

UE 14155

Comparative Edoid: phonology and lexicon

by

Ben Ohiqمامhé Elugbe

Delta Series No. 6

University of Port Harcourt Press



(c) B. O. Elugbe 1986

ISBN 978-2321-12-5

First Published 1989

To my teachers in Linguistics,

Ayo Bamgbose
Elizabeth Dunstan
Carl Hoffmann
Ian Maddieson
Bernard Mafeni
Kay Williamson

and also to my wife

Stella

PHONETICS OF THE EDOID LANGUAGES

2.0. The Edoid languages parade an interesting array of sounds whose study has already contributed, and will continue to contribute, to our knowledge of the sounds of human language (cf. Melzian 1942; Ladefoged 1964; Mafeni 1969; Elugbe 1973, 1978b; Williamson 1977; and Lindau 1980a, 1980b).

In this chapter, we shall review our present knowledge of the sounds to be encountered in the Edoid field, concentrating, where necessary, on the more interesting phenomena.

2.1. *Consonants of the Edoid languages*

Elugbe (1973) discusses consonants of the Edoid languages under five sub-groupings: stops; nasals; fricatives; rolls/trills, taps and laterals, and approximants. In addition he discusses breathy-voicing and lenisness as features of consonants in general.

That format will be broadly followed in the following discussion although, as will be seen, our terminology may not always agree with that in the 1973 work.

The phonological status of individual sounds within a given language may sometimes be mentioned, but this chapter is not concerned with phonology: it is concerned with the sounds of Edoid as seen against the background of an ultimate phonological system. Hence, unless otherwise indicated, all sounds should be understood as being phonetically transcribed even though they are not in square brackets.

2.1.1. *Stops*

There are a total of twenty-two oral stops (including affricates) in the Edoid languages so far investigated. The stops fall into three groups: plosives, affricates, and implosives. The special case of the labial-velars will also be separately discussed.

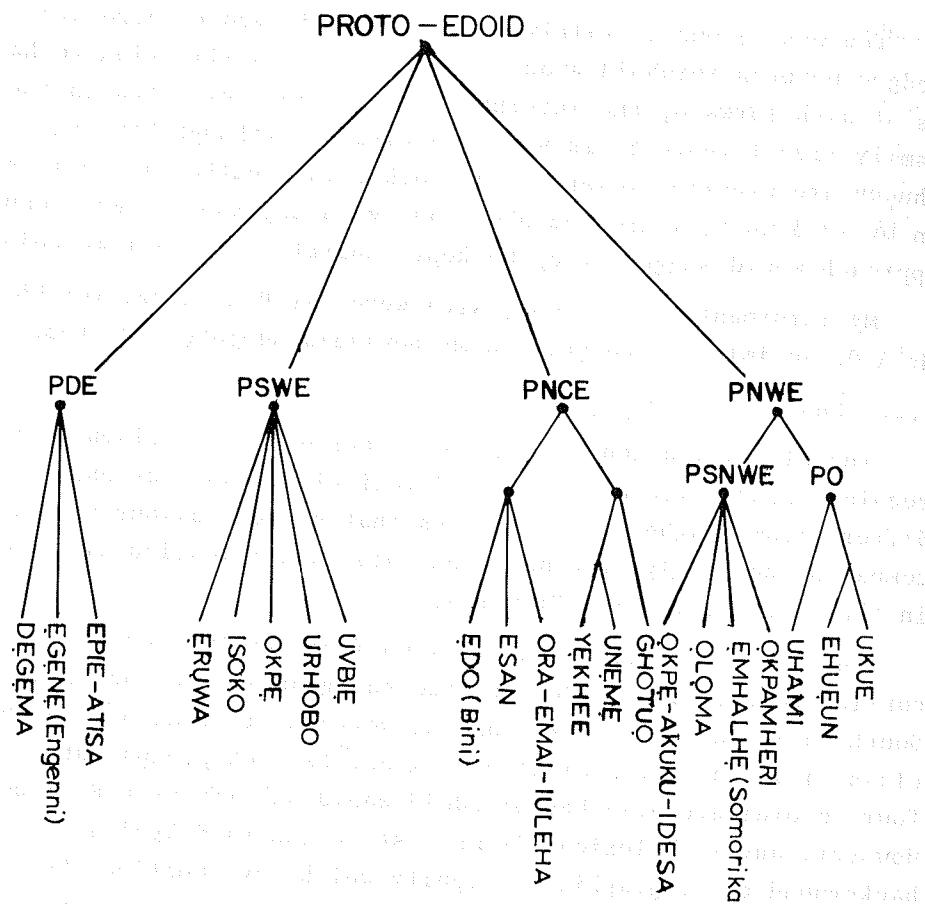


Fig. 4: The Edoid family tree

2.1.1.1. Plosives

Some plosives are voiceless and others are voiced. The difference between the voiceless and the voiced plosives in the Edoid languages is that the glottis is in an open state during the closure phase of the voiceless, and in a state of vibration (i.e. voicing) during the same phase of the voiced plosives. Slight aspiration was noticed with the voiceless plosives but this is nowhere significant in the Edoid languages.

Plosives were also observed to be weakly articulated (lenis) or normally articulated (non-lenis). This feature also occurs with other manners of articulation and is discussed below.

Dental plosives t and d occur in Isoko (SWE) and Ukue (NWE). More interesting, however, is the occurrence of a dental-palatal plosive in Isoko. The observation of this sound and its nasal counterpart in Isoko renders incorrect the claim by Ladefoged (1975) that a labial element is present in every case of double articulation.

2.1.1.2. Affricates

The difference between an affricate and a normal plosive is in the manner of release: gentle and gradual for the affricate, sudden for the plosive.

Affricates were identified at two points of articulation: the alveolar and the palato-alveolar. In addition to the more common tj and $dʒ$, which are palato-alveolar, the alveolar affricates ts and dz occur. In none of the Edoid languages investigated was a contrast found between an alveolar affricate and a palato-alveolar one.

All the affricates are produced on a pulmonic egressive airstream. Phonologically, each affricate functions as a single consonant element.

2.1.1.3. Implosives

In the Edoid languages investigated, three clearly implosive sounds were identified. By implosive here is meant a stop sound produced on a glottalic ingressive airstream, with or without

vocal cord vibration. Thus we shall recognize voiced as well as unvoiced implosives. We shall use the term 'unvoiced' deliberately to refer to implosives in which voicing is lacking. Although some (notably Greenberg 1970) have used unvoiced and voiceless interchangeably in connection with implosives, we prefer the term 'unvoiced' to the term 'voiceless', which we reserve for sounds accompanied by an open glottis.

The three implosives occurring in the languages investigated are the voiced bilabial and alveolar implosives b and d respectively and the unvoiced bilabial implosive p^c . This last one invariably occurs velarized and was found only in Isoko, a SWE language.

b and d occur only in Delta Edoid. Thomas and Williamson (1967) report implosives in all three Delta Edoid languages - Degema, Egené, and Epie-Atisa. Elugbe (1973:55,57) presents oscillograph tracings of glottal activity in b and d as recorded for Egené. He observed that in initial position the closure phase of b was frequently without voicing while, in d , voicing invariably preceded the release of the oral closure. In inter-vocalic position, however, both sounds were found to be voiced.

Lindau (1980a) looks at the same sounds in Degema and concludes, on the basis of instrumental evidence, that "The implosives in ... Degema exhibit regular voicing throughout the closure and a relatively high intensity level." Unfortunately, neither the examples in her figures nor those in her discussion contain any reference to d . Moreover, the closure phase of word-initial b is not displayed in her figures. So we must conclude that the statement about voicing in Degema implosives is true for b and d in all positions.

Both Elugbe (1973) and Lindau (1980a) draw attention to the presence of a negative oral pressure in the oral cavity during the production of these implosives. Such a negative oral pressure is normally caused by a lowering of the larynx with the closed glottis. In the case of fully voiced implosives we must assume that vibration of the vocal cords starts even as the larynx is being lowered.

2.1.1.4. Labial-velars

Labial-velar stops were found in all the Edoid languages investigated. None of these labial-velars were truly implosive even though the auditory impression of some of them suggested they might be implosive.

In his investigation of Wepa Wang, Strub (1915-16) refers to a series of sub-barred consonants including kp and gb as 'succées explosives' (p.451), thus implying that they were 'suction' consonants or implosives. Elugbe (1980a) points out that Strub's examples coincide with examples that one would use for the lenis consonants in Yékhee (of which Wepa Wang is a dialect).

Thomas (1969) lists kp and gb as implosives in Egene. However, pressure recordings in the oral and pharyngeal cavities during the production of kp and gb in Elugbe (1973) show a negative pressure in the oral cavity and a positive pressure in the pharynx. Elugbe concludes that although some kind of implosion is heard at the lips, the positive pharyngeal pressure (behind the velar closure) indicates the presence of an egressive pulmonic airstream. The implosion at the lips is therefore the result of an ingressive velaric airstream.

It would appear that most Edoid languages employ this kind of labial-velar stop, involving a pulmonic egressive airstream and a velaric ingressive one. Ladefoged (1964) identifies this as one of the possible ways of producing labial-velar stops. Yoruba, for example, employs labial-velars of this type.

Ladefoged has also looked at the labial-velars of Edo and claims that three airstreams are involved there. He claims, however, that in a single utterance in Edo, a simple labial-velar stop, produced on an egressive airstream, as well as one produced on pulmonic egressive plus velaric ingressive airstreams, and a third, still more complex one, produced on a velaric ingressive plus a glottalic ingressive plus a pulmonic egressive airstream, may occur. Obviously, it does not matter which kind of labial-velar is employed in Edo. The same situation probably holds in the other Edoid languages.

The lenis/non-lenis dimension mentioned in the case of plosives also occurs with labial-velars, but only in the case of the Yékhee dialects Auchi and Avbianwu, and in NWE languages. In these languages, the lenis/non-lenis pairs kph: kp and gbh:gb were found. The functional load of the lenis labial-velars is very low in all cases.

2.1.2. Nasals

The typical Edoid language is rich in nasals. In some of the languages it is usually the case that these are seen as allophones of non-nasal phonemes.

While oral stops occur voiced or voiceless in the Edoid languages, nasals occur voiced and breathy-voiced (murmured). The voiced nasals fall into lenis and non-lenis sets. The breathy-voiced nasals occur only at the bilabial and alveolar points, giving us m̄ and n̄. Thus in Ibilò, for example, mh, m, and m̄ occur as bilabial nasals while nh, n, and n̄ occur as alveolar nasals. Emhalhe (Somorika), one of the more differentiated Okpamheri dialects, also has breathy-voiced nasals.

A tapped alveolar nasal, ɳ, occurs in many of the Edoid languages (see below for further discussion). The voiced labial-velar nasal ɳm occurs in Urhobo. It differs from ɳw in being produced without any lip rounding. Where the latter is produced with lip rounding, the former is produced with spread, firmly closed lips.

Of greater interest than the labial-velar from a general phonetic viewpoint is the occurrence of ʃn̄, a voiced dental-palatal nasal, in Isoko. When I observed this with my informant, he pointed out that some people use a pure dental in place of the dental-palatal. Donwa (1982), which is a detailed study of Isoko sounds, has confirmed this.

2.1.3. Fricatives

In the Edoid languages investigated, breathy-voiced fricatives occurred alongside voiced and voiceless ones in Isoko (SWE) and Ibilò and Emhalhe (NWE). This three-way distinction was found

with labiodental, alveolar and palato-alveolar fricatives, so that for Ibilo we have:

f v s z ʃ ʒ ʂ ʐ

This means that with reference to fricatives three states of the glottis are significant: voiceless, voice, and breathy-voice. In Isoko, breathy-voiced fricatives, which occur at the labiodental and alveolar points and which are not common, do not contrast with voiced ones with which they are in free variation. However the three-way contrast is well-established in Ibilo and Emhalhé.

The Urhobo sound ʐ is nearer the alveolar than normal palato-alveolar sounds. It would also appear to have a very short stop onset. These two aspects of it may explain why it is written 'dj' in Urhobo orthography. However, my informants accepted ʐ. It should be pointed out, too, that affricates do not normally occur in Urhobo except that tʂ and dʐ, the palato-alveolar affricates, are in free variation with c and ʂ respectively.

Labialized velar fricatives xw and ɣw occur. In the case of Urhobo and Isoko, Ladefoged (1964) and Mafeni (1969) suggest that we are dealing with labial-velar fricatives. Ladefoged actually transcribes w for ɣw. However, these sounds are secondarily labialized; the more radical of the supra-glottal constrictions is at the velum (where there is friction); there is no matching friction at the pursed lips.

2.1.4. Trills, taps, and laterals

One of the areas in which the Edoid languages will make the greatest contribution to phonetic theory is in that of trills/taps (rhotics) and laterals.

It is generally accepted that trills are produced with very short repeated (intermittent) closures. In a tap, the closure is equally short but not repeated. Lindau (1980b:3) puts it very clearly: "The taps appear as a single pulse [in a trill]. The pulse duration of taps and single pulses [in a trill] are about the same. A tap is a frequent allophone of a trill, particularly in

intervocalic position. Trills and taps are often in free variation."

In the Edoid languages, every language has at least one rhotic which may be a trill, ɾ or r; a tap ɾ; or an approximant ɹ. Lindau's 1980a work shows clearly how these different types may be used in idiolectal variation with some speakers favouring one kind while others favour another kind. The same speaker may sometimes vary his r-sounds. There are no non-alveolar trills in the Edoid languages.

In Edo, ɾ and r, voiceless and voiced alveolar trills, occur in contrast. ɾ also occurs in Urhobo. These trills do not occur nasalized. In Isoko a voiced alveolar trill r occurs alongside ɾ. Although Ladefoged (1964:58) gives the impression that Isoko employs a contrast between l, ɿ, ɿ, and r, the situation is in fact a little different and one wishes that Lindau (1980a) had said something about Isoko. In the Uzere dialect I found a real contrast between l, ɿ, and r. Neither the voiced alveolar/post-alveolar approximant nor its voiceless counterpart occur. I then travelled to Benin City to meet Mr Michael Marioghae who had been Ladefoged's Isoko informant. Again I found no evidence of the three-way contrasts reported in the rhotics for the Aviara dialect of Isoko.

Instead I found that Ladefoged's minimal set were rendered as follows:

English	Ladefoged (1964)	Elugbe
jump	ɮá	à-lá
flight	ðrá	à-rá
yours	ðrá	à-fá
schism	óṛá	ó-hrà

In my transcription above I have tried to show that r is in fact ɿ, a voiced alveolar tap with a lateral off-glide. It is occasionally rendered without a clear lateral element, but it normally has it. I have also tried to show that what Ladefoged heard as a single voiceless sound is in fact, a stem-initial cluster h + ɿ. Donwa (1982) has investigated this instrumentally and demonstrates that, in the hr cluster, it is more the case that

which becomes partly voiced than that *r* becomes devoiced.

Apart from *r*, the plain alveolar tap, and *t̪*, the same tap produced with a lateral element, a tapped nasal *n̪* and a tapped off-lateral *l̪* occur in the Edoid languages. These two sounds have puzzled a number of investigators in the Edoid field, but as Elugbe (1978b) points out, tapped nasals and laterals are to be found also in non-Edoid languages.

Melzian (1937) called the tapped lateral in Edo (Bini) "a sound intermediate between *r* and *l̪*" and transcribed it *r̪*, thus giving the impression that it was a retroflex sound. In his 1942 work, Melzian observes accurately that this sound "stellt einen sehr kurzen einmaligen Anschlag dar, der nicht retroflex ist" (p.51). By this definition, Melzian shows that he was indeed the first to see that this sound is made with a very brief contact (tap) and is not retroflex but alveolar. The point is that the movements that achieve *l̪* are the same as those for *l*: they are only faster (i.e. more quickly executed) for *l̪*. This means simply that *l̪* is of a shorter duration than *l*.

The observations on *l̪* above are true for its nasal counterpart, *n̪*. The tapped alveolar nasal has sometimes been wrongly labelled a 'nasalized tap' - clearly an impossible segment since it amounts to calling a nasal stop a 'nasalized stop'.

Tapped nasals and laterals are common in all non-Delta Edoid languages. In the Delta Edoid languages *r* occurs alongside *t̪* which frequently corresponds to *l̪* in the non-Delta Edoid languages.

Finally, the lateral approximant *l̪* occurs and may sometimes have a breathy-voiced counterpart within the same system, giving an *l/l̪* contrast, as in Ibilio.

2.1.5. Approximants

The palatal and the labial-velar approximants, *y* (IPA /j/) and *w* respectively, are the most common approximants in the Edoid languages. Their nasalized counterparts *ŷ* (IPA /j/) and *ŵ* also occur.

In Ghotuo, weak (i.e. lenis) types of these approximants, *yh* and *wh*, also occur. *wh* occurs in Ibilio as an allophone of its stronger, more common counterpart, *w*.

The spread bilabial approximant which occurs in Urhobo and Edo is peculiar. Even before back rounded vowels, the lips are observedly spread for this sound, especially in Urhobo where it is more spread. In Edo, it is labiodental before front unrounded vowels. In this work, the same symbol, *v*, is used for all the varieties of this sound. In both Urhobo and Edo, this sound becomes nasalized before nasalized vowels.

In the dialect of Edo on which I have worked, the tapped nasal *n̪* and its lateral approximant counterpart do not occur. Instead, the voiced alveolar central approximant *x* occurs. It is nasalized *x̄* before nasal vowels.

During the production of this sound (as produced by my informant) there is only a token movement of the tip of the tongue towards the alveolar ridge. In spite of this, however, this sound retains a lateral quality which suggests that the pulmonic egressive airstream makes its exit round the sides of the raised tongue tip. It may be that this is made possible by a depressing of the front of the tongue during the articulation of this sound. Lindau (1980a) found that only one out of four speakers had this lateral element. Her other three speakers simply used a voiced alveolar central approximant. In general in Edo, the older generation use a tapped lateral *l̪* where the younger generation have an approximant *x* or even no consonant at all.

ɥ, a labial-palatal approximant, occurs in the Avbiele dialect of Yekhee (see Laver 1967) but is probably derived from /v/ and /i/ as reflected in the orthography: 'Avbiele' is pronounced [aɥeley].

2.1.6. Breathy-voice (murmur)

Two types of phonation are linguistically significant in every Edoid language: voiceless and voice. The definitions of these states of the glottis need no repeating here.

In addition to these two states, however, some Edoid languages (notably Ibilio and Emhalhe (both Okpamheri dialects of NWE), Unemé of NCE, and Isoko of SWE, also employ significantly

the breathy-voice (murmur) state of the glottis.

