	CV

The languages in (6) are not representative of what happens within each sub-group of Ɖoid. For example, the Isoko examples obscure the fact that PE -mh- has a -m-reflex in Okpɛ, another SWE language. What (6) does is give us an idea of the variety of processes by which vowel nasalization and stem reduction have taken place in Ɖoid. (7) is a practical demonstration of (6):

(7)	PE: E-nhamhɪ	khɔnhɪ	U-thaŋɪ	dhɪ-kɪŋɛ
	De. ɛ-nám	kɔn	ó-!táí	ú-!kié
	Eg. à-nám(ò)	kɔn(ɪ)	ɛ-tàí	í-kiè
	Is. à-ràò	hɔrɪ	ú-ré	é-ké
	Ao. é-ámí	xóí	ó-rá	é-kè
	Ib. à-ŋà	khɔŋɔ	ú-ǰà	ǰá-cà
	Eng. 'meat'	'fight'	'tree'	'egg'

What is clear from (7) is that the most unpopular -C₂- is -N-. Beyond that some languages have dropped -nh- while retaining -mh- (e.g. Aoma); others have dropped -mh- while retaining -nh- (e.g. Ibilo).

In the 1973 work, Elugbe made it clear that he regarded the nasals *mh and *nh as allophones of *bh and *dh respectively before nasalized vowels. On the other hand, both Elugbe and Williamson (1977) and Elugbe (1980) say that their reconstruction is at a systematic phonetic level. I would suggest, then, that there is little difference between Elugbe's 1973 view of vowel nasalization in PE and our present view of it. It should be possible to say that

- (8) PE CVMhV are derived from PE /CVbhṼ/
 CVnhV from /CVdhṼ/
 and CVNV from /CVGṼ/

There would be only one little question about this: is there evidence for the postulation of -G-? Elugbe (1980) presents such evidence and cites the case of 'ear' and 'house' (see the appendix). In the one case where there is an actual segmental reflex for -G-, it turns out to be -ɣ-. Although the evidence is meagre, I consider it further support for the position that at least some dialects of PE may have had some kind of velar nasal which may have been -ŋ-, a velar nasal, or -ŋ̃-, a voiced nasalized velar approximant - at any rate a very weak nasal consonant. This consonant obviously occurred only in -C₂- position and has no segmental reflex in any of the Eḍoid languages on which we have data.

We must now ask how we are to deal with stems in which there is no evidence of a second syllable traceable to PE, though there is evidence of nasalization. For example the stems for 'tooth' and 'to build or thatch a roof' are reconstructed as *-kō̃ and *-ō̃ respectively in the 1973 work. In the 1980 work, these are reconstructed as *-kōN and *ōN respectively. If our argument for the derivation of -NV from -GṼ is applied here, we must accept the suggestion that *CVG̃ > CVN > CṼ. We might even take the argument a step further and say that CVG̃ was itself derived from an earlier *CVGṼ. Outside Eḍoid the case made by Elugbe and Williamson (1977) for -C₂- nasals in Proto-Benue-Kwa is evidence which supports the position taken in this work.

APPENDIX

I present in the following pages evidence to support Table 1 and my postulation of a ten-vowel system for PE. There are fourteen series of comparative items.

IPA symbols are used as much as possible. However, an h after a consonant suggests a lenis version of that consonant. ŋ and ɺ are topped alveolar nasal and lateral respectively: they are derived from lenis PE alveolars. ɺ̣ is a voiced alveolar tap with lateral offglide.

Upper-case vowel symbols in noun prefix position summarize harmony-determined alternants:

I = i ~ ɪ	A = ə ~ a
E = e ~ ɛ	O = o ~ ɔ
U = u ~ ʊ	

Non-cognate items are enclosed in brackets.