Breathy-voice involves a stricture of the glottis in which the vocal cords are not brought together throughout their entire length. The result is that the ligamentals are together while the arytenoids are apart (Ladefoged 1971, 1975). However, following the (comparatively turbulent) high rate of airflow from the lungs, the vocal cords simply 'flap in the breeze' (Catford 1964) and there is 'a notable fricative hiss' (Heffner 1950). This means that breathy-voiced sounds are invariably accompanied by some amount of friction.

It must be noted from the foregoing that while Ladefoged tells us what state of the glottis, what relative positioning of the vocal cords, gives us breathy voice, Catford and Heffner tell us what happens once pulmonic egressive air blows through the glottis in this state.

In Ibihlo, breathy-voiced nasals, fricatives, and laterals occur. In Emhalhe, Unemé, and Isoko, breathy-voiced fricatives occur. Although fricatives are thus often voiceless, breathy-voiced, or voiced, nasals and laterals are never voiceless in the Edoid languages: they are only breathy-voiced or plainly voiced.

In Ibihlo, breathy-voiced sounds tend to have a voiceless initial phase while having a voiced initial phase in intervocalic position.

Speculating on the origin of breathy-voiced sounds in the Edoid languages, Elugbe (1973) calls them a half-way stage in the development from voiced to voiceless or vice versa: he concludes (p.324) that the development represents something like: voiced > breathy-voiced > voiceless. However, in Elugbe (1980a) that position is revised: "Breathy-voicing is a stage in the development of voiceless lenis PE stops into voiced [consonants] in the Edoid languages". It is seen, therefore, that there is a close historical connection between breathy-voicing and the lenis feature which we discuss next.

2.1.7. The lenis feature

Almost any writer on the consonants of any of the Edoid languages of the South-Western, North-Central, and North-Western branches has observed a feature that may be broadly grouped under the heading 'fortis/lenis'.

Phonetic descriptions of this feature often include long versus short duration of articulation; strong versus weak articulation; greater versus less muscular tension; even voiceless versus voiced; etc.

I refer to this feature simply as the lenis feature because the lenis consonants in the Edoid languages are less normal than their non-lenis counterparts (the so-called fortis). The lenis consonants are shorter and weaker than the non-lenis ones. Advancing reasons for saying that the lenis consonants are the marked set in the Edoid languages, Elugbe (1980a:41) argues that (1) the reflexes leading back to a PE lenis sound are often more varied in phonetic character than those for a corresponding PE non-lenis reconstruction; (2) the non-lenis consonants in the Edoid languages are phonetically more like the consonants in other languages than are the lenis ones; and (3) children and foreigners generally master the non-lenis consonants of Ghotuo before the lenis ones.

Elugbe (1980a:41-44) has given a comprehensive review of the literature on the sound systems of the Edoid languages to date, concentrating on those aspects that have to do with the lenis feature. As in 1973 and 1978b, Elugbe (1980a) sees duration as the most consistent differentiating factor between lenis and non-lenis consonants. This allows contrasts such as tapped alveolar nasal η vs non-tapped alveolar nasal n and their lateral counterparts to be seen as lenis/non-lenis pairs on the same scale as bh:b, gh:g, etc.

Another general characteristic of the sound systems of languages of the Edoid group is that discussed in Elugbe (1974): an Edoid language generally has a plosive series and a matching fricative series; if it does not have a fricative series, it has

a lenis plosive series to match the non-lenis stops. At a given point of articulation (except for the alveolar, for which there are historical reasons), no Edoid language has the contrast non-lenis stop: lenis stop: fricative. In some cases, such as Avbiele (Laver 1967) lenis plosives are in free variation with fricatives; they are in turn complemented by a non-lenis plosive series.

It has already been mentioned above that breathy-voicing, which is very much in evidence in some of the Edoid languages, is tied up with the development of lenis PE stops into voiced sounds in the modern Edoid languages. Even without recourse to the historical evidence (of which they were probably unaware), Akinlabi (1979) (for Ibilo) and both Adetuyi (1979) and Laniran (1979) (for Emhalhe) observe that breathy-voiced sounds in these two languages are generally shorter and less forcefully articulated than their non-breathy-voiced counterparts.

The two features of breathy-voicing and lenisness are responsible for the enrichment, in to-day's Edoid languages, of a parent system that was already elaborate by any standards. In Table 2, I give a summary of the lenis/non-lenis as well as the voiceless/breathy-voiced/voiced contrasts found in the Edoid languages.

In terms of distribution, the following summary may be made. In Ibilo and in the Yékhee dialects (including Ekpheli (Elimelech 1976)), lenis plosives in free variation with fricatives contrast with non-lenis plosives. In Oloma, Elugbe and Schubert (1976) report that the lenis alveolar plosives differ from the alveolar r: the lenis th and dh are apparently not as short as r. Akinlabi (1979) reports the same for Ibilo, although his instrumental evidence shows no occurrence of r but of r. The evidence is therefore not yet conclusive as to whether or not we can have the contrast: tap/lenis/non-lenis at the same point of articulation.

In Unemé, Ibilo, and Emhalhe, the breathy-voiced fricatives are weak and do not contrast with any set of lenis fricatives. The contrast between lenis and breathy-voiced, seen in the nasals and laterals, is neutralized in stops (which occur lenis but not

breathy-voiced) and in fricatives (which only occur more observably as breathy-voiced rather than lenis).

Table 2: Lenis/non-lenis/breathy-voiced contrasts in the Edoid languages

		labial	alveolar	palatal	velar	labial-velar
	lenis	p	t	th	kh	ph
NASAL	non-lenis	m	n	ñ	k	g
	breathy-voiced	m̥	n̥	ñ̥	k̥	g̥
STOP	lenis	b	d	dh	gh	kph
	non-lenis	b̥	d̥		g̥	gb
FRICATIVE	lenis/br.vd.	v	z		ʒ	
	non-lenis	f	s	z̥	ʃ	z̥
LATERAL	lenis	l				
(APPROXIMANT)	non-lenis			l̥		
	breathy-voiced			l̥̥		
(CENTRAL)	lenis				yh	wh
APPROXIMANT	non-lenis				y	w

In (2) below I give examples of minimal contrasts between voiced, breathy-voiced, lenis, and voiceless sounds in Ibilo.

(2) m̥	'conceive,' 'be pregnant'	sà	'sting'
m̥	'be ripe'	zà	'bore a hole'
m̥	'I'	zà	'hold'
fò	'be tired'	là	'be fat'
vò	'behead'	jà	'run'
vò	'smell'	jà	'go'

2.2 Vowels of the Edoid languages

Ten vowel qualities were identified during the course of this investigation:

[i, ɪ, e, ε, ə, a, ɔ, ɒ, ʊ, u].

Of the twenty languages investigated, only Degema had contrasts involving all ten vowels. Egene, another Delta Edoid language, has a nine-vowel system in which ə, the tenth vowel, is an allophone of /a/.

No Edoid language employs less than seven vowels in its oral vowel system. Where the system is a seven-vowel one (as in all of NCE) the vowels are i, e, ε, a, ɔ, ɒ, and u. For an eight-vowel system, ə is added. Ibihlo is an example of an eight-vowel system in which the ninth vowel ɪ is an allophone of /i/.

The approximate articulatory positions of these vowels are shown on Fig.5.

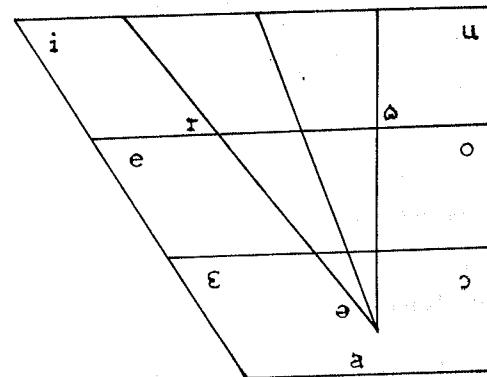


Figure 5. Edoid vowels on a Cardinal Vowel Figure

2.2.1. Vowel nasalization

As would be expected, vowel nasalization occurs in all the Edoid languages investigated. However, while in some of the languages nasalization occurs only after nasal consonants and is therefore not significant, in others it is non-predictable and therefore significant.

Amayo (1976) makes a distinction between nasalized vowels (those that are automatically nasalized) and nasal ones (inherent) in Edo. He makes the point that "... it is not possible to distinguish the nasal vowels from the nasalized vowels by their degree of nasalization" (pp.109-110). This observation is true of other Edoid languages in which nasalization is significant.

2.2.2. Breathy-voiced (murmured) vowels

Breathy-voiced or murmured vowels occur in those languages that employ breathy-voicing. According to Elugbe (1973:72): "Vowels that occur after breathy-voiced consonants have a breathy-voiced beginning; they are not breathy-voiced all through." Akinlabi (1979) has confirmed this for Ibihlo.

2.2.3. Vowel harmony

Vowel harmony is a prominent feature in many of the Edoid languages investigated. In all the Delta Edoid, South-Western Edoid, and the Southern North-Western Edoid languages (i.e. Okpamheri and Oloma) vowel harmony is observable in verbal and noun systems. Even in North-Central Edoid and the Osse part of North-Western Edoid, where there is no clear evidence of vowel harmony, vestiges of harmony are to be found in the patterning of vowels in nouns and in the way vowels alternate in prefixes during the formation of the plural forms.

Vowel harmony is the process whereby the vowels of a given morpheme, word, or verbal phrase are selected from any one of two mutually exclusive sets. In Edoid, these sets are:

- I. i, e, ə, ɔ, u, and
- II. ɪ, ε, a, ɒ, ʊ

I have not done any personal research into the phonetic differences between these two sets of vowels. As is well-known, after the initial bafflement over the physiological basis of vowel harmony in West African languages (it was not like the Turkish case, for example, where 'rounding', 'tongue height', etc., are the basis of harmony), resulting in the use of terms such as 'raised/lowered', 'tense/lax', etc., a break-through was achieved in 1967 with Stewart's 'Tongue root position in Akan vowel harmony', which interpreted the X-ray data in Ladefoged 1964. It was followed shortly afterwards by Pike (1967). Both suggested that the main distinguishing feature in the two sets is the positioning of the root of the tongue with its implication for the width of the pharynx. More recently, Lindau (1975) has argued

that for vowel harmony in West African languages, '... the pharyngal size is expanded by advancing the tongue root and lowering the larynx'. Accordingly, the terminology of vowel harmony has changed from 'Advanced Tongue Root' to 'Expanded', so that linguists now talk of the Expanded set rather than the Advanced Tongue Root set.

I believe that the observations on the basis of vowel harmony in Akan (Stewart 1967, Pike 1967) and in Akan, Igbo, etc. (Lindau 1975), are true for the Edoid cases and I will in subsequent discussions use the more recent and more accurate 'Expanded'.

2.2.4. Other vowel features

The investigator into the sounds of any Edoid language is faced, in the case of vowels, with vowel sequences which may give the impression of significant length (where the vowels are identical) or of diphthongs (where the vowels in the sequence are not identical).

However, given the ability of vowels to co-occur in the Edoid languages, and given the tonal nature of these languages, it is often very clear that long vowels come from two vowels. Thus Edo ràá 'to steal' can hardly be interpreted as a stem with a long vowel, since there are two distinct syllables, as evidenced by the tone.

The issue of diphthongs is not that easily disposed of. Amayo (1976) has argued that there are phonetic diphthongs in Edo. Examination of his data shows that he views as diphthongs cases of -jV- or -wV- which are derived from iV and uV sequences. All his data suggest that we are dealing with a glide formation rule, since in a -VV- sequence the closer of the vowels becomes non-syllabic.

The phonetic definition of diphthong is '... a sequence of two perceptually different vowel sounds within one and the same syllable' (Catford 1977:215). In the Edo examples, we are dealing with a sequence of glide plus vowel in which the glide is very prominent and cannot be seen as part of the vowel.

I mention the issue of the formation of glides from underlying vowels because it is a very productive process in all the Edoid languages and one that every researcher in this field must grapple with.

Final devoicing of vowels has been observed in Ibilo by Akinlabi (1979). It is a feature that I have confirmed elsewhere and its effect is to shorten final vowels in stems of two (or, rarely, more) syllables. Thus in Emhalhé

órimhì

'corpse'

áñàmhì

'animal'

and in Ibilo

óñwòñò

'guinea fowl'

áthámhà

'hoe'

khónò

'fight'

the final vowels are decidedly shorter than the non-final ones.

It has to be noted that final devoicing of voiced sounds is a universal phenomenon. However, Ibilo and other Edoid languages, apart from this universal tendency, also have a set of items in which the vowel of the final syllable of a non-monosyllabic word is shorter than usual. In such items the syllable affected is part of the stem.

This phenomenon probably explains why languages like Degema (DE) now have final consonants in items like ènám 'meat', etc., where Egene (DE) has ènàm ~ ènàmò 'meat' and Emhalhé has àñàmhì with a weak - i.e. short, partly devoiced-final vowel. We may refer to this process as vowel weakening in final position.

2.3. Conclusion

The phonological status of the phonetic features/characteristics discussed here is demonstrated in the phonological sketches that follow. Where necessary I discuss some of the sounds in greater detail under the relevant language.

PART TWO
CHAPTER THREE
PHONOLOGICAL CHARACTERISTICS OF THE EDOID LANGUAGES

3.1. Syllable structure

It is useful to discuss the syllable in Edoid at two levels - the phonetic and the phonemic (drawing on Pike's 1947 distinction).

At the phonemic level, the two most common syllable structure types are CV and V. Degema and Epie also allow CCV and CVC types phonemically. In the Edoid languages, only consonants (including central approximants) may occur at C, while only vowels may occur at V. Syllabic consonants do not occur at this level in any of the Edoid languages investigated.

At the phonetic level, even those languages which have only CV and V as underlying syllable structure types often have surface CCV structures, largely owing to the creation of approximants from underlying vowels as well as to the deletion of the first vowels in some CVCV stems where the second C is an r- sound or a tapped (alveolar) lateral/nasal. In such cases, the possible -C₂- consonants are [l], [ɾ]/[r]/[ɹ], [y] or [w]. Typically, the latter two, [y, w], result from glide formation rules: [y] from /i, ɪ/ and [w] from /u, ʊ/. I have not found an Edoid language in which this rule or modifications and/or expansions of it do not occur:

... if a close vowel is followed by another non-close vowel, the close vowel is realised as its approximant counterpart.

Thus /CiV/ and /CrV/ give [CyV] while /CuV/ and /CoV/ give [CwV].

On the other hand, Delta Edoid and South-Western Edoid languages tend to have C₁C₂V syllable structures in which the second C is a rhotic or a tapped lateral or nasal.

For example, Egené has Cr sequences in words like:
[úkròmú] 'okro' from /úkùròmú/.

Ukue, a North-Western Edoid language, also has [Cr] sequences.

[The syllable structure of each language will be discussed in the individual phonological sketches that follow in the next chapter.]

Syllabic nasals occur phonetically in Egené but these are derived from underlying 'nasal plus vowel' sequences.

All the Edoid languages have nasalized vowels at the phonetic level, so that both oral and nasalized vowels occur phonetically as syllable nuclei.

Only Degema has closed syllables and these probably arose through the loss of a final vowel in CVCV stems (see section 2.2.4 and chapter 5).

3.2. Consonant contrasts

In DE, implosives occur in contrast with labial-velar stops. In all three languages, b contrasts with d and with gb.

An unvoiced velarized bilabial implosive p^c occurs in Isoko, a SWE language.

Dental plosives occur in Isoko (SWE) and Ukue (NWE). In some Isoko dialects a dental-palatal plosive is used in place of the dental.

Palatal plosives do not contrast with palato-alveolar affricates. Urhobo, Ghotuq, and Ibilo all have palatal plosives. In Isoko, palatal plosives are in dialectal variation with dental ones.

The lenis labial-velar stops kph and gbh occur in the NWE languages in contrast with non-lenis counterparts. Yekhee and Unemé are two NCE languages with this contrast.

Among nasals, the occurrence of the dental-palatal n̩ in Isoko is of interest, but, as with its plosive counterpart, most dialects use a plain dental plosive in its place..

The lenis bilabial nasal is mutually exclusive with the nasalized (spread) bilabial approximant; *ñ*: historically cases of *ñ* derive from earlier *mh. The tapped nasal *n̩* does not contrast with *ñ*, the nasalized alveolar approximant: both *n̩* and *ñ* are usually derived from earlier *nh. The palatal nasal *n̪* contrasts with *ñ* in Urhobo but this is not matched by a contrast between *n̩w* and *w̄*.

Languages with lenis plosives at a particular point of articulation do not have their central fricative counterparts contrasting at the same point of articulation. Thus Emhalhe has bh but not β; Ibilo has bh, kh, gh, but not β, x, γ. In dialects of Yekhee, lenis stops are in free variation with fricative counterparts.

Contrasts between bilabial and labiodental fricatives exist in Urhobo φ, f, v, and Ehueun φ, β, f, v.

There is no contrast anywhere between z and dz. A few languages have dz and all others have z. Its contrasts with ts in Auchi (Yekhee) and Ibilo.

In Ukue, s does not occur. Instead we find *ʂ*.

There is a variety of contrast among central and lateral approximants in the Edoid languages. In the case of laterals, the contrast is basically between a normal non-lenis voiced alveolar lateral l, and a lenis counterpart which is frequently so short as to be heard as a tapped lateral !.

Bilabial approximants do not contrast with labiodental counterparts: the symbol v is used for a bilabial spread approximant in Urhobo; the same symbol represents a labiodental approximant in Edo.

Contrasts between lenis and non-lenis approximants exist in Ghotuo (see below).

3.3. Vowels

At a phonological level we must distinguish between (significantly) nasalized vowels and oral ones. Phonetically, nasalized vowels occur in all Edoid languages, since even oral vowels

become nasalized in positions after nasals. Automatic nasalization of this type will not be discussed here.

Normally, the half-close vowels e and o are not significantly nasalized in the Edoid languages. However, in Epie and in Urhobo e and o exist. Otherwise the vowels that are normally significantly nasalized are: i, ī, ē, ā, ɔ, ɔ̄, and ū.

The language with the largest inventory of oral vowels is Dégema with ten. The smallest number of oral vowel distinctions found in any Eoid language is seven.

Vowel sequences occur and are usually two different vowels. Within stems, however, a sequence of non-identical vowels is typically 'a close vowel followed by a non-close vowel' or the reverse, 'a non-close vowel followed by a close vowel'. Thus CiV and CuV sequences or CVi, CVu, etc., occur in stems. The latter are often an indication of an earlier -C2- in the stem: thus Isoko /uzou/ 'head', /eraø/ 'meat' from Proto-Edoid stems that had a -C2-.

There is a distributional restriction on nasalized vowels: they do not occur in noun and concord prefix position.

3.4. Vowel harmony

Vowel harmony is so pervasive in the Edoid languages that one has to assume it was inherited. In every Edoid language with eight or more vowels, vowel harmony is extensive, covering verbal and noun systems. In those languages with a seven-vowel system, vowel harmony is less in evidence and is restricted to the patterning of vowels in nouns. This is most clearly observable where plurals are formed by alternating the prefix vowel of the noun. This phenomenon is discussed, where necessary, under the relevant language.

In some cases, apparent lack of harmony is explained by the postulation of harmony at a deeper level of analysis (cf. Hoffmann's 1975 analysis of Okpè and Omamor (1973) for Uvbie). On the other hand, Uhami and Ukue appear to have lost every restriction on vowel co-occurrence and thus show no evidence of vowel harmony.

The picture that emerges from examining the operation of vowel harmony in the different languages is the division of the vowels (reserving details for the individual phonological summaries) into two harmonizing sets in which the vowel of a stem and any vowel attached to it (e.g. as subject/object pronoun or noun affix) are likely to be from the same set. From this point of view, the vowels fall into two sets:

I (Expanded) II (Non-expanded)

i	u	i	ø
e	o	ɛ	ɔ

a

3.5. Tone

The Edoid languages parade an interesting array of tone systems ranging from three level tones (Ghotuo, NCE) to two levels, no downstep (Auchi, Avbianwu (NCE), and Isoko (SWE)) and two levels plus downstep (Edo (NCE)).

Elimelech (1976) criticizes my 1973 analysis of Auchi on the grounds that there is downstep in the Ekpheli dialect of Yekhee. I have spoken to speakers of the Ekpheli dialect and agree that there is probably a downstep in that dialect. I have re-examined my data and had more contact with the Auchi dialect and find no downdrift or downstep there. The dialects of Yekhee do not all have to have the same tone system as the Ekpheli dialect, which is geographically distant from the central Auchi dialect of Yekhee.

It has to be pointed out that in most cases my examination of tone could not have been anything but superficial, since I had only a week within which to collect my data in the relevant area. In a group of languages in which tone and syntax are deeply intertwined, one would require a deeper study of the languages concerned to be able to make categorical statements about tone systems. Thus in the phonological sketches that follow, I shall go into detail only in those cases where my data are of such a level as to enable me to discuss details of the system concerned.

One point is of general interest and must be mentioned here: the Edoid languages, when their tone systems come to be compared,

will throw some light on the historical development of tone systems. In the SWE languages, there is generally no downdrift though there is downstep in some cases. Instead, we have a final low raising phenomenon.

The SWE area may be crucial for investigations into questions such as whether three level tone systems developed from two tone plus downdrift systems or vice versa. Already, we now know that, as in Urhobo, a language may have downstep with no synchronic evidence of downdrift (see section 4.6.8, below; see also Welmers 1969).

3.6. Morphology

Although many Edoid languages have simplified their morphology and generally fit Westermann and Bryan's 1952 typological description: "Most Roots (Verb or Noun) are monosyllabic, consisting in CV", the prevalence of second syllables in stems and the use of noun prefixes and concord prefixes lends a complexity of morphology to the Edoid languages of a kind not frequently associated with 'Kwa' languages.

The stem is of CV((C)V) structure. Few stems are longer than this, and they are often loans or onomatopoeic items.

A verb stem is thus usually of CVCV, CVV, or CV structure. In Ghotuo and Aoma, V or VCV verb stems occur through the loss of stem-initial consonants.

A noun (many nouns are formed from verb stems) is usually of V-CV structure (the hyphen separates the prefix from the stem). Polysyllabic nouns are of the structure V-CVCV or V-CVV, etc. Except in the few languages (usually NCE languages at the foot of the Afenmai Hills or NWE languages of the Hills) which have CV-prefixes, nouns invariably start with a vowel. Loans from outside have a prefix added on to fit this picture.

Pronouns almost invariably go with concord prefixes that are now fixed and phonologically invariable in most cases. It is only in languages of the Southern NWE sub-group that varied forms of concordial prefixes still exist. Thus although Isoko has an

invariable *ð-nà(nà)* 'this' which is used with all nouns, Oloma (Southern NWE) (SNWE) has *o-no* or *lo-no* or *a-no*, etc., depending on the class of the noun to which this demonstrative refers. These points are picked up again under the phonological sketches.

The restriction of relatively elaborate concord to a small area of Edoid makes the reconstruction of this feature for Proto-Edoid difficult.

1.1. Degema

4.1. Syllable structure

Of all the Edoid languages, Degema has the most complex syllable structure. Where it is possible to show that CCV syllable types are derived from two underlying syllables in other Edoid languages, such an explanation is not always possible in Degema.

The possible syllable structures are: V, CV, CCV, CVC, and CCVC (Thomas and Williamson 1967:21). In cases of a syllable-initial cluster, the second consonant is almost always /l/ or /r/. In a few cases, there are clusters such as /sv/ in /svɛké/ 'lose' and /sn/ in /snèsé/ 'hide'. However, these cases have alternate pronunciations in which the intervening vowel is recovered: /sɔvɛké/ 'lose' and /sinèsé/ 'hide'.

In closed syllables the arresting consonant may be any of the following: /m, n, v, l, r/.

Sequences of nasal plus consonant occur in a few items which may have been borrowed: /ònsó/ 'soap'.

4.1.2. Consonant inventory

m	n	ny	ŋ	nw
b	d			
p	b	t	d	k
f	v	s	z	h
		r	y	w

4.1.3. Notes

/ŋ/ is not widely distributed.

/ny/ and /nw/ are [n] and [ŋw] respectively. They are in free variation with [ñ] and [ñw] respectively,

[ŋm] occurs in nasal plus labial-velar sequences where I treat

it as an allophone of /m/.

/v/ is realized as a bilabial fricative [β] in the environment of rounded vowels.

/f/ is also sometimes realized as [ɸ] in the same environment.

4.1.4. Contrasts

Some of the contrasts in 4.1.2. may be amplified as shown below:

b ~ b ~ gb

/ə-βá/ 'arm, hand'

/βo/ 'build, thatch roof'

/bo/ 'invoke juju; consult oracle'

/ɔ-gbá/ 'thigh'

m ~ n ~ ny ~ ñ ~ nw

/ma/ 'mould'

/ənám/ 'animal'

/nyan/ 'have, own'

/ɔ-nqáñína/ 'farm'

/a-nwó!nwá/ 'shame'

l ~ r ~ d ~

/ə-lalá/ 'swamp'

/rar/ 'spread out'

/dá/ 'drink (alcohol)'

/da/ 'collect (rain water)'

4.1.5. Vowels

Degema operates a ten-vowel system. It thus has the most elaborate vowel system in the whole of Edoid. The ten vowel phonemes are: /i, ɪ, e, ɛ, ə, a, ɔ, o, ʊ, u/.

They are contrasted in the following items:

u-dí 'alcohol' dum 'mould'

dí 'eat' a-dó 'face'

o-dégnényo 'old person' ú-!donó 'in-law'

dé 'buy' dɔí 'swallow'

é-!dá 'river' da 'drink'

The close vowels have nasalized counterparts, /i̊, ɪ̊, ɔ̊, ʊ̊/, which occur only as the final element in a sequence of two vowels except in a few loan words such as /àràsí/ 'rice'.

4.1.6. Notes

Vowel sequences are numerous in Degema. Each sequence starts or ends with a close vowel. In the few cases where a sequence involves more than two vowels the sequence begins and ends with a close vowel.

Many of these sequences end with a nasalized vowel:

/dei̊/ 'fall' /neū/ 'fart'

/dɔí/ 'swallow' /i-tóú/ 'cloth'

All vowels are nasalized after nasal consonants. /i/ and /ɪ/ may be realized as [y] if they occur at the beginning of a vowel sequence; /u/ and /ə/ may be realized as [w] under the same conditions.

/ə/ does not occur in noun prefixes.

4.1.7. Vowel harmony

Degema operates a very symmetrical harmony system in which two sets of vowels (five each) are differentiated by the feature [EXPANDED]:

EXPANDED		NON-EXPANDED	
i	u	ɪ	ə
e	o	ɛ	ɔ
		ø	
		a	

Except in the case of compounds, nouns adhere strictly to the rules of vowel harmony. Verbal constructions also follow rules of harmony so that the set to which the vowel of the verb stem belongs determines the selection of vowels for pronominal and other parts of the verbal construction, such as the tense/aspect markers.

4.1.8. Tone

Two tones are distinctive. It appears that there is down-drift as well as a limited downstep (cf. Thomas and Williamson

1967). I do not have the data to say more than this.

4.1.9. Morphology

Some of the most interesting morphology in the whole of Edoid is to be found in the nominal and verbal systems of Degema. The noun class system of Degema is fully treated in Elugbe (1976a). Degema nouns are classified according to gender with each gender made up of singular/plural pairings. These pairings are largely semantically determined so that the phonological shape of a word does not give a clue as to its plural form. Thus:

u-kpé	a-	'year'	
ø-bí	a-	'leaf'	
but	ú-kukú	i-	'waterpot'
	á-táfí	r-	'tree'

The actual realization of the pairings is determined by the rule of vowel harmony (see Elugbe 1976a).

In the verbal system, the formation of infinitives or verbal nouns from the verb stem (same as the imperative form) deserves mention here. The general rule is as follows:

In all cases the affix may be summarized as:

U-...-(A)m
where U is u- or ø- depending on vowel harmony rules; A is e- or a- for the same reasons, and items in brackets are optional.

The formula just given is expanded and used as follows:

(a) with stems ending in non-close vowels, affix U-...m.

tatan	á-tátá!né-m	'to answer'
bine	ù-bí!né-m	'to ask'

(b) with stems ending in consonants, affix U-...Am.

hir	ù-hír-!ém	'to surround'
far	á-fár-!ám	'to tie'

If a verb ends in a close vowel, glide formation takes place:

dí	'eat'	ø-d'yám	'to eat'
du	'follow'	u-dwém	'to follow'

4.1.10. Other sources

Thomas and Williamson (1967); Williamson (1970); Elugbe (1976a; 1981).

4.2. Egene

4.2.1. Syllable structure

An Egene syllable is normally of CCV, CV, or V structure. Every V element carries tone.

In CCV syllables, only /r/ may occur in C₂ position. Elugbe (1973) has argued that CrV syllables are derived from CVrV stems in which C is a velar or bilabial consonant and the two Vs are identical.

CyV and CwV sequences occur in Egene, but these are clearly derived from underlying CIV and CUV sequences respectively (low tone is unmarked):

/uáí édiro/	[ùáyédirò]	'native (i.e. palm)wine'
/áfra/	[áfyà]	'room'
/esuei/	[èswèì]	'axe'
/áboá/	[ábwà]	'dog'

Syllabic nasals [m] and [n] occur but are clearly derived from underlying mU and nI respectively:

[ùtòm]	~	[ùtòmù]	'head'	/utomu/
[òtám]	~	[òtámò]	'penis'	/otamø/
[èsèn]	~	[èsènì]	'fish'	/esenì/
[èsán]	~	[èsánì]	'pepper'	/esáni/

Note that only -CVCV stems are involved in this process, and that the deleted vowel has to be on a low tone which is then transferred on to the preceding nasal.

4.2.2. Consonant inventory

m	n
b	d
p	t
f	v
s	z
	l
r	y
	w
ÿ	ŵ

4.2.3. Notes

Syllabic nasals are derived as demonstrated in 4.2.1. above.

/t/ and /d/ optionally become palato-alveolar affricates [ts] and [dʒ] respectively before close front vowels /i/ or /ɪ/.

/s/ and /z/ also become palato-alveolar before /i/ or /ɪ/.

A sequence of an alveolar obstruent plus a close vowel will coalesce to give a palato-alveolar counterpart if followed by another vowel in the same stem:

/ti/	[tɿ] / [tʃɪ]	'play'
/di/	[dɿ] / [dʒɪ]	'hide, save'
/átriéme/	[átsé̯mɛ̯]	'my brother/sister'
/dʒɔ/	[dʒɔ̯]	'sharpen'
/sɪ/	[sɪ]	'deny'
/zi/	[zɪ]	'bury'
/íisioni/	[íʃðõ̯]	'five'
/ózíee/	[ózé̯e̯]	'hunger'
/y/ is IPA [j].		

4.2.4. Consonant contrasts

The consonant contrasts may be amplified as follows:

m ~ b ~ p ~ b ~ k ~ g ~ kp ~ gb ~ v

/ma/ 'mould'

/ba/ 'multiply; spread (e.g. sore)'

/apapáa/ 'groundnut'

/ba/ 'by-pass in order to avoid'

/ka/ 'stop (of rain)'

/ga/ 'separate'

/kpa/ 'peel'

/gba/ 'search for'

/va/ 'butcher; cut animal to pieces'

l ~ r ~ b ~ d ~ t ~ d ~ n

/e-ibili/ 'palm oil'

/i-rií/ 'thread'

/i-dii/ 'rope'

/ti/	'play'
/é-diro/	'(dialect of) place within Egene'
/i-ni/	'name'
m ~ w ~ y	
/mo/	'bear fruit'
/wɔ/	'be low (of river)'
/yɔə/	'drink (water)'
y ~ y	
/ya/	'be in a place'
/ŷa/	'be caught in a net (of fish, etc.)'
w ~ w	
/wi/	'break (of day)'
/wɪŷɛ/	'dodge'

4.2.5. Vowels

There are nine oral vowel phonemes in Egene:

/i, ɪ, e, ɛ, a, ɔ, o, ō, u/

The following items show most of the vowels in minimal contrast:

/gbi/	'knit'
/gbe/	'go'
/gbɛ/	'steer (with paddle)'
/gba/	'search for'
/fi/	'soak through (of water)'
/fɪ/	'be tight'
/ko/	'pluck'
/ko/	'call'
/kɔ/	'wrap up'
/ku/	'fold'

4.2.6. Notes

[ə] occurs as an allophone of /a/ when /a/ occurs with the Expanded vowels /i, e, o, u/.

Vowel nasalization occurs automatically after the nasal consonants m, n, y, and w.

Close vowels become optionally non-syllabic before other (non-close) vowels: /i, ɪ/ become [y] and /u, ə/ become [w].

4.2.7. Vowel harmony

The vowels fall into two harmony sets:

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

The two sets are mutually exclusive except for /a/ which, although basically of the non-expanded set, may go with the Expanded set sometimes and be realized as [ə].

In nouns, prefixes agree with stems in terms of the feature Expanded. In verbal constructions, pronominal and tense/aspect markers harmonize with the verb stem.

/u-tomu/	'head'
/ú-le/	'banana'
/ú-di/	'alcohol'
/í-dó/	'they stole'
/í-dá/	'they drank'
/ó na dó/ [ó nè dó]	'he is stealing'
/á na dó/ [á nà dó]	'he is buying'
/á-vora/	'female'
/é-da/	'beans'
/ə-misi/	'sleep (n.)'

4.2.8. Tone

Elugbe (1973) (q.v.) analyzes the Egene system as two tones plus downstep, supporting his analysis with the argument that downstep, supporting his analysis with the argument that downstep occurs (repeatedly sometimes) in the flow of speech. Thomas (1969) had claimed earlier that it was a two tone plus upstep system. Elugbe agrees there is tonetic upstepping which is predictable, but insists that downstep, on the other hand, is unpredictable.

4.2.9. Morphology

As compared with Degema, Egene morphology is very much simplified. Nouns occur in one phonological shape and do not vary their prefixes for number or gender. Pluralization is achieved by qualifying the noun with a preposed /egue/.

Tonal variations and a number of particles are used to mark tense and aspect.

4.2.10. Other sources

Thomas and Williamson (1967); Thomas (1969; 1974); Elugbe (1973).

4.3. Epie

4.3.1. Syllable structure

V and CV are the two common syllable types. In addition to vowels, syllabic nasals occur at V. CVC is rare.

4.3.2. Consonant inventory

m	[n]
b	ɖ
p	t
f	k
v	g
s	kp
z	gb
l	
r	y
y	ɣ
w	w

4.3.3. Notes

As with the other Delta Edoid languages, /b/ contrasts with /gb/ in Epie.

/l/ does not occur before nasalized vowels, before which [n] occurs instead. [l] and [n] are therefore allophones of /l/. Similarly, the approximants /y/ and /w/ become nasalized before /V/:

/y/	→	[ȳ]
/w/	→	[ȫ]
but	/ȳ/	→ [ȳ]

/r/ was not found before /V/.

Consonants in $-C_2-$ position in the stem had a general tendency to be shorter.

/γ/ and /r/ have limited distribution.

Syllabic nasals occur preceding another consonant with which they are homorganic.

4.3.4. Consonant contrasts

The contrast between /b/ and /gb/ is easily demonstrated along with some others in the following sets:

m ~ b ~ gb ~ w	
/ma/	'mould'
/bãã/	'plait (hair)'
/à-gbà/	'jaw/chin'
/wãã/	'count'

4.3.5. Vowels

There are nine oral vowel phonemes and nine nasal ones in Epie.

Oral vowels: /i, ɪ, e, ε, a, ɔ, o, ə, u/

Nasalized vowels: /ī, ɪ̄, ē, ε̄, ā, ɔ̄, ō, ə̄, ū/

4.3.6. Notes

The close vowels may become non-syllabic in a position immediately preceding another vowel.

4.3.7. Vowel harmony

In nouns as well as in the verbal construction, prefix vowels of aspectual particles, etc., are selected from the same set as the vowel of the stem. The two sets are:

EXPANDED	NON-EXPANDED
i, ɪ, ʊ, u	i, ɪ, ɔ̄, ō
e, ɛ, ɔ̄, o	ε, ɔ̄, ɔ̄, ə̄

Some pronouns were found to have invariable forms that defied the rules of vowel harmony: èní 'we', bàà 'you (pl.)', for example.

4.3.8. Tone

Epie operates a two-tone system with downstep mostly at the end of the utterance. The status of this third level is not clear at the moment.

4.3.9. Morphology

Epie morphology is much simpler than that of Degema. In the dialect studied pluralization by prefix vowel alternation does not take place, though it may in others (see Thomas and Williamson (1967)). Tone plays a great part in verbal conjugation.

4.3.10. Other sources

Thomas and Williamson (1967), Williamson (1970b).

4.4. Eruwa

4.4.1. Syllable structure

Syllable types are V, CV, CCV. In CCV types, the second C is /r/.

4.4.2. Consonant inventory

m							
p	b	t	d	k	g	kp	gb
f	v	s	z	x	y		
				l			
v		r		y		w	

4.4.3. Notes

All the approximants (lateral and central) have nasal/nasalized counterparts before /V/.