1. Proto-Edoid * <u>-ki</u> 'market'			3. Proto-Edoid * <u>deNi</u> 'fall'			5. Proto-Edoid * <u>E-da i-</u> 'river'		
DE:	Degema	è-kí i-	DE:	Degema	deĩ	DE:	Degema	édè í-
	Egēne	è-kí		Egēne	dei		Egēne	é-dè
	Epie	e-ki		Epie	deĩ		Epie	é-dè
SWE:	Eṛuwa	è-kí i-	SWE:	Eṛuwa	ze	SWE:	Eṛuwa	í-sè
	Isoko	è-kí		Isoko	tʃe < tie		Isoko	é-tè (í-)
	Okpẹ	é-yì		Okpẹ	se		Okpẹ	(ù-ríé)
	Urhobo	è-kí		Urhobo	ʃe		Urhobo	(ò-ríé)
	Uvbiẹ	è-kí		Uvbiẹ	rie		Uvbiẹ	(ù-ríè)
NCE:	Edo	è-kí	NCE:	Edo	de	NCE:	Edo	è-zè
	Aoma	è-kí		Aoma	de		Aoma	é-dè
	Auchi	à-kí i-		Auchi	de		Auchi	é-dà é-
	Avbianwu	à-kí		Avbianwu	de		Avbianwu	é-dà é-
	Unẹmẹ	à-kí		Unẹmẹ	dè		Unẹmẹ	é-dò
	Ghotuọ	ghò-kí		Ghotuọ	de		Ghotuọ	ēdā ē-
NWE:	Ọlọma	ghè-kí	NWE:	Ọlọma	ze	NWE:	Ọlọma	-
	Emhalhe	wè-kí rù-kí		Emhalhe	ze		Emhalhe	(ó-kè)
	Ibilo	è-cí		Ibilo	dze		Ibilo	(ó-kphò)
	Uhami	è-cí		Uhami	ze		Uhami	(ú-kò)
	Ehueun	è-hi		Ehueun	ze		Ehueun	(ó-kè)
	Ukue	è-kí		Ukue	dè		Ukue	(ù-kóú)
2. Proto-Edoid * <u>dhr</u> 'eat'			4. Proto-Edoid * <u>dɛ</u> 'buy'			6. Proto-Edoid * <u>i-və</u> 'two'		
DE:	Degema	dɪr	DE:	Degema	dɛ	DE:	Degema	i-və
	Egēne	dɪr		Egēne	(do)		Egēne	í-vè
	Epie	dɪr		Epie	dɛ		Epie	í-vè
SWE:	Eṛuwa	rɪ [ɹɪ]	SWE:	Eṛuwa	dɛ	SWE:	Eṛuwa	í-vè
	Isoko	rɪ		Isoko	dɛ		Isoko	í-vè
	Okpẹ	rɛ		Okpẹ	dɛ		Okpẹ	é-và
	Urhobo	lɛ		Urhobo	dɛ		Urhobo	í-vè
	Uvbiẹ	rɪ		Uvbiẹ	dɛ		Uvbiẹ	í-vè
NCE:	Edo	lɛ/je	NCE:	Edo	dɛ	NCE:	Edo	è-vá
	Aoma	e		Aoma	dɛ		Aoma	è-vá
	Auchi	lɛ		Auchi	dɛ		Auchi	è-vá
	Avbianwu	lɛ		Avbianwu	dɛ		Avbianwu	è-vá
	Unẹmẹ	lɛ		Unẹmẹ	dɛ		Unẹmẹ	è-vá
	Ghotuọ	e		Ghotuọ	dɛ		Ghotuọ	è-vā
NWE:	Ọlọma	rɛ	NWE:	Ọlọma	dɛ	NWE:	Ọlọma	é-wá ?
	Emhalhe	rɛ		Emhalhe	dɛ		Emhalhe	è-vá
	Ibilo	rɛ		Ibilo	dɛ		Ibilo	è-vá
	Uhami	ri		Uhami	dɛ		Uhami	è-vá
	Ehueun	ri		Ehueun	dɛ		Ehueun	è-vā
	Ukue	di		Ukue	dɛ		Ukue	è-vá