/x/ is realized as a voiceless glottal fricative.

/r/ is a voiced alveolar central approximant.

/b/ was not found before nasalized vowels, so [m] and [b] may therefore belong to the same phoneme.

4.4.4. Consonant contrasts

See Odumosu (1973) for a detailed study of the sound system of Eruwa.

4.4.5. Vowels

Erywa has nine oral vowel phonemes:

/i, ɪ, e, ε, a, ɔ, o, ə, u/

All the nine have nasalized counterparts: /ī, ɪ̄, ē̄, ε̄, ə̄, ɔ̄, ō, ə̄, ū/.
ɔ̄, ə̄, ū.

4.4.6. Notes

Close vowels may become non-syllabic when they occur in a sequence and are followed by other vowels.

4.4.7. Vowel harmony

There is vowel harmony in Erywa, with the vowels falling into the two groups:

EXPANDED	NON-EXPANDED
i, ɪ, ʊ, u	ɪ, ɪ̄, ə̄, ə
e, ē, ɔ̄, o	ε, ε̄, ɔ̄, ɔ̄

There is vowel harmony in the noun as well as in the verbal construction.

4.4.8. Tone

The system is two tones plus downstep. There is downdrift, so that successive highs are progressively lowered by intervening lows. The Erywa tone system is discussed in Odumosu (1973:33-40).

4.4.9. Morphology

There is no pluralization by prefix change. These and aspect in the verb are carried by a system of particles and tonal variation.

4.4.10. Other sources

Odumosu (1973).

4.5. Isoko

4.5.1. Syllable structure

Syllables are V, CV, or CCV. In CCV syllables, the second consonant is /r/, and the first C is a labial, velar or glottal consonant.

4.5.2. Consonant inventory

m	n	ŋ	w
p	b	t̄	d̄
f	v	s̄	z̄
h	g	k̄	ḡb̄
l̄	l̄	l̄	l̄
r̄	r̄	r̄	r̄
ȳ	ȳ	ȳ	ȳ

4.5.3. Notes

/ŋ/ is a dental nasal [ŋ] in some dialects and a dental-palatal [ɲŋ] in some others, including Uzere, the standard dialect described here.

/kp/ is an unvoiced velarized bilabial implosive [pc̄].

/t̄/ and /d̄/ are palatal in some dialects. In Uzere, /t̄/ and /d̄/ become palato-alveolar affricates before close front vowels /i/ and /ɪ/. A sequence /tiv/ becomes [tʃV] and /diV/ becomes [dʒV].

/r̄/ is a voiced alveolar tap with a lateral off-glide. It sometimes comes out as a plain tap without a lateral element.

/r/ is a voiced alveolar trill.

In a few items, [v] is in free variation with [V], a breathy-voiced labiodental fricative. As there is no contrast involved, we shall use the plain representation /v/.

/yw/ is one composite sound: a voiced labialized velar central fricative. The labial element and the fricative element at the velum are synchronic. Ladefoged (1964) drew a distinction between an approximant /w/ and a fricative /w̄/. However, as there is no friction at the lips, the more radical velar constriction must be taken as the primary point of articulation, while the less radical labial element (consisting in the rounding of the lips) is considered secondary. The contrast is between /v/ (an approximant with [w] as allophone) and /yw/ labialized velar fricative (see below).

/v/ is a voiced bilabial approximant. In the environment of rounded vowels it becomes a labial-velar approximant.

4.5.4. Consonant contrasts

Ladefoged (1964:58) cites some contrasts for Isoko which, on investigation, are in need of clarification. The most famous of the claimed contrasts are /l/ ~ /x/ ~ /s/ ~ /z/. I have pointed out above (2.1.4) that the last case, /z/, is in fact a sequence /hr/. As for '/x/', it is clearly trilled in my informant's speech. Donwa (1982) has made excellent spectrograms of these sounds and /r/ comes out clearly as a trill.

As for the contrast /w^t/ ~ /w/, I recognize this as a contrast between /y^w/ and /v/. Finally, Ladefoged has one 'laugh', suggesting a contrast between /w/ and /m/. Again what we have is a CC sequence - [hw]: /hóé/ 'laugh', /ò-hóé/ 'to laugh'. My informant gives the two forms:

[hwé] and [hóé] 'laugh!'

Some of the interesting consonant contrasts are exemplified below:

m ~ n ~ ñ ~ v ^w	l ~ r ~ s ~ z
/ma/ 'mould'	/lá/ 'to jump'
/no/ 'ask, question'	/òá/ 'yours'
/na/ 'walk'	/òrá/ 'to fly'
/úñwé/ 'nose'	
p ~ b ~ kp ~ gb	y ~ w ~ v ~ ñ
/ípápá/ 'groundnut'	/óyéné/ 'God'
/útábà/ 'tobacco'	/éywé/ 'hoe'
/òkpá/ 'cock'	/éví/ 'goat'
/ágbà/ 'jaw'	/ívfé/ 'shoe'
t ~ d ~ t~w ~ d~l	
òtè	
ùdè	'pot'
ùdè	'twenty'
ómstè	'daughter'
èdè	'day'

4.5.5. Vowels

There are nine vowels: /i, ɪ, e, ɛ, ə, a, ɔ, ɔ:, ʊ, u/. These are exemplified in the following:

/si/	'call'
/sɪ/	'refuse'
/se/	'call'
/ósè/	'father'
/sa/	'shoot, hit'
/ísò/	'faeces'
/oso/	'rain'
/so/	'sing'
/ètù/	'hat, cap'

4.5.6. Notes

All vowels are nasalized after nasal consonants.

/i/ and /ɪ/ may become non-syllabic [y] before another vowel; /u/ and /ə/ may become [w].

4.5.7. Vowel harmony

There is vowel harmony in the noun and in the verbal system. Although the vowels fall into the usual Edoid pattern:

EXPANDED and NON-EXPANDED

i	u	ɪ	ø	ə	ɔ	ɔ:	ʊ	u:
e	o	ø	ɛ	ə	ɔ	ɔ:	ʊ	u:

the ability of /ɛ/ to occur with the EXPANDED set would suggest that it be treated as the neutral vowel in the harmony system. The reasons for this are partly historical (as will be seen in chapter 5 of this work). In general, harmony is more regular in the verb system than in the noun.

4.5.7.1. Nouns

(1) u-kpè	'year'	ò-1é	'yam'
è-ní	'elephant'	ò-kpà	'cock'
ù-tó	'mat'	è-ví	'goat'
í-tú	'nails'	ò-zó	'ear'

Exceptions are found in the following which are typical of such 'mixed vowel' nouns:

- | | | |
|-----|--------|----------|
| (2) | ò-ké | 'pot' |
| | í-sò | 'faeces' |
| | é-gòdì | 'hawk' |

4.5.7.2. Verb system

In the past tense examples given below, the vowel of the verb stem determines the choice of vowel in the pronoun:

- | | | |
|-----|-------|-------------|
| (3) | ò dè | 'he bought' |
| | ò kpé | 'he killed' |
| | mè sò | 'I sang' |
| | mè kò | 'I sewed' |

When a pronoun has /a/ as its stem vowel, it uses that form with both sets:

- | | |
|-------|------------|
| mà sò | 'we sang' |
| mà kò | 'we sewed' |

4.5.8. Tone

Mafeni (1969) analyzed the Isoko system as 'two tones plus downstep'. Writing at a time when the study of downstep/downdrift systems was the vogue, it is hardly surprising that Mafeni should have come up with that analysis.

As Elugbe (1976c, 1977) has demonstrated, the Isoko system is simply two tones - and nothing else. A third level is identified only at the end of a tone group before pause where all low tones are raised to mid. This phenomenon is restricted to statements and, in the case of individual lexical items, this includes citation forms.

Questions, negative constructions, and exclamations do not exhibit this feature.

4.5.8.1. Final low raising

- | | | | |
|-----|--------------|-----------------|-----------------|
| (5) | ò-bò (Lo-Lo) | [òbò] (Mid-Mid) | 'native doctor' |
| | ù-tó (Lo-Hi) | [ùtò] (Lo-Hi) | 'mat' |
| | ú-kè (Hi-Lo) | [úkè] (Hi-Mid) | 'back' |
| | á-bò (Hi-Hi) | [ábò] (Hi-Hi) | 'basket' |

But the same tones are low (i.e. have not been raised) in the following examples where they are non-final:

- | | | | |
|-----|-----------------|-----------------|-----------------------|
| (6) | ò-bò | ò dè → [òbwòdè] | '(the) doctor bought' |
| | doctor he buy | | |
| | ú-kè | ò-mé → [úkémé] | 'my back' |
| | back concord-my | | |

There is no downdrift in Isoko; successive Highs are not lowered by intervening lows:

- | | | | |
|-----|-----------------|-----------------------------|---------------------------|
| (7) | ò dè | ù-tó → ò dútó | 'he bought a mat' |
| | he past-buy mat | | |
| | ò dè | ù-tó kà Ává → ò dútó kà Ává | 'he bought a mat for Ava' |

We may represent the Low-Raising Rule rather informally as in Elugbe (1976c):

- | | | | |
|-----|-----------------|----------------------------|--|
| (8) | Lo _n | → Mid _n / — # # | Raise any number of utterance-final lows to mid. |
|-----|-----------------|----------------------------|--|

4.5.8.2. Tone and intonation

Low tone raising does not take place, however, if the utterance is a question or an exclamation. Let us compare (9):

(9) Question

- a. ?ò-bò - óbò [__] 'doctor?'
- b. ?ú-kè - úkè [__] 'back?'
- c. ?ù-tó - ùtò [__] 'mat?'
- d. ?á-bò - ábò [__] 'basket?'
- e. ?òdè - ódè [__] 'did he buy?'

In (9) we have questions: final lows are not raised and final highs are falling. We must conclude therefore that questions are characterized by a low tonorph (i.e. a floating low tonal morpheme) which has the effect of blocking the Lo-Raising Rule, causing final highs to fall, and simply merging with final low.

If we now take (10), made up of exclamations, we find that final lows are not raised but final highs do not fall:

(10) Exclamation

- a. !bò → bò [--] 'doctor!'
- b. !kè → kè [-] 'back!'
- c. !tó → tó [-] 'mat!'
- d. !á-bó → ábó [--] 'basket!'

The overall evidence suggests that we are dealing with an intonation feature with three characteristics:

- (a) statements: characterized by final low raising (cf. (5) above).
- (b) questions: characterized by a final low tonorph - i.e. a final floating low - which merges with a low, causes a high to fall and blocks the application of the Lo-Raising Rule (cf. (9)).
- (c) exclamations: characterized by the absence of both low raising and the final low tonorph (cf. (10)).

It would appear, therefore, that every Isoko utterance, before entering the phonological level, has a feature

STATEMENT or QUESTION or EXCLAMATION attached to it.

Our (8) above will have to be revised accordingly as (11) while (12) is added.

- (11) Lo_n → Mid_n/ — # #] STATEMENT
- (12) Ø → Lo / — # #] QUESTION

Thus an item like /bò/ 'doctor' will have different tonal shapes determined by intonation:

- (13) a. bò → bò 'doctor' by (11)
- b. ?bò → bò by (12) → bò 'doctor?'
- c. !bò → bò 'doctor!'

I have followed above the simple convention of marking questions by a preceding question mark and exclamations by an exclamation mark.

What is clear from all this is that final low tone raising and final floating low insertion are not phonetically motivated processes: they are syntactically motivated.

4.5.9. Morphology

In Isoko, pluralization is achieved by changing the prefix vowel of the noun. Most of this is phonologically predictable and

usually involves changing singular e-, o-, u-, to i- (plural) or singular ε-, a-, ɔ-, ə- to ɪ- (plural): the choice is determined by vowel harmony.

However, a few plurals in ε- and a- defy this rule. The plurals in a- are notable because they involve nouns referring to some parts of the body.

4.5.10. Other sources

Ladefoged (1964); Mafeni (1969); Elugbe (1976c; 1977; 1978b; 1980a), Donwa (1982).

4.6. Okpe

4.6.1. Syllable structure

CCV, CV, and V syllable types are identified in Okpe. In the CCV type, the second consonant is f, a voiced alveolar tap with a faint lateral offglide. Moreover, only labial and velar sounds may occur as the first consonant in such syllables.

/i-mrī/	V-CCV	'fat'
/ə-kpa-kə/	V-CV-CV	'elder'
/dε/	CV	'buy'

In the sequence -kərə, /ə/ becomes non-syllabic, giving [kərə]
 /e-kərə/ [ekərə] 'to gather'

As in other Edoid languages, close vowels become non-syllabic between a consonant and another vowel.

/u-rié/	[ùryé]	'river'
/o-gúá/	[ògwá]	'house'

4.6.2. Consonant inventory

m									
p	b	t	d	c	ʃ	k	g	kp	gb
ɸ	f	v	s	z	ʒ	3	h	y	w
r	ɾ								
l									

4.6.3. Notes

The approximants are nasalized in the environment of nasalized vowels. In the case of /l/, the result is a voiced alveolar nasal [n].

The status of the palatal consonants is not clear to me. (I have only recently replaced my Okpè and Uvbię data which I lost sometime in 1980.)

The alveolar tap is realized as a tapped nasal [n̩] before nasalized vowels.

4.6.4. Consonant contrasts

As can be seen from 4.6.3. above, I am not able to give a picture of the more interesting contrasts as I would normally do. There is a possibility that [ŷ], an allophone of /y/, contrasts with /n/ (as in Urhobo, see 4.7.4. below):

/é-yɛ/	'sand'
/ù-né/	'housefly'

I would have to check this out for confirmation.

4.6.5. Vowels

At a (systematic) phonemic level, there are nine oral and nine nasalized vowels in Okpè:

/i, ɪ, e, ɛ, a, ɔ, o, ʊ, u/ and /i, ì, ɛ, ë, ɔ, ɔ̄, ʊ̄, ū/.

4.6.6. Notes

/ɛ/ and /ɔ/ do occur:

/vìɛ/ 'abuse'

/gbò/ 'stink'

Hoffmann (1973) points out that phonetically both /ɪ/ and /e/ are realized as [e], while both /ɔ/ and /o/ are realized as [o].

4.6.7. Vowel harmony

See Hoffmann (1973) for a very interesting study of vowel harmony in Okpè.

4.6.8. Tone

Hoffmann (1973) marks two tones and a downstep in his examples. Until a better analysis emerges, we shall assume that Professor Hoffmann is correct.

4.6.9. Morphology

In nouns, Okpè normally forms plurals by changing prefix vowels. Tone and various affixes are employed in deriving various forms of the verb.

4.6.10. Other sources

Hoffmann (1973).

4.7. Urhobo

4.7.1. Syllable structure

Phonologically, the possible syllable structures in Urhobo are V and CV. There are no syllabic consonants, so that only vowels occur at V.

According to Elugbe (1973), CCV syllables occur in which the second consonant is /l/. Such syllables are analyzed as underlyingly CVCV. It is claimed that the two V-elements being identical and separated by /l/, the first one is deleted. This happens only if the first consonant is labial or velar. Thus:

/ð-kì-lì/ → [ðkìl] 'he-goat'

4.7.2. Consonant inventory

m	n	ny
p	t	d
b	c	g
r	z	k
ɸ	v	g
f	s	ŋ
z	ʒ	h
ʒ	θ	y
h	θ	w
l	l	
l̩	l̩	
v	y	

4.7.3. Notes

The laterals /l/ and /l̩/ have nasal allophones [n̩] and [n̪] respectively before nasalized vowels. The central approximants have nasalized allophones, also before nasalized vowels. The occurrence of /ny/, phonetically [n̪], and /y/, IPA [j], on the chart thus correctly reflects an interesting contrast between /ny/ and [ŷ].

/ð!nyð/ [ðn̪ð] 'honey'

/ayɛ/ [àyɛ] 'they'

/yã/ [ŷã] 'go, walk'

/l/ is more often a tap with lateral offglide, [l̩]

/h/ is realized as a voiceless glottal fricative.

/ŷ/ is strongly labialized before /u/; contrast between it and

/w/ is neutralized before /u/.

/h/ and /y/ are heavily nasalized where they occur before nasal vowels; they become [ñ] and [ŷ] respectively. In addition, /y/ is realized as [ŋw] before /ü/.

4.7.4. Consonant contrasts

Some interesting consonant contrasts occur in Urhobo. There is a contrast between /n/ and /y/. There is probably also a contrast between [ŋw], allophone of /y/ before /ü/, and [ŵ], allophone of /w/ before nasalized vowels.

4.7.5. Vowels

There are seven oral vowels and seven nasal vowels in Urhobo: /i, e, ε, a, ɔ, o, u/ and /ĩ, ē, ẽ, ã, ɔ̄, ō, ū/ respectively.

The close back non-expanded vowel [ə] occurs in two items: [ávə] 'one' and [b̄sə] 'hawk', evidence that Urhobo originally operated a system that included /ə/ (see Elugbe 1973 and later in this work).

That /ẽ/ and /õ/ must be recognized in Urhobo is supported by examples such as:

/fūẽ/	[fŵẽ]	'heal'
/gbõ/	[gb̄õ]	'smell, stink'

4.6.6. Notes

As in other Edoid languages, close vowels in Urhobo become their approximant counterparts if preceded by a consonant and followed by another vowel:

/viɛ/	[vyɛ]	'cry'
/fūẽ/	[fŵẽ]	'heal'

4.7.7. Vowel harmony

Elugbe (1973), following Kelly (1969), applies the term harmony only to vowel patterning in the Urhobo verb phrase, claiming that harmony has broken down in the Urhobo noun to the extent that we can no longer speak of harmony. The vowels, on the basis of their behaviour in the verb phrase, can be divided into two sets:

1. EXPANDED

i, ɪ u, ū
e, ē o, ō

2. NON-EXPANDED

(e, ē) ɔ, ɔ̄
ε ẽ a, ã

It should be noted that it is /e/ and /ẽ/ which are partly neutral within the system; depending on the part of the verb phrase we are dealing with, /e/ and /ẽ/ behave sometimes as set 1 and other times as set 2 vowels. When they occur in stems, however, they invariably attract EXPANDED vowels in any affixes that may be attached to them.

4.7.8. Tone

The Urhobo tone system has been the subject of varying analyses by Elugbe (1973 and 1977). In 1973 I thought that the Agbarho dialect, like the Eku dialect as analyzed by Welmers (1969), was an unusual type of two tone plus downstep system, with the following characteristics:

- a) two tones plus downstep
- b) there is no downdrift
- c) downstep is restricted and not synchronically traceable to lost low tones.

I later observed that after the 'downstep', it is possible to move up to high within the same tone group. As this is a possibility normally forbidden in '2 tone plus downstep' systems, I concluded that Urhobo is a 3-level tone system (cf. Elugbe 1977).

For the present work, I have taken some more data and examined the facts a little more closely, even though many questions remain to be answered.

The facts suggest that my earlier 1973 analysis of the system as '2 tone plus downstep' is the correct one. I will briefly present below the evidence for this revision.

The facts that remain uncontested by additional research are that:

- a) there is no downdrift in Urhobo
- b) there is downstep;
- c) after low there is no contrast between high and downstep; yet,

d) after downstep, it is possible to go back to high within the same tone group.

The problem with Urhobo is the apparent conflict between (c) and (d) above. It would appear that one way of resolving this conflict would be to discover under what circumstances one may move from downstep back to high. Since the data at my disposal are not enough to resolve the issue, I will simply demonstrate below why Urhobo should be analysed as two tones plus downstep.

In a typical three-level tone system, the third level may have lowered allophones but the conditions under which the allotones occur can be described. In Urhobo, there may be repeated occurrence of downstep, leading to different levels of mid which cannot be explained:

$\acute{s!seb\acute{u}}$	'father'	$\acute{s!ny\acute{s}}$	'honey'	$\acute{d\acute{e}}$	'buy'
$\acute{s!seb\acute{u}ny\acute{s}}$	'father bought honey'				

[---]

I suggest that examples like this support the analysis of the third level as a downstep.

On the other hand, in the associative construction which is marked by \acute{le} , there is evidence to support our point (d) above.

$\acute{o\acute{s}hy\acute{s}}$	$\acute{l\acute{e}}$	$\acute{s!se\acute{e}}$	$\acute{[s\acute{n}\acute{b}\acute{l}\acute{o}\acute{s\acute{e}]}$	'father's honey'
honey	of	father	[---]	

$\acute{o\acute{t}\acute{s}}$	$\acute{l\acute{e}}$	$\acute{o\acute{c}\acute{e}}$	$\acute{[o\acute{t}\acute{e}\acute{l}\acute{o}\acute{c\acute{e}]}$	'bottom of pot'
ground	of	pot	[---]	

Urhobo also exhibits tonal manifestations of intonation which are clearly cognate with those observed in Isoko. For example, final low tones are raised in statements. This final low raising is absent in exclamations. Questions are marked by a low tonophor which merges with final lows, causing a final low downglide, and causes highs to fall:

$\acute{s\acute{b}\acute{b\acute{o}}/$	[---]		'doctor'
$\acute{s\acute{k\acute{a}}/$	[---]		'maize'
$\acute{s\acute{u}\acute{k\acute{o}}/$	[---]		'cup'
$\acute{!s\acute{b}\acute{b\acute{o}}/$	[---]		'doctor!'

$/!s\acute{k\acute{a}}/$	[---]	'maize'
$/!s\acute{u}\acute{k\acute{o}}/$	[---]	'cup!'
$/?s\acute{b}\acute{b\acute{o}}/$	[---]	'doctor?'
$/!s\acute{k\acute{a}}'/$	[---]	'maize?'
$/!s\acute{u}\acute{k\acute{o}}'/$	[---]	'cup?'

4.7.9. Morphology

Although Urhobo nouns are pluralized by prefix vowel alteration, this is done mostly by phonological rather than by semantic rules. It is only in a few parts of the body, such as 'eye', 'tooth' and the limbs, that pluralization (in /a-/) appears to be semantically determined.

4.7.10. Other sources

Kelly (1969a; 1969b), Welmers (1969; 1973), Elugbe (1972a; 1973; 1977); Olomukoro (1980).

4.8. Uvbie

4.8.1. Syllable structure

Apart from CV and V, CCV syllable types are found in Uvbie. Any syllable-initial cluster must start with a labial or velar consonant, followed by the alveolar tap \acute{r} . As in Okpe, this tap has a faint lateral element.

4.8.2. Consonant inventory

m	[n]	ny
p	b	t
d	c	g
f	v	s
z	j	dʒ
h		
r	ʃ	
l		y
		w

4.8.3. Notes

As with Okpe, it is not clear what the status of the palatal consonants is. Note that dʒ occurs where z might have been expected.

The approximants become nasalized before nasal vowels. There may be a contrast between /ny/ ([n]), and [ŋ].

The alveolar tap /ɾ/ has a nasal allophone [n] before nasal vowels. [n] is an allophone of /l/.

4.8.4. Consonant contrasts

It may be that there is no contrast between the palatal fricatives and the alveolar fricatives.

However, there is a clear contrast between the palatal and velar plosives. The affricate [dʒ] may well be an allophone of /d/ or /g/.

4.8.5. Vowels

There are nine oral vowels and nine nasal ones:

/i, ɪ, e, ε, a, ɔ, o, ə, u/ and /ĩ, ï, ẽ, ɛ, ã, ɔ̄, ɒ̄, ə̄, ũ/.

4.8.6. Notes

The contrast between /ẽ/, /õ/ and their oral counterparts (as in Okpè and Urhobo) is worth noting.

4.8.7. Vowel harmony

See Omamor (1973) for a detailed discussion of vowel harmony in Uvbię.

4.8.8. Tone

Omamor (1973) marks only high and low on her Uvbię examples. I have myself not found cause to mark a third level. A non-low level (only a little higher than low) is heard at the end of utterances, but that may be due to the phenomenon of final low raising which is observable in most Edoid languages of the Delta.

4.8.9. Morphology

Nouns in Uvbię are pluralized by prefix vowel change. Verbal nouns are formed from verb stems by the affixing of a discontinuous U... mU morpheme (obviously cognate with the U...(A)m of Degemę).

4.8.10. Other sources

Omamor (1973). This author's account of the language is the best available, though with somewhat patchy grammar and

4.9. Edo

4.9.1. Syllable structure

Edo has syllables of the structure CV or V. Only vowels occur at V; there are no syllabic consonants in Edo.

Vowel sequences are common and each member of the sequence represents a syllable nucleus. Thus:

ga	(CV)	'worship'
kí	(CV)	'inspect'
è-to	(V-CV)	'hair'
raa	(CV-V)	'steal'
ð-rùaɛ	(V-CV-V-V)	'in-law'

4.9.2. Consonant inventory

m	[n]						
p	b	t	d	k	g	kp	gb
r	r						
f	v	s	z	x	y	h	
l	l						
w	l	y	w				

4.9.3. Notes

Every approximant has a nasal or nasalized allophone when it occurs before a nasal vowel. Thus:

/lɔ/ → [nɔ̄]	'ask'
/lɛ/ → [nɛ̄]	'know'
/wɔ/ → [wɔ̄]	'drink'
/wɔ/ → [wɔ̄]	'have'
/yã/ → [yã̄]	'tear apart'

For most people of the younger generation, /l/ is now a central approximant with a lateral off-glide. For such speakers, this item is realized as [z̄ɛ̄].

/wɔ/ → [wɔ̄]	'drink'
/wɔ/ → [wɔ̄]	'have'
/yã/ → [yã̄]	'tear apart'

Stops are partially nasally exploded when they occur before nasalized vowels.

4.9.4. Consonant contrasts

Some interesting contrasts are exemplified in Elugbe (1973):

164-166). Perhaps the most intriguing is contrast involving the lateral and the r- sounds;

- /ʃo/ 'blaspheme, say forbidden things'
/ro/ 'praise'
/lo/ 'give out pus (of boil, etc.)'
/lɔ/ 'use'

For a long time, Edo orthography had problems coping with the contrasts involved here because the letter 'r' was being used to write both /r/ and /l/. An interesting solution was found at a seminar in Lagos in 1974 when it was decided to write /r/ as 'rr' and /l/ as 'r'!

4.9.5 Vowel inventory

There are seven oral vowels in Edo: /i, e, ε, a, ɔ, o, u/ and five nasal ones: /ĩ, ɛ, ã, ɔ̄, ū/.

4.9.6. Notes

In vowel sequences in which a close vowel is followed by a non-close vowel or one from which it differs in respect of lip rounding, the close vowel becomes non-syllabic:

- /ògiè/ [ðgjè] 'chief'
/ífùé/ [ífwé] 'wing'

4.9.7. Vowel harmony

Vowels co-occur freely in Edo. However, Elugbe (1973:168) has mentioned that if a noun has an ɔ-prefix, it is also likely to have ε, a, or ɔ in the stem. Elugbe also points out that there are only two exceptions to this rule in his data.

4.9.8. Tone

Amayo (1976) traces the history of the analysis of Edo tone and credits Elugbe (1971, 1973) and Welmers (1973) with the first correct analysis of Edo as 'two tones plus downstep'. Amayo then reveals the interesting fact that 'downstep' applies not only to high tones but also to low tones. Thus there is a difference between:

/íyó # ' # òkpè/ → [íyó:kpè] 'palm wine tapper's money'
/íyó # ' # ókpè/ → [íyókpè] 'money for a flute'.
The point is that the influence of a low tone on a high (or low!) tone remains even after the low tone is deleted, giving us downstepped highs and downstepped lows.

Edo is thus one of the very few Edoid languages whose tone system is basically understood.

4.9.9. Morphology

Although it is relatively easy to show that an Edo noun is made up of a stem and a prefix, there are few nouns in which pluralization by prefix alternation takes place. Elugbe (1973:168) gives a list of the nouns which fall into this group. A look at Elugbe's list reveals that all the nouns concerned are 'human/relationship' nouns: child, child of, enemy, male/man, person, relative, and woman.

4.9.10. Other sources

Melzian (1937;1942); Wescott (1962); Dunn (1968); Elugbe (1971; 1973); Mid-West Ministry of Education, Benin City (1974); Amayo (1976).

4.10. Aoma

4.10.1. Syllable structure

CV and V are the only possible types of syllable in Aoma.

4.10.2. Consonant inventory

m	[n]						
p	b	t	d	k	g	kp	gb
				r			
f	v	s	z	x	y		
				l			
				z	y	h	w

4.10.3. Notes

Approximants have nasal or nasalized allophones before nasal vowels.

4.10.4. Consonant contrasts

The contrast between /l/ and /x/ on the one hand and between /x/ and /r/ on the other is worth noting (cf. the Edo case).

4.10.5. Vowel inventory

Seven oral vowels and five nasal vowels occur in Aoma:

/i, e, ε, a, ɔ, o, u/ and /i̥, ɛ̥, ḁ̃, ḁ̃, ũ̥/.

4.10.6. Notes

Close vowels have approximant allophones when they occur before non-close vowels.

4.10.7. Vowel harmony

There is no evidence of vowel harmony in Aoma.

4.10.8. Tone

Only two levels, high and low, are distinctive. As I have for only lexical items in this language, I cannot say more than this.

4.10.9. Morphology

Nouns are not pluralized by changing prefixes. Some verbs start with vowels. Such cases (for example: /e/ 'eat'), are derived from historical CV stems whose consonant has been lost in Aoma.

4.10.10. Other sources

Elugbe (1973).

4.11. Auchi

4.11.1. Syllable structure

Only vowels are syllabic in Auchi and a syllable is of the structure CV or V.

/bε/ is CV 'harvest (fruit)'

/ð-kɔ/ is V-CV 'vehicle'

Vowel sequences occur in stems and are interpreted as syllable sequences:

/è-fèè/, V-CV-V 'falsehood'

/ù-yàè/, V-CV-V 'tail'

/í-fùà/, V-CV-V 'wing'

4.11.2. Consonant inventory

m	n
mh	

p	b	t	d	k	g	kp	gb
ts	dz	kh	gh	kph	gbh		
			r				
f	v	s					
ɸ	χ	ʃ	l	ç	y	w	

4.11.3. Notes

The h-series represent a lenis series on which a lot has been written. All dialects of Yekhee have a lenis/non-lenis distinction. (See Laver 1967, 1969; Elugbe 1973, 1974, 1980a; Elimelech 1976.)

The only lateral in the Yekhee dialects is a tapped one, regarded as lenis.

The alveolar affricates optionally become palato-alveolar before /i/. The sequences /tsiV/ and /dʒiV/ become [tʃV] and [dʒV] respectively:

/tsi/ [tsi] or [tʃi] 'to snuff, smoke'

/ðdzí/ [ðdzí] or [ðdʒí] 'crab'

/atsie/ [atʃe]

/ilidzía/ [ilidʒá]

This observation holds for /s/ and /n/, which may give [ʃ] and [n] in the same environment.

4.11.4. Consonant contrasts

The contrast between lenis and non-lenis consonants is of general interest. Of particular interest is the contrast between lenis labial-velars and non-lenis ones. The contrast between labials and labial-velars (lenis and non-lenis) is exemplified in the following:

p: b: kp: gb: kph: m: mh: f: v: w: ɸ: χ: l: ç: y: w:	'spread/mix mud with the hands or feet'
/papa/	'spread/mix mud with the hands or feet'
/ba/	'plait'
/kpa/	'vomit'
/gba/	'tie'
/kpha/	'raise high'

/égbha/	'a type of itching seed (= 'devil bean')'
/ma/	'mould'
/mha/	'we, us'
/fa/	'cut (rope, thread, etc.)'
/va/	'butcher'
/va/	'you (pl.)'
/wa/	'be lost'

The following items bring the velars into the picture:

/kaka/	'be dry'
/ga/	'worship'
/khayə/	'abuse, insult'
/ghaghə/	'repair, mend'

4.11.5. Vowel inventory

There are seven oral vowels; there are no nasal vowels.

/i, e, ε, a, ɔ, o, u/.

4.11.6. Notes

In vowel sequences, the close vowels /i/ and /u/ are realized as their glide counterparts when they occur before other vowels.

All vowels are nasalized after nasals. Elugbe (1973) has the minimal contrasts:

/di/	'tie'	/ni/	'recover (from illness)'
/de/	'fall'	/ne/	'guess'
/dε/	'buy'	/nε/	'defecate'
/da/	'drink (alcohol)'	/na/	'run'
/də/	'wrestle'	/nə/	'ask'
/do/	'weave'	/no/	'use'
/du/	'carry'	/nu/	'rub'

4.11.7. Vowel harmony

Only faint traces of an earlier vowel harmony system exist in Auchi and these are not in the verbal system but in the noun system.

4.11.8. Tone

Two levels are significant - high and low. In my 1973 work, I say that there is no downdrift or downstep in Auchi. Elimelech

(1976) worked on the Ekpheli dialect of Yekhee and says there is downdrift and downstep there. I had a brief contact with that dialect recently and it would appear that Elimelech's observations on Ekpheli are correct. However, I listen almost daily to speakers of the central Auchi dialect (see chapter 1) and detect no downdrift there. There is no reason why different dialects of Yekhee should exhibit identical low-level phonetic characteristics.

4.11.9. Morphology

Pluralization in Auchi is by prefix vowel alternation. This is generally phonologically determined except in the case of a few parts of the body with plural in a.

4.11.10. Other sources

Different people have worked on different dialects of Yekhee: Strub (1915-16) on Wepa Wanq, a rather more distant dialect which he called 'Kukuruku'; Laver (1967, 1969) on the Avbiele dialect, Elugbe (1973) on Auchi and Avbianwu; and Elimelech (1976), the most detailed work on any dialect so far, on Ekpheli.

4.12. Avbianwu

4.12.1. Syllable structure

As for Auchi: CV, V.

4.12.2. Consonant inventory

m	n
mh	
p	b
t	d
k	g
kp	gb
ts	dz
kh	gh
kph	gbh
r	
f	v
s	
l	y
w	

4.12.3. Notes

Conventions are as for Auchi, these two being very close dialects. However, /p/ is more widely used here (see chapters 1 and 5).

4.12.4. Consonant contrasts

The observations for Auchi are largely true here although I do not have the data to exemplify contrasts in the same way as I did for Auchi.

4.12.5. Vowel inventory

/i, e, ε, a, ɔ, o, u/. There are no nasal vowels.

4.12.6. Notes

As for Auchi (section 4.11.6).

4.12.7. Vowel harmony

There is no vowel harmony in Avbianwu.

4.12.8. Tone

From the lexical items at my disposal only two levels are found to be distinctive: high and low. There is apparently also neither downstep nor downdrift here.

4.12.9. Morphology

Pluralization in Avbianwu is as in Auchi.

4.12.10. Other sources

See under Auchi. The only sources I am aware of are Elugbe (1973), a very brief sketch, and Elimelech (1976), a word list.

4.13. Unemē (Eturu)

4.13.1. Syllable structure

Syllables are CV or V.

4.13.2. Consonant inventory

m	n
mh	nh
p b t d k g kp gb	
	kh gh kph ghb
f v v̄ s z z̄ h h̄	
v	l
	y
	w

4.13.3. Notes

As with Yekhee, Unemē is rich in consonants. Breathy-voicing is identified as a distinctive feature here (as in most of NWE, see 4.16 and 4.17). Otherwise, the contrasts are almost exactly as for Auchi and Avbianwu.

The alveolar nasal /n/ and the fricatives /s, z, z̄/ have palatal and palato-alveolar allophones respectively before /i/.

4.13.4. Consonant contrasts

The contrasts f: v: v̄ and s: z: z̄ are of interest in addition to the widespread lenis: non-lenis contrasts. The lenis feature is apparently realized as a breathy phonation feature in the fricatives, so that lenisness and breathy-voicing are in complementary distribution in the Unemē consonant system. The speakers of the language reflected this in their practice of writing both with an h after the relevant consonant.

/isə/	'faeces'	orth.: iso
/ézə/	'ear'	esho
/zəlo/	'abuse'	zolo
/fə/	'be wet'	fo
/vəli/	'pay (debt)'	fhali
/èvá/	'two'	eva

4.13.5. Vowel inventory

Seven vowels occur: /i, e, ε, a, ɔ, o, u/. There are no nasal vowels.

4.13.6. Notes

Vowels are nasalized after nasals, including after /h/, a nasalized glottal fricative.

Close vowels become non-syllabic in CiV or CuV sequences.

4.13.7. Vowel harmony

Unemē does not operate a harmony system.

4.13.8. Tone

In the limited data available, two levels are found to be distinctive: high and low. A third level that sounds like a mid or downstep level is also identified. This third level does not occur frequently and may well be evidence of a 'limited downstep'.

4.13.9. Morphology

Plural forms of nouns have different vowel prefixes from singular forms. The rule relating singular to plural is basically phonologically determined, although a few items (mostly parts of the body) retain plural forms in *a-*.

4.13.10. Other sources

An alphabet is suggested for Unémè in the report of the Mid-West Language Committee (Ministry of Education, Benin City, 1975). A southern dialect (not clearly identified) is included in the word lists in the Appendix attached to Elimelech (1976).