7. Proto-Edoid *ma
'mould'

DE: Dẹgẹma (dum)
Egẹne ma
Epie ma

SWE: Erywa ma
Isoko ma
Okpe ma
Urhobo ma
Uvbie ma

NCE: Edo ma
Aoma ma
Auchi ma
Avbianwu ma
Uneme ma
Ghotuo ma

NWE: Oloma ma
Emhalhe ma
Ibilo ma
Uhami ma
Ehueun ma
Ukue ma

9. Proto-Edoid *do
'steal'

DE: Dẹgẹma do
Egẹne do
Epie dō

SWE: Erywa so
Isoko to
Okpe so
Urhobo co
Uvbie co

NCE: Edo (rhaa)
Aoma do
Auchi (tue)
Avbianwu (tue)
Uneme do, do(ɔ)
Ghotuo do

NWE: Oloma zo
Emhalhe zo
Ibilo dzo
Uhami zo
Ehueun zo
Ukue do

11. Proto-Edoid *fumhi
'swell'

DE: Dẹgẹma fu (TW)
Egẹne fuo
Epie fue (TW)

SWE: Erywa fi(ri)
Isoko fu
Okpe fu
Urhobo (vbɔ [vɔ])
Uvbie fu(ru)

NCE: Edo hiv iã [hiŋi]
Aoma humu
Auchi fumhi
Avbianwu fumhi
Uneme fumhu
Ghotuo humhi

NWE: Oloma -
Emhalhe (bie)
Ibilo (bio)
Uhami (mina)
Ehueun (zo)
Ukue (dho)

8. Proto-Edoid *ghU-bɔ
A- 'arm, hand'

DE: Dẹgẹma ɔ-bɔ à-
Egẹne ɔ-bɔ
Epie ɔ-bɔ

SWE: Erywa à-bɔ
Isoko ɔ-bɔ à-
Okpe ɔ-bɔ à-
Urhobo ɔ-bɔ à-
Uvbie à-bɔ

NCE: Edo ɔ-bɔ
Aoma ɔ-bɔ
Auchi ɔ-bɔ a-
Avbianwu ɔ-bɔ a-
Uneme ɔ-bɔ a-
Ghotuo ghɔ-bɔ a-

NWE: Oloma ghɔ-bɔ á-
Emhalhe wɔ-bɔ á-
Ibilo ɔ-bɔ á-
Uhami ɔ-bɔ
Ehueun ɔ-wɔ
Ukue ɔ-bɔ

10. Proto-Edoid *O-bɔ
A- 'doctor'

DE: Dẹgẹma ɔ-bɔ è-
Egẹne ɔ-bɔ
Epie ɔ-bɔ

SWE: Erywa ɔ-bɔ i
Isoko ɔ-bɔ i-
Okpe ɔ-bɔ
Urhobo ɔ-bo è-
Uvbie à-bɔ

NCE: Edo ɔ-bɔ
Aoma ɔ-bɔ
Auchi ɔ-bɔ é-
Avbianwu ɔ-bɔ é-
Uneme ɔ-bɔ í-
Ghotuo ɔ-bɔ é-

NWE: Oloma á-bu
Emhalhe ɔ-bɔ é-
Ibilo ɔ-bo é-
Uhami ɔ-bu
Ehueun ɔ-bu
Ukue ɔ-bu

12. Proto-Edoid *vie
'cry, weep'

DE: Dẹgẹma vie
Egẹne vie
Epie -

SWE: Erywa vie
Isoko vie
Okpe vie
Urhobo vie
Uvbie vie

NCE: Edo vie
Aoma vie
Auchi vie
Avbianwu vie
Uneme vie
Ghotuo vie

NWE: Oloma vie
Emhalhe vie
Ibilo vie
Uhami vie
Ehueun vie
Ukue vie

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