4.14. Ghotuo

4.14.1. Syllable structure

Syllables are of the type CV and V. Only vowels occur at V.

4.14.2. Consonant inventory

m	n						
mh	nh						
p	b	t	d	k	g	kp	gb
r							
f	v	s	z	x	y	h	ħ
u						w	
lh						yh	

4.14.3. Notes

The h-series represent lenis varieties.

/h/ and /ħ/ are glottal fricatives, the second one being nasalized.

Before back rounded vowels, /u/ usually has a weak labial-velar approximant allophone - [wh].

The sequences /kiV/ and /giV/ frequently give [cV] and [fV] respectively (mid tone is unmarked):

/okìà/ → [òcà] 'journey; welcome!'

/gíà/ → [jâ] 'laugh'

As with /k/ and /g/, /siV/ and /ziV/ often yield [ʃV] and [ʒV] respectively:

/si/ 'pull, draw' plus /àmè/ 'water'

/si àmè/ 'draw water' → [ʃàmè]

/zíè/ → [ʒ̩] 'open a lock'

/nh/ and /lh/ are alveolar taps [ṇ] and [l̩] respectively.

4.14.4. Consonant contrasts

Elugbe (1978b) and Elugbe and Homber (1975) focus attention on lenis/non-lenis distinctions in Ghotuo. Some interesting examples of contrasts are given below:

mh : m /mhe/ 'see' /mhò/ 'mother'

/mè/ 'peel off' /mò/ 'like this'

lh : l /ilhá/ '(animal) fat' /lhò/ 'yaws'

/èla/ 'cow' /lò/ 'liver'

/uyhà/ 'family' /yhà/ 'tail'

/ùyà/ 'palm fruit waste' /yà/ 'after oil is extracted'

4.14.5. Vowel inventory

There are no nasal vowels in Ghotuo: the oral vowels are seven: /i, e, ε, a, ɔ, o, u/.

4.14.6. Notes

All vowels are nasalized after nasals and after /h̩/.

The close vowels /i/ and /u/ become non-syllabic when they are preceded by a consonant and followed by another vowel:

/fiáà/ → [fyâ] 'look for'

/lúé/ → [lw̩] 'press into pulp'

/gúɔ/	[gwɔ̄]	'vibrate'
-------	--------	-----------

4.14.7. Vowel harmony

There is no vowel harmony in Ghotuo. A faint suggestion of it may be in the fact that, in the process of pluralization, u-, o- and a- singular prefixes become i- and e-, while ɔ- singular prefixes become e-.

4.14.8. Tone

There is no doubt that Ghotuo operates a three-level tone system and that the third level should be interpreted as 'mid'. There are no restrictions on the mid level in Ghotuo. Elugbe (1973) makes a convincing case for this view of Ghotuo tone.

4.14.9. Morphology

Pluralization is by prefix vowel alternation. Among the languages included in this study, Ghotuo is the only NCE language that makes extensive use of a CV- prefix, VV-:

yo-bɔ̄	'hand'	a-bɔ̄ (pl.)
ya-wà	'dog'	io-wà (pl.)

Pluralization, except in the case of a- and io- plural prefixes, is by phonological rule.

The loss of PE *dh in Ghotuo has created verb stems without an initial consonant. Thus: /e/ 'eat', though the older generation still say 'eat' with a tapped lateral: [l̪ɛ].

4.14.10. Other sources

Elugbe (1972a, 1973, 1978b); Elugbe and Hombert (1975).

4.15. Oloma

4.15.1. Syllable structure

CV, V

Oloma syllables begin with a consonant and end with a vowel. There are no medial consonants. The final consonant is often preceded by a vowel.

Front High Central Low
High Near-High Near-Low Low
Near-High Near-Low Low

4.15.2. Consonant inventory (Systematic phonetics)

m	n	ŋ	ɳw
mh	nh		
p	b	d	c
	td	dh	z
f	v	s	z
		ʃ	ʒ
		t	ʈ
		r	ɳ
		y	w

4.15.3. Notes

My data on Oloma are geared towards an analysis of the noun class system of the language (cf. Elugbe and Schubert 1976).

The h-series should be of interest here, in particular the contrast between the lenis alveolars th and dh and the non-lenis t and d. It should be noted that th and dh are a little auditorily longer in duration than the alveolar tap [ɾ].

The lateral /l/ is a lenis one and, in spite of occurring in the name of the language, is very sparsely distributed in the language.

The inventory is a systematic phonetic one and it may well be that some of the palatals are allophones of alveolar consonants.

4.15.4. Consonant contrasts

Although I do not have much data on this language, I am sure that all the lenis/non-lenis distinctions I have indicated in the inventory will be found to be phonological.

4.15.5. Vowel inventory

There are seven oral vowels in Oloma: /i, e, ɛ, a, ɔ, o, u/. There are no nasal vowels.

4.15.6. Notes

All vowels are nasalized after nasals. A glide formation rule exists, as in other Edoid languages.

4.15.7. Vowel harmony

It would appear that Oloma only recently changed from a nine-

vowel to a seven-vowel system. (We note, for example, that the closely-related Emhalhe, see section 4.16, operates a nine-vowel system.) The effect of this is, of course, to disrupt the vowel harmony system. Thus we now have nouns in which ε, a, o are prefixed to stems with i, e, o, u.

It so happens, however, that the prefix system has retained its own harmony so that where a singular prefix has a lower set vowel, for example, its plural counterpart must be from that set.

Elugbe and Schubert (1976) have mentioned and exemplified this phenomenon; I give a token demonstration below:

Singular	Plural		alternation
i-sò	i-sò	'faeces'	i - i
é-nè	í-nè	'snake'	e - i
ó-kò	í-kò	'fowl'	o - i
ù-tùmhù	í-tùmhù	'tail'	u - i
é-nhàmhì	é-nhàmhì	'meat'	ε - ε
á-tù	é-tù	'antelope'	a - ε
á-fì	é-fì	'rat'	o - ε

The point here is that the plural prefix vowels are i and ε and the choice of i or ε is determined by agreement with the set to which the singular vowel prefix belongs. For the purposes of this prefix-internal harmony, therefore, the two sets are:

<u>1</u>	and	<u>2</u>
i	u	ε
e	o	a

Outside of this, vowels co-occur indiscriminately between prefix and stem.

4.15.8. Tone

Two tones have been identified: high and low. From preliminary observation, it would appear that the Oloma tone system is very similar to that of Auchi (section 4.11).

4.15.9. Morphology

The most elaborate noun class system in Edoid is to be found in Oloma and it is presented in Elugbe and Schubert (1976). The

interesting features of this system include the fact that ghV- and rV- prefixes occur and are matched with ghV- and rV- concord prefixes. Above all, gender is defined here both on the basis of noun prefix pairing as well as on that of concord.

4.15.9. Other sources

Koelle (1854) first published data on Oloma and got Westermann (1926) interested in its CV- prefixes. See also Elugbe and Schubert (1976).

4.16. Emhalhe (Somorika)

4.16.1. Syllable structure

According to Oyale (1979), Emhalhe syllables are of the structure CV or V.

4.16.2. Consonant inventory (systematic phonetic)

m	n	ŋ	ŋw
mh	nh		
p	b	d	c
ph	bh	dh	g
r			k
f	v	θ	s
z	z	ʃ	ʒ
h		h	h
l		y	w
lh			wh

4.16.3 Notes

The consonant system of Emhalhe is very rich in distinctions. The most obvious, apart from the traditional categories of place and manner, is the presence of the h- series, representing lenis consonants and matched in the fricatives by a breathy-voiced series.

/lh/ is a tapped alveolar lateral [l].

/r/ is an alveolar tap with a faint lateral off-glide.

The trilled /r/ occurs in a very limited number of items.

Adetuyi (1979) and Oyale (1979) both claim no contrast between /th/ and /θ/. In my data, there is a distinction between these

two. /θ/ is a voiceless dental central fricative while /th/ sounds like a voiceless lenis alveolar plosive.

4.16.4. Consonant contrasts

Although some useful work already exists on Emhalhe, it is still not clear whether all the contrasts indicated in my inventory will survive a thorough analysis of the Emhalhe consonant system.

4.16.5. Vowel inventory

There are no nasal vowels in Emhalhe. There are, phonetically, nine oral vowels: [i, ɪ, e, ε, a, ɔ, ə, ʊ, u]. Phonologically, however, Emhalhe is an eight-vowel system: /i, e, ε, a, ɔ, ə, ʊ, u/.

4.16.6. Notes

/i/ is realized as [ɪ] when it occurs with vowels which are non-expanded - i.e. /ε, a, ɔ, ə/ (see below).

All vowels are nasalized after nasal consonants.

4.16.7. Vowel harmony

Emhalhe makes extensive use of vowel harmony both in its nominal and verbal systems. The vowels fall into two groups within the harmony system - an expanded set: /i, e, ə, ʊ, u/ and a non-expanded set /ε, a, ɔ, ə/.

In a few stems, /i/ occurs with vowels from the non-expanded set. It is then realized as [ɪ]. However, there are exceptional cases in which /i/ occurs as a prefix to an /a/-stem and yet is realized as [i]. In such cases, we are probably dealing with a stem which, historically, had [ə].

Laniran (1981) devotes considerable attention to vowel harmony and records some useful data.

4.16.8. Tone

I do not know of any other Edoid language with greater complexity of tone (at least on the surface) than is found in Emhalhe. It would appear that three levels are distinctive and the mid level is not to be interpreted as a downstep.

Laniran (1981) also tackles the problem of Emhalhe tone, and confirms some observations of mine; in nouns as lexical items, initial lows become high-falling while final non-lows are realized with a fall. The result is that:

LL	→	[\ -]
LH	→	[- \]
HL	→	[^ -]
HM	→	[^ \]

I have also observed (though this is still to be properly checked out) that there seems to be neutralization of contrast between high and mid immediately following a low tone.

4.16.9. Morphology

Adetuyi (1979), Laniran (1979), and Oyale (1979) all have a lot to say about the noun class system of Emhalhe. It is another Southern North-Western Edoid (SNWE) language in which CV- concord prefixes occur alongside CV- noun prefixes.

4.16.10. Other sources

Emhalhe was the subject of investigation by a group of students of the Department of Linguistics and Nigerian Languages at Ibadan and the outcome of their study is in Adetuyi (1979), Laniran (1979), and Oyale (1979). Laniran returned later to do another year of linguistics, producing her 1981 work on Emhalhe vowel harmony and tone.

4.17. Ibilô

4.17.1. Syllable structure

CV and V (Elugbe 1973).

4.17.2. Consonant inventory

m	n	ŋ	ɳw
mh	nh		
mm	nn		
p	b	d	k
bh	th	dh	gh
t	ts	dz	kp
			gb
			kph
			gbh
		r	

f	v	s	z	ʃ	ʒ	h	h̄
l	y	w	ø	w̄	ø̄	h̄	h̄̄
lh	ɥ	w̄̄	ø̄̄	w̄̄̄	ø̄̄̄	h̄̄̄	h̄̄̄̄
l̄	ɥ̄	w̄̄̄	ø̄̄̄̄	w̄̄̄̄̄	ø̄̄̄̄̄	h̄̄̄̄̄	h̄̄̄̄̄̄

4.17.3. Notes

Ibilo operates the richest consonant system of all the Edoid languages. There are no less than forty phonological consonants within it and, at a systematic phonetic level, the figure rises.

Ibilo is also the only language to contrast breathy-voicing with lenisness within the same manner of articulation, giving us the contrasts m: mh: m̄:; n: nh: n̄; and l: lh: l̄.

/r/ is freely realized either as [r] or as [ɹ].

/dz/ is realized [dz] and [z] in free variation.

[c] and [ɟ] occur as allophones of /k/ and /g/ respectively before /i/ (Elugbe 1973). [n̄] and [ŋw̄] are also analysed as allophones of /n/ in the same work.

4.17.4. Consonant contrasts

Akinlabi (1979) has an impressive investigation of Ibilo consonants. Apart from confirming the lenisness and breathy-voicing contrasts in Elugbe (1973), Akinlabi unearthed many more and the inventory given above has gained a lot from his investigation.

However, many of the contrasts implied here are dying out. For example, I noted that although there is contrast between /th/ and /t/ and between /dh/ and /d/, the lenis alveolars occur only in stems with two consonants - i.e. in CVCV stems. The lenis consonants are also more common in -C₂- stem position than in C₁- position. In fact, I notice that one of the two examples cited by Akinlabi in support of the occurrence of /dh/ is dhən̄o 'look for'. I happen to know that the verb 'look for' does not start with a lenis plosive but with a non-lenis one. It is not surprising therefore that Akinlabi's figure 6 to which we are referred for evidence contains oscillograph tracings of ùgbhàdho 'maize' and

nothing of the verb 'look for'.

4.17.5. Vowel inventory

Elugbe (1973) has an interesting minimal set to exemplify the contrasts within the eight-vowel system of Ibilo. The vowels are /i, e, ε, a, ɔ, o, ə, u/ and the examples given are:

/dzi/	'come'	/dzo/	'throw'
/dze/	'fall'	/dzo/	'weave'
/dze/	'germinate'	/dzo/	'buy, sell'
/dza/	'take'	/dzu/	'tie'

4.17.6. Notes

Vowel nasalization is automatic and occurs immediately following a nasal consonant.

As in Emhalhe (section 4.16.6) [ɪ] occurs as an allophone of /i/ when the latter occurs with the non-expanded vowels /ε, a, ɔ, ə/.

4.17.7. Vowel harmony

There is vowel harmony in both the nominal and the verbal systems of Ibilo. The vowels fall into two harmony sets of four each: the expanded /i, e, ɔ, u/ and the non-expanded /ε, a, ɔ, ə/.

4.17.8. Tone

Ibilo exhibits a 'two tone plus downstep' system. There is no evidence of synchronic downdrifting in my data, although Akinlabi (1979) rather routinely claimed downdrift exists in Ibilo. One notices that Akinlabi presents no instrumental evidence of downdrift even though he presents such evidence to show that high, low, etc., tones occur.

The downstep in Ibilo is limited in occurrence and is unlikely to be successfully analysed as a 'mid' tone.

4.17.9. Morphology

Ibilo has a noun class system that compares very well with those already mentioned for Oloma and Emhalhe. There are CV-prefixes and there are CV-concord prefixes. Class pairing

(gender) is largely semantically determined. Obiomah (1979) undertook a modest study of the Ibilo noun class system - with some interesting revelations.

4.17.10 Other sources

Elugbe (1973); Akinlabi (1979); and Obiomah (1979).

4.18. Uhami

4.18.1. Syllable structure

CV or V.

4.18.2. Consonant inventory

m	n	ñ	t	d	k	g	kp	gb
p	b	t	d	k	g	kp	gb	
r							r	
f	v	s	z	h				
l	y		w					

4.18.3. Notes

/k/ and /g/ have palatal allophones [ç] and [ʃ] respectively before /i/.

/n/ has a palatal allophone, [ɲ], before /i/.

/s/ has a palato-alveolar allophone, [ʃ], before /i/.

4.18.4. Consonant contrasts

Uhami has one of the simplest consonant systems of any Edoid language. (For the geographic location of Uhami and its relationship with Oloma, Emhalhe, Ibilo, and other Southern North-Western Edoid languages, see chapter 1).

4.18.5. Vowel inventory

/i, e, ε, a, ɔ, o, u/

4.18.6. Notes

All vowels are nasalized after nasal consonants.

4.18.7. Vowel harmony

There is no trace of vowel harmony in Uhami.

4.18.8. Tone

Within the scope of the limited data at my disposal, high and low tones were found to be distinctive. A third mid level was also identified but it will probably be analysed as a downstep. Elugbe (1973) gives an example that suggests there may be down-drift in Uhami but makes the point that his informants were inconsistent with tone.

4.18.9. Morphology

Uhami and the other languages of the Osse cluster have the simplest morphology in Edoid, a fact that may not be unconnected with their being totally surrounded by Akokoid/Yoruboid languages. There is no pluralization of the kind noted elsewhere in Edoid and stems are mostly monosyllabic.

4.18.10. Other sources

Elugbe (1973).

4.19. Ehueun

4.19.1. Syllable structure

As with other NWE languages, CV and V syllable types are attested in Ehueun.

4.19.2. Consonant inventory

b	t	d	k	g	kp	gb
r	r					
ɸ	θ	f	v	s	z	h
l					y	w

4.19.3. Notes

/k/ and /g/ have palatal allophones before /i/.

/s/ also has a palato-alveolar allophone before /i/. According to Elugbe (1973) /θ/ is a nasal [m] before nasal vowels.

/l/ also has a nasal allophone, [n], before nasal vowels.

/y/ and /w/ also have nasalized allophones before nasal vowels.

/h/ has a velar allophone, [χ], before close vowels /i/ and /u/.

4.19.4. Consonant contrasts

Ehueun, like Uhami (section 4.18) and Ukue (4.20), has a consonant system with contrasts much reduced beyond the level found in other non-Osse Edoid languages.

4.19.5. Vowel inventory

There are seven oral vowels and five nasal ones. The oral vowels are /i, e, ε, a, ɔ, o, u/ and the nasal ones are /ĩ, ë, ã, ɔ̄, ũ/.

4.19.6. Notes

As usual, /e/ and /o/ have no nasal counterparts. /i/, /ɛ/, /u/, and /ũ/ have approximant counterparts as mentioned for other Edoid languages.

4.19.7. Vowel harmony

There is no evidence of vowel harmony in my Ehueun data.

4.19.8. Tone

Elugbe (1973) makes the point that the Ehueun system is probably in a fluid transitory stage. Arguing that the system lends itself to a three-level (high, mid, low) analysis as well as to a 'two tone plus downstep' one, Elugbe nonetheless opts for a three-level analysis.

4.19.9. Morphology

See section 4.18.9.

4.19.10. Other sources

Elugbe (1973).

4.20. Ukue

4.20.1. Syllable structure

CV, V. Some examples of CVC, CVCV, and CVVC are given.

4.20.2. Consonant inventory

b	t	d	t̪	d̪	k	g	kp	gb
β	f	v	r̪	r̪	h			

l y w

4.20.3. Notes

Ukue has no /s/ or /z/; instead of /s/ we find /r̪/ which is in fact a post-alveolar fricative [ʂ]. /r̪/ is a voiced alveolar trill.

The velar plosives, /k/, /g/, have palatal allophones before /i/.

/r̪/ is realized as [ʃ] before /i/.

[m] occurs as an allophone of /β/ while [n] is an allophone of /l/ - both before nasal vowels.

4.20.4. Consonant contrasts

See section 4.19.4.

4.20.5. Vowel inventory

Oral vowels are: /i, e, ε, a, ɔ, o, u/.

Nasal vowels are five in number: /ĩ, ë, ã, ɔ̄, ũ/.

4.20.6. Notes

Ukue and Ehueun differ from Uhami in having significant vowel nasalization. /e/ and /o/ have no nasal counterparts.

4.20.7. Vowel harmony

There is no evidence of vowel harmony in my Ukue data.

4.20.8. Tone

Two significant levels are attested in my data: high and low. In items borrowed from Yoruba, mid tone occurs.

4.20.9. Morphology

See section 4.18.9.

4.20.10. Other sources

Elugbe (1973).

PART THREE
CHAPTER 5
PROTO-EDOID PHONOLOGY

5.0. Introduction

In this chapter I present the essence of this whole exercise which was designed to culminate in the reconstruction of Proto-Edoid phonology. There is one major area of investigation that is sadly lacking in my effort: tonal reconstruction. In extenuation of that omission (which I say is deliberate) I offer the explanation that one would require a separate project, devoted solely to the investigation of PE tone. I investigated many languages with different kinds of tone system: three plain level tones; two level tones plus downstep (but not downdrift); two level tones plus final low raising; classical two level tones plus downdrift; etc. Somewhere within all this - in combination or with modification - lies the system operated in PE.

As is well known, the data that will give us a useful insight into the segmental aspects of the phonology of a given tone language may not suffice to give us the same insight into its tonal aspects. This fact is already evident from the sketchy and uncertain nature of the statements that I have made about tone in most of the languages whose sound systems I presented in chapter 4.

In the following pages, therefore, we shall not speculate on the nature of the tone system of PE. It seems clear, however, that PE may not have classified its verbs tonally, though its nouns did fall into different tone groups. This follows from our observation that this state of affairs exists in the modern Edoid languages.

Two notational conventions arising from the foregoing are that tone will not be marked in reconstructed PE items and that my earlier practice of not marking tone on verb stems cited from any Edoid language will continue.

The rest of this chapter is devoted to non-tonal aspects of PE phonology and morphology.

5.1. The consonant system of PE

5.1.1. The inventory

In Table 3, I present a systematic phonetic inventory of the consonants reconstructed for PE:

TABLE 3: PROTO-EDOID CONSONANTS

STOP		<i>b</i>		<i>d</i>							
Implosive											
lenis	ph	bh	th	dh	ch	?	kh	gh	kph	gbh	
Plosive											
non-lenis	p	b	t	d	c	g	k	g	kp	gb	
NASAL											
lenis		mh					nh				N
non-lenis		m					n				
FRICATIVE		f	v								
APPROXIMANT					l			v		G	w

Table 3 highlights a number of issues which require further discussion: the occurrence of implosives; the extensive reconstruction of lenis/non-lenis sets; the reconstruction of labial-velars instead of labialized velars; etc.

5.1.2. The implosives

Two implosives - i.e. stop consonants with glottalic suction - have been reconstructed for PE. They are **b* and **d*, the voiced bilabial and the voiced alveolar implosives respectively. Although synchronic evidence of suction is to be found only in DE (we ignore the occurrence of [p^c], an unvoiced velarized bilabial implosive, in Isoko (SWE) for the time being), the evidence for its reconstruction in PE is straightforward.

As can be seen from Tables 4 and 5, there are two sources for the implosives in Delta Edoid: original PE implosives **b* and **d* and PE voiced lenis bilabial and alveolar plosives. In other words, Delta Edoid introduced a rule which shifted voiced lenis bilabial and alveolar plosives to their implosive counterparts.

Table 4

Correspondences for PE labials

Proto-Edoid	f	ph	p	v	b	bh	b	mh	m	
DE	f	f	f	v	b	b	b	m	m	
	f	f	f	v	b	b	b	m	m	
	f	f	f	v	b	b	b	m	m	
	f	f	p	v	b	b	b	m	m	
SWE	Erùwa	f	v	f	v	b	v̪	b	v̪	m
	Isoko	f/h	v̪	f	v	b	v̪	b	m	m
	Okpè	f	ɸ	f	v	b	v̪	b	m	m
	Urhobo	f	ɸ	ɸ	v	b	v̪	b	m	m
	Uvbie	f	?	?	v	b	v̪	b	m	m
NCE	Edo	h	h	f	v	b	w/v̪	b	v̪	m
	Aoma	h	h	f	v	b	ɸ	b	m	m
	Auchi	f	f	f	v	b	v̪	b	mh	m
	Avbianwu	f	f	p	v	b	v̪	b	mh	m
	Unemē	f	f/h	f	v	b	v̪	b	mh	m
	Ghotuo	f	f	f	v	b	v̪	b	mh	m
	Olòma	f	f	f	v	b	?	b	m	m
NWE	Emhalhe	f	?	f	v	b	b	b	mh	m
	Ibilo	f	?	f	v	b	bh	b	mh	m
	Uhāmi	f	f	f	v	b	v	v	m	m
	Ehuèun	f	f	f/ɸ	v	b	b	ɸ	m	m
	Ukue	f	f	f	v	b	b	b	m	m

Table 5

Correspondences for PE alveolars and palatals

Proto-Edoid	th	t	d	dh	d	l	nh	n	ch	c	č	y	
DE	t	t	d	d	d	?	n	n	s	s	z	y	
	t	t	d	d	d	l	n	n	s	s	z/y	y	
	t	t	d	d	d	l	n	n	s	s	z/y	y	
	t	t	d	d	d	l	n	n	s	s	z	y	
SWE	Erùwa	r/t	t	d	ɹ	s	l	ɿ	n	y	s	?	?
	Isoko	r/t	t	d	ɸ	t	l	ɸ	n	z	s	dʒ	?
	Okpè	r	t	d	ɸ	s	l	ɸ	n	ɾ	s	ʃ	?
	Urhobo	r	t	d	!	c	?	ɳ	n	ɾ	s	ʒ	?
	Uvbie	r/t	t	d	ɸ	c	?	ɳ	n	s	s	ʒ	?
NCE	Edo	r	t	d	l̩	d	l	ɿ	n	h	s	z	y
	Aoma	r	t	d	∅	d	l	∅	n	h	s	z	∅
	Auchi	r	t	d	!	d	n	!	n	s	ts	dz	y
	Avbianwu	r	t	d	!	d	n	!	n	s	ts	dz	y
	Unemē	ɟ	t	d	!	d	n	ɳ	n	sh	s	z	y
	Ghotuo	r/t	t	d	∅/l	d	l	ɳ	n	h/ʒ	s	z	y
NWE	Olòma	h	h	d	l̩	z	?	ɳ	n	z	s	?	?
	Emhalhe	h	h	d	r	z	?	ɳ	n	ʐ	s	č	?
	Ibilo	h	h	d	r	dz	?	ɳ	n	ʐ	s	ʃ	?
	Uhāmi	s	h	d	r	z	r	ɳ	n	s	ʃ	h	?
	Ehuèun	ɟ	s	d	r	z	?	ɳ	n	ɟ	s	č	?
	Ukue	ɟ	t	d	d	g	?	ɳ	n	ɟ	y	h	?

Thus:

- (1) *bh > b (cf. 'dog', 'oil')
 *dh > d (cf. 'eye', 'swallow', 'eat')

Although the shifts in (1) involved only the changing of a lenis feature to a suction one (which is natural enough when we recall that implosives are generally considered weak) it should be noted that the rule was restricted to 'voiced bilabial' and 'voiced alveolar'. There is no example of a voiceless lenis consonant of PE becoming implosive in to-day's languages.

Outside DE, a suction consonant, p^c, occurs only in the SWE language, Isoko. However, this sound is derived from both PE lenis and non-lenis labial-velars.

The loss of suction outside DE was achieved by the simple expedient of changing suction consonants, *b, *d to non-suction b and d. (See Tables 4 and 5; see also 'be many', 'buy', etc.).

5.1.3. Labial-velar stops

Four labial-velar stops must be reconstructed for PE: kph and kp (voiceless) and gbh and gb (voiced). The evidence for this is interesting.

In Table 6 below, the first point that strikes one about the columns for *gbh and *gb is the occurrence of voiceless reflexes for *gb in SWE. Once we take devoicing into account (see 5.1.5 below), all we have to do is find out which original labial-velar stop has voiceless reflexes and which does not. To put the question directly: in SWE, did devoicing in labial-velars occur with the lenis *gbh or with the non-lenis *gb? Since non-lenis sounds are more likely to become devoiced, it is more plausible to say that it is PE non-lenis *gb that has voiceless reflexes in SWE.

The second point is the reconstruction of labial-velars instead of labialized velars. Evidence in support of this is the fact that labial-velar reflexes are more common than labialized velar ones (see Table 6).

Table 6

Correspondences for PE velars and labial-velars

	Proto-Edoid	kh	k	gh	g	kph	kp	gbh	gb	w
DE	Degema	k	k	w	?	kp	kp	gb	gb	?
	Egène	k	k	w	?	kp	kp	gb	gb	w
	Epie	k	k	w	g	kp	kp	gb	gb	
SWE	Eruwa	h	k	w	?	kp	kp	gb	gb	?
	Isoko	h	k	χ	χ	p ^c	p ^c	gb	p ^c	?
	Okpè	y/w	k	h	?	kp	kp	gb	kp	?
	Urhobo	h	k	χ	?	xw	kp	gb	xw	?
	Uvbie	h	k	g	?	kp	kp	gb	xw	?
NCE	Edo	x	k	χ	g	kp	kp	gb	gb	?
	Aoma	x	k	Ø	g	xw	kp	gb	gb	Ø
	Auchi	kh	k	χ	g	kph	kp	gb	gb	Ø
	Avbianwu	kh	k	χ	g	kph	kp	gb	gb	?
	Unemé	kh	k	h	g	kph	kp	gb	gh	yh
	Ghotuo	h	k	Ø	g	xw	kp	gb	gb	Ø
	Oloma	?	k	Ø	?	?	kp	gb	gb	?
NWE	Emhalhé	?	k	g	g	kph	kp	gb	gb	w
	Ibilo	kh	k	g	g	kph	kp	gb	gb	w
	Uhami	k	k	g	g	kw	kw	gb	gb	w
	Ehuéun	k	k	g	g	kw	kw	w	gb	w
	Ukue	k	k	g	g	kw	kw	gb	gb	w

5.1.4. Palatal plosives

One peculiarity observable in the palatal obstruent columns of Table 5 is the absence of palatal reflexes. This might have led one to reconstruct alveolars from the three sets of correspondences (as did Elugbe 1973). As there are already convincing correspondences from which the alveolar stops were reconstructed in Table 5, one would be tempted to postulate alveolar affricates and/or fricatives to account for what are presented as palatal columns in the table (see (2a) below).

However, examination of the alveolar and the palatal obstruent columns in Table 5 reveals that (a) PE *d has palatal/dental reflexes in SWE and (b) PE *ch and *c have alveolar reflexes in SWE. Taking these observations into account, one can reconstruct additional stops - this time at the palatal place (as seen in (2b)):

	a (cf. Elugbe 1973)	b (cf. table 3 above)
Implosive	b	d
Plosive lenis	th dh	th dh ch
non-lenis	t d	t d c
Affricate	ts dz	- - -
Fricative	s s'	- - -

Examination of Tables 5 and 7 reveals a curious series of shifts including that in which PE *d became devoiced as well as palatalized in SWE, as seen in Table 7.

TABLE 7: PROTO-SOUTH-WESTERN EDOID ALVEOLAR/PALATAL OBSTRUENTS

	PE	*th	*t	*dh	*d	*f	*c	*ch	*z
PSWE		*th	*t	*dh	*d	*f	*c	*ch	*z
Eruwa	t	t	r	d	s	z	s	z	
Isoko	r	t	f	d	t	d	s	z	
Okpè	r	t	f	d	s	ʒ/z	s	r	
Urhobo	r	t	f	d	c	z	s	r	
Uvbie	r	t	f	d	c	f	s	r	

A total view of the alveolar/palatal obstruent situation in PE compared with its reflex in PSWE shows that there is no need to reconstruct affricates or fricatives at the PE level. What we see in (3) below is the full implication of Table 7;

(3) PE	*d	>	PSWE	*d
	*th	>		*th
	*t	>		*t
	*dh	>		*dh
	*d	>		*c
	*ch	>		*z
	*c	>		*s
	*f	>		*ʃ

These shifts from PE to PSWE can be explained in terms of two developments: first is the palatalization and devoicing of PE *d in SWE; second is the subsequent 'fronting' of the original palatals into alveolars. It must have been a typical drag-chain situation.

In order to fully understand all this, we must quickly look at the loss of suction in all but the Delta Edoid subgroup. The PE implosives *b and *d simply lost their suction feature and became plosives in SWE (see Tables 4 and 5), thus triggering the following events:

(4) PE	*d	>	PSWE	*d
	*d	>		*c
	*ch	>		*z
	*c	>		*s

The picture which emerges from all this is so clear that there seems little need to explain it further. We have only to explain why we reconstruct palatal *ch and *c where there are no palatal reflexes. A look at Table 5 shows that the relationship between the reflexes for *ch, on the one hand, and *c, on the other, is exactly parallel to what we observe in the case of other lenis/non-lenis pairs such as th;t; nh:n, etc. And once we thus accept that *ch and *c form a lenis/non-lenis pair, *c has to be a palatal.

Finally, it is observed in Table 3 that I have not reconstructed * ʒ to match * g . There are a number of items which suggest that there may have been * ʒ in Proto-Edoid but they all involve the sequence -iV and have g- or gh-/ɣ- reflexes in some cases. It thus appears easier to explain such cases as deriving from *ghiV-. (See 'send', 'twenty'.) In some respects, even the reconstruction of * ʒ requires further support.

5.1.5. Devoicing

Table 5 shows very clearly that PE *d has voiceless reflexes in the whole of SWE. Although devoicing was observed and documented in Elugbe (1973:328-330), its role in the reconstruction of the over-all PE consonant system was not appreciated.

However, as pointed out above (section 5.1.3), recognition of the role of devoicing enabled us to separate PE *gbh from *gb: in the 1973 work, the inclusion of *gbh was an act of faith. Similarly, the recognition of the role of 'palatalization and devoicing' of PE *d in SWE (section 5.1.4.) enabled us to find a solution to the issue of whether or not there were palatals in PE.

It is significant from a general point of view that devoicing is here associated with non-lenis consonants. The opposite of this process in the Edoid context is 'breathy-voicing' which is associated with lenis consonants.

5.1.6. Lenis/non-lenis

The most widely discussed feature of the Edoid languages is the lenis feature (see Elugbe 1980a for a comprehensive review of the literature). I have already discussed this feature in Chapter 2. The lenis consonants are the h-series in Table 3.

As I pointed out in the 1980a work, most of the sound shifts observed in Edoid hinge on the development of this feature in the individual languages. As can be seen from Tables 4, 5, and 6, lenis consonants of PE have the most varied reflexes in the Edoid languages. The examples of *bh vs *b, *mh vs *m, *dh vs *d, etc., amply demonstrate this. The implication of this is that the lenis

consonants are marked while the non-lenis ones are unmarked. My reference to this distinction as a lenis/non-lenis one is meant to reflect this implication.

Synchronic evidence for seeing the lenis as the marked set derives from two observations: (1) the non-lenis consonants are phonetically more like what we find in languages which have no lenis/non-lenis distinction. For example, a native speaker of Ibilo will equate the non-lenis voiced alveolar lateral approximant [l] with the English lateral approximant [l]; (2) children (as well as foreign learners of an Edoid language) more easily master the non-lenis consonants than the lenis ones (see Elugbe 1980a:41 where this point is amplified with a Ghotuo example).

5.1.6.1. Lenisness and consonant weakening

Both weakening and hardening in consonants represent a movement along the stricture scale. In consonant weakening the movement is down the scale, towards possible termination - often called zero. In hardening, the movement is up the scale (cf. Williamson 1977).

Consonant weakening can thus be seen as a process in which a stop becomes a fricative, then an approximant, and, finally, zero. In general, it is the lenis sounds that have been most prone to weakening. It is, for example, unusual to have a zero reflex for any of the PE non-lenis consonants, whereas lenis sounds have frequently been lost.

If we agree with Foley (1977:50) that 'weakening applies preferentially to weak elements', then our observation that lenis sounds are more prone to weakening than non-lenis ones confirms the view that lenis consonants are weaker than non-lenis ones.

5.1.6.1.1. Non-affricated stop becomes affricated

This represents an example of weakening because although there is still a stop element in the affricate, there is also a fricative element in it and the sudden release in the non-affricated stop has been converted into a gradual one. Thus

- (5) *c > ts
 *_g > dz

There are not many examples of this in the data now available, but it is supported by examples from the two Yékhee dialects of Auchi and Avbianwu as in 'faeces', 'shoot/hit', and 'choose'.

5.1.6.1.2. Labial-velar becomes labialized velar

In Elugbe (1980a) these were treated in the reverse - i.e. as cases of labialized velar becoming labial-velar, and therefore as examples of hardening. However, as pointed out in section 5.1.3. above, postulating *kw, etc., instead of *kp, etc., has no advantage and makes us postulate PE *gw when the evidence is overwhelmingly for *gb.

In terms of explanation, the weakening of the labial element, to change a case of double to one of secondary articulation, is more to be expected. The shifts involving *kph and *gb can thus be seen in stages:

- (6)a. *kph > kw (in Osse, e.g. 'beat drum')
- b. *kph > xw (Urhobo, Aoma, Ghotuo - 'beat drum')
- c. *gb > xw (Urhobo, Uvbie - 'ten', 'beat/kill')

Now not only can we say that stage (6a) precedes stage (6b,c), we also have fewer shifts to postulate than if we had reconstructed PE labialized velars. Cases in (6c) are interesting because we assume that PE *gb > PSWE *kp, then weakened to xw in Urhobo and Uvbie. In the case of Urhobo, the *kp derived from PE *gb was treated the same way as *kph; Uvbie and Eruwa would appear to have kept *kph and *gb separate - in each case, with a weaker reflex for PE *gb (see Table 6).

The cases in which a w-reflex turns up for an original labial-velar stop can be seen as a logical extension of this process: examples are PE *gbh in Ehuéun and PE *gb in Eruwa.

5.1.6.1.3. Other degrees of weakening

Since weakening is one continuous process, it is difficult to discuss the different stages independently of each other. For

example, the following stages of weakening exist (in addition to cases such as (5) and (6));

- (7) a. stop > fricative
- b. fricative > approximant
- c. approximant > zero

What we find in the Edoid situation is that different languages have carried the weakening process to different levels. In Edo (Bini), PE *kh > x; in Ghotuo *kh > h. It is assumed here that at an earlier stage, the Edo rule was true of Ghotuo which then proceeded to further weaken x > h.

In the same way, PE *dh > l in a number of Edoid languages. But the reflex of *dh in Eruwa is x; in Aoma it is Ø. The weakening of this original lenis stop to zero obviously goes through a number of stages. So, we do not say here that stops become zero, since evidence of intermediate stages exists.

Although the point has been made that lenis sounds are more prone to change - and to weakening in particular - there are examples of non-lenis stops which have weakened into fricatives. For example, the merging of *ph and *p in a number of these languages is due to the fact that, along with *ph, *p also becomes a fricative in the same languages. In Uhami, *bh and *b have merged, yielding v. In Dégemé, Egené, Ghotuo, etc., many original stops (both lenis and non-lenis) have fricative reflexes. Thus, although PE lacked any fricatives other than the labiodental ones, (7a) is responsible for many Edoid languages being rich in fricatives (cf. also Elugbe 1974).

It is obvious, therefore, that (7b) could hardly be substantiated unless it was based on the cases of fricatives derived from other PE consonants. A reference to the tables of sound correspondences easily shows that where a PE stop weakened into a fricative, the process was carried further in some cases so that fricatives became approximants.

Finally, we do find cases of Ø-reflexes for stops - notably for *dh and *gh. In the case of *dh we assume intermediate stages such as l and x. In that of *gh we assume intermediate

y and/or w stages.

Unlike the case of PE stops and fricatives derived from PE stops, there are cases of a direct loss of a PE approximant. In 'song' and 'say' PE approximants must have been lost in those languages showing a Ø-reflex.

However, cases of epenthetic y or w must not be confused with original approximant reflexes of *y, *w, or some other consonants. Let us take the typical development of PE *dh in some NCE languages.

- (8) a. First, *dh > l (a short/tapped alveolar lateral approximant, a sound that has baffled many investigators).
b. Then l > r (a voiced alveolar central approximant).
c. Finally r > Ø (the approximant r, already lacking in any central contact, is lost).
d. But Ø > y (after loss of r, a palatal approximant develops!).

The two items 'eat' and 'do, make' are very interesting here.

In some dialects of Edo (Bini), 'eat' is ye; it is e or æ in some others; and still le in a number of others. In Ghotuo, the same person may say e 'eat' on one occasion and then yhe (with a weak palatal approximant) on another occasion. Yet the older generation consistently say le 'eat'.

When we compare epenthetic cases of y (as in 'eat', 'do') with cases of original *y (such as 'song') it becomes clear that in determining whether, in a particular case, we are dealing with epenthesis or a weakening to zero, we have to be careful to take the full set of correspondences involved in that item into account.

5.1.6.2. Lenisness and consonant hardening

There are two cases to be considered here: (i) a lenis sound takes on the phonetic character of its non-lenis counterpart; (ii) a lenis sound becomes implosive (without any change in the point of articulation).

5.1.6.2.1. Lenis sounds become non-lenis

There are many examples of a lenis/non-lenis contrast being lost at a given place of articulation through the hardening of a lenis consonant, resulting in a merger with its non-lenis counterpart. For many Edoid languages (for which see Tables 4-6), this was a simple way of reducing the role of lenisness in the consonant system. Some examples are given in (9):

- (9) a. *bh > b ('goat', 'dog')
b. *th > t ('tree')
c. *dh > d ('eat', 'do/make', etc.)
d. kh > k ('to fight', etc.)
e. kph > kp ('beat (drum)', 'horn')
f. gbh > gb ('dance', etc.)
g. mh > m ('my', etc.)
h. nh > n ('meat', 'know')

It should be noted that in spite of (9f), which can be confirmed for all Edoid languages of the northern area, Yékhee dialects, Unémé (NCE), Oloma, Emhalhé and Ibilo (NWE) all retain an occasional gbh in their sound systems, although it has been impossible so far to link gbh-stems in such languages with PE stems which are reconstructable within available data.

5.1.6.2.2. Lenis sounds become implosive

Examples of this have been discussed in section 5.1.2.

5.1.7. Consonants in -C₂- position

A look at the reconstructed PE stems will reveal that only the lenis sounds *dh, *ch, *G and *mh, *nh, and *N were permissible stem-medial consonants in PE. It also happens that the development of these consonants in medial position frequently differed from their development in stem-initial position.

The general tendency has been towards a reduction of the number of syllables in stems through (10):

- (10) PE *CVCV > CVC > CV
or through (11):

- (11) PE *CVCV > CVV > CV

In other words, stem reduction is achieved by first dropping the final vowel and then the $-C_2-$, now turned final consonant.

Alternatively, the medial consonant is lost, yielding a vowel sequence which will be followed by later simplification of the sequence.

The fact that $-C_2-$ should be a lenis consonant is not surprising. In a given stem, there is probably less effort available for a final syllable than for an initial syllable. This phonetic fact and the tendency of lenis consonants to further weaken and get lost have combined to create monosyllabic stems on a wide scale in the modern Edoid languages.

In the stem-reduction process, the DE languages have favoured (10) while the rest of Edoid have favoured (11). In (12) we compare some PE stems with their reflexes in the different sub-groups of Edoid.

	DE	SWE	NCE	NWE	Gloss
PE	Degema	Isoko	Auchi	Ibilo	
E-nhamhi	è-nám	à-ràò	è-lamhi	à-ñà	meat
dedhi	der	g̊etei	rele	dzeli	be long
pachri	føse	(voavø)	fø	føži	be cold
khonhi	køn	horí	khoë	khoŋo	fight
ghu-chɔGr	ó-!sáó	ó-zó	é-vò	ó-žò	ear
dhi-kiNø	ú-!kíé	é-ké	é-kèè	lá-cà	egg

(12) is, of course, not fully representative of every possibility, but it does show the occurrence of final consonants in a DE language (as a result of (10)) where we have CV and CVV elsewhere. On the other hand $-G-$ and $-N-$ have been lost in DE while a sizable percentage of other $-C_2-$ are retained even outside DE. Our claim about (10) and (11) is thus a rather simplified generalization. The reconstruction of $-C_2-$ (usually the consonant of the final syllable) is done on an individual basis for each of the items where it is possible to reconstruct one at all.

Even so, a few generalizations must be made. For example, our $-N-$ has no segmental reflex in any known Edoid language. It may never have been realized except as nasalization of surrounding vowels (see under section 5.2.2. below). On the other hand, we have segmental reflexes of $-G-$ in 'ear', 'twenty', 'house'. It would appear that a kind of velar nasal or a nasalized velar (approximant?) ÿ occurred, presumably as a nasal counterpart of G which was either a lenis velar stop or a velar fricative or approximant. The decision to reconstruct $-G-$, rather than $-gh-$, is based on the observation that its segmental reflexes in the Edoid languages are restricted to only a couple of languages in the NCE/NWE border area.

Our reconstructions must be taken at the systematic phonetic level. Underlyingly, the voiced lenis nasals [mh] and [nh] were probably /bh/ and /dh/ respectively. Once we link $-G-$ and $-N-$ in the same way, we can say that, phonologically, only */bh/ (in its nasal allophone only), */dh/, */ch/ (no nasal allophone has been reconstructed for this so far) and */G/ occurred at $-C_2-$ in PE.

Finally, a study of $-C_2-$ development should probably be based on a study of what the different $-C_2-$ consonants do, as determined by their place of articulation. Thus, no Edoid language has a segmental reflex for the velar $-N-$. But many retain actual reflexes of PE bilabial, alveolar, and palatal $-C_2-$. In DE, bilabials and alveolars are retained. In Isoko, an occasional alveolar is retained. In Auchi, reflexes of the bilabial and alveolar $-C_2-$ occur. However, in Ibilo, only original PE alveolar and palatal $-C_2-$ have developed into actual phonetically available reflexes.

5.2. The vowel system of PE

5.2.1. The inventory

A ten-vowel system is postulated for PE. It is also postulated that any of these vowels could be nasalized in the environment of nasals; in particular, our reconstructed *N may not have been realised as anything but nasalization of vowels around it (see sections 5.1.7 and 5.2.2.). Finally, it is suggested that PE

operated an elaborate but symmetrical vowel harmony system of the West African cross-height type (see section 5.2.3).

(13) PE vowels

i	u
ɪ	ə
e	o
ɛ	ɔ
ə	
a	

5.2.2. Vowels, nasals, and nasalization

In 1973, I suggested that significant vowel nasalization occurred in PE and that of all the vowels only *e and *o had no significantly nasalized counterparts. This suggestion was based on the observation that no *ɛ and *ɔ could be convincingly reconstructed for PE.

Nasalization in the modern Edoid 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 PE lenis nasals in -C₂- or any other position. It is for such cases that significant nasalization is postulated, giving us CV and CVV examples in the 1973 work. In the 1977 work by Elugbe and Williamson, PE *CV̄ and *CV̄V are said to have been derived from a pre- or early Proto-Edoid form in which a velar nasal -C₂- occurred. Thus

(14) 1973 ə-thā̄f

1977 ə-thā̄ŋ̄

1980a and present work: ə-thaN̄i

My present position is a modification of the 1977 position. The postulation of N is for PE rather than a pre-PE stage; but I do not claim that the consonant responsible for nasalization in such cases was exactly -ŋ̄.

In making a case for a Pre-PE -ŋ̄-, Elugbe and Williamson point to two facts which are relevant: (1) the irregularity of having

-mh- and -nh- but not -ŋ̄h- or -ŋ̄- (our -N-), and (2) the derivation of significant nasalization from the loss of -mh- and -nh-. Their examples are sufficiently interesting to warrant reproduction here in a modified form (see (15) and (16) below).

If we assume that the typical PE stem was CVCV (and occasionally CV, CVV or CVC), in which -C₂- was frequently a nasal -mh-, -nh-, or -N-, we find that all Edoid languages have lost -N-, with faint traces left in the form of vowel nasalization, while the bilabial and alveolar -mh- and -nh- are retained here and there. Using Dégema, Egene (DE), Isoko (SWE), Aoma (NCE), and Ibilo (NWE) as examples, we find that

(15)	Proto-Edoid	CVmhV	CVnhV	CVNv;
> Dégema	CVm	CVn	CVV/CVV	
> Egene	CVm	CVn/CvnV	CVV	
> Isoko	CVV	CVfV	CVV/CV	
> Aoma	CVmV	CV	CV	
> Ibilo	CV	CVnV	CV	

The languages in (15) are not representative of what happens within each subgroup of Edoid. For example, the Isoko examples obscure the fact that PE -mh- is retained as -m- in Okpé, also a SWE language. However, they do give an idea of the variety of processes by which vowel nasalization and stem reduction have taken place in Edoid. (16) is a practical demonstration of (15) with examples (note in the case of Dégema that CVV is derived from PE *CVNI while CVV is derived from *CVNA, where I = i ~ ɪ and A = ə ~ a, depending on vowel harmony):

(16)	PE	E-nhamhɪ khənhɪ	U-thaN̄i	dhi-kiN̄e
De	è-nám	kən	ó!-thā̄f	ú!kíé
Eg.	à-nàm(ò)kòn(ɪ)	è-tà̄l	í-kíè	
Is.	à-ràò	hɔrɪ	ú-ré	é-ké
Aoma	é-àmì	xɔ̄i	ó-rà	é-kè
Ibilo	à-nà	khɔ̄n̄	ú-jà	lá-cà
Gloss	meat	fight	tree	egg

It is not possible to say that all the Edoid languages drop -mh- before -nh- or vice versa. What is clear is that the most unpopular C_2 is the velar -N-. Beyond that, some languages have dropped -nh- while retaining -mh- (e.g. Aoma); some others have dropped -mh- while retaining -nh- (e.g. Ibilo).

It should be recalled again that our reconstruction is at a systematic phonetic level. Therefore, our surface PE *CVmhV, *CVnhV, and *CVNV may have been underlyingly */CVbh \tilde{V} /, */CVdh \tilde{V} /, and */CVG \tilde{V} / respectively. Cases which we now reconstruct as *CVN would be */C \tilde{V} / or */CVG \sim /. However, our *CVNV (possibly < */CVG \tilde{V}) were reconstructed as *C $\tilde{V}\tilde{V}$ in the 1973 work. The case made by Elugbe and Williamson (1977) provides some non-Edoid comparative-historical evidence for my position here.

5.2.3. Vowel harmony

The distribution of vowels in the reconstructed PE lexicon leads to the conclusion that PE operated vowel harmony of the Kwa type in which the vowels fall into two sets, one characterised by an expanded pharynx and the other by the absence of such expansion (cf. Lindau 1975; Stewart 1967). The two sets, classified in terms of Lindau's feature, are shown in (17):

(17)	Set 1	Set 2	
	Expanded pharynx	Non-expanded pharynx	
i	u	ɪ	ə
e	o	ɛ	ɔ
ø		a	

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

There is a reduced role for vowel harmony in the Edoid languages, and it is observed that the more the vowels in a given system, the greater the role of vowel harmony. Thus vowel harmony is virtually non-existent in the North-Central Edoid languages (Edo, Auchi, Ghotuo, etc.), where the original ten-vowel system has been reduced to seven. In Delta Edoid where ten-vowel systems

exist, vowel harmony is at its most symmetrical and obligatory. The NWE and SWE situations are intermediate between these two extremes.

5.2.4. Vowel system reduction

The implication of postulating a ten-vowel system for PE is that most Edoid languages have reduced the original system in various ways. The first step is to prove that we are dealing with reduction rather than expansion in the Edoid situation. That is easily done by examining Table 8, where it is clear that while *i and *e have regular i- and e- reflexes in the Edoid languages, *ɪ shifts to i, ɪ, e, or ε! Similarly, while *u and *o have u- and o- reflexes respectively, *ø has reflexes ranging from u, ø, to o or œ. 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.

Our next task is to draw some generalizations from the way in which the original ten-vowel system has been reduced in the Edoid languages.

- (18) a. In the nine-vowel systems, there is no /ə/.
- b. In the eight-vowel systems, there is no /ə/ and no /ɪ/.
- c. In the seven-vowel systems, there are no /ə, ɪ, ø/.

An example of (18a) is Egene. Ibilo is an example of (18b) while all NCE provide examples of (18c). An examination of the individual systems in (18a, b) will show that [ə] remains as an allophone of /a/ in the case of (18a) while [ɪ] remains as an allophone of /i/ in (18b).

In the ten-vowel system of Degema, /ə/ is forbidden in noun prefix position; in the nine-vowel system of Egene, /ɪ/ and /ø/ are forbidden in prefix position. It would appear that this is one of the ways in which vowel system reduction is likely to be initiated.

The following diagram in (19) summarises the preceding discussion.

TABLE 8: VOWEL CORRESPONDENCES IN EDOID

	i	r	e	ɛ	ə	a	ɔ	o	ø	u
DE: Degema	i	r	e	ɛ	ə	a	ɔ	o	ø	u
Egene	i	r	e	ɛ	e	a	ɔ	o	ø	u
Epie	i	r	e	ɛ	e	a	ɔ	o	ø	u
SWE: Eruwa	i	r	e	ɛ	ɛ	a	ɔ	o	ø	u
Isoko	i	r	e	ɛ	e/ɛ	a	ɔ	o	ø	u
Okpe	i	r	e	ɛ	ɛ	a	ɔ	o	ø	u
Urhobo	i	r	e	ɛ	ɛ	a	ɔ	o	ø	u
Uvbie	i	r	e	ɛ	ɛ	a	ɔ	o	ø	u
NCE: Edo	i	e	e	ɛ	a	a	ɔ	o	ø	u
Aoma	i	e	e	ɛ	a	a	ɔ	o	ø	u
Auchi	i	e	e	ɛ	a	a	ɔ	o	ø	u
Avbianwu	i	e	e	ɛ	a	a	ɔ	o	ø	u
Uneme	i	e	e	ɛ	ø	a	ɔ	o	ø	u
Ghotuo	i	e	e	ɛ	a	a	ɔ	o	ø	u
NWE: Oloma	i	ɛ	e	ɛ	a	a	ɔ	o	u/ø	u
Emhalhe	i	ɛ	e	ɛ	a	a	ɔ	o	ø	u
Ibilo	i	ɛ	e	ɛ	a	a	ɔ	o	ø	u
Uhami	i	i	e	ɛ	a	a	ɔ	o	u	u
Ehueun	i	i	e	ɛ	a	a	ɔ	o	u	u
Ukue	i	i	e	ɛ	a	a	ɔ	o	u	u

(19)

i	u
r	ø
e	o
ɛ	ɔ
ə	
a	

Although */ə/ is not reconstructed in my 1973 work, there is no doubt that it should have been reconstructed. The inclusion of Degema and Uneme in my data added a new dimension to the picture; but even without that, the correspondences observed in 'two' and 'river' were enough to have suggested *ə in the first instance.

Just how versatile *ə has been is evidenced by the variety of reflexes shown in Table 8 and in (19).

5.2.5. Vowel sequences

Vowel sequences are widely attested in the Edoid languages. The sequences are either closing or opening. A closing sequence of vowels is one in which the final 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 final vowel is more open (i.e. lower on a Height scale) than the first.

Thus we find opening sequences such as -iV, -rV, -øV, and -uV in which V is lower than the close i, r, ø, u. On the other hand typical closing sequences are -ei, -ai, -øø, -ou, etc.

There are more sequences in a typical modern Edoid language than we postulate for Proto-Edoid. This arises from the fact that most Edoid languages have zero-reflex for the PE -C₂-mh-, -nh-, etc. (see section 5.1.7 above).

In assessing the validity of our reconstruction of any item, it has to be recalled that in some of these languages, vowels in sequence in stems (whether originally in sequence at the PE level or derived later from CVCV stems) have sometimes coalesced to form other single vowels.

It is not unusual to find cases such as (20):

- (20) ue ~ o
 əa ~ ə

It is impossible to draw generalisations here and the validity of each case should be considered in isolation. The point is made in Elugbe (1973) that languages of the Osse cluster of NWE show more evidence of coalescence than anywhere else in Edoid. I have no evidence to alter that observation.

5.3. Proto-Edoid morphology

I have argued above that the typical PE stem was of the structure CVCV. Some stems were obviously more than two syllables, just as some were monosyllabic.

In C_1 - position of the stem, every consonant could occur, with the exception of -G- and -N- which occurred only as stem-medial consonants (see section 5.1.7 above).

However, in C_2 - position, only a few lenis consonants occurred and these, reconstructed at a systematic phonetic level, were the oral -dh-, -ch-, and -G- and the nasal -mh-, -nh- and -N- (see section 5.2.2. for a discussion of the possible relationship between the oral and the nasal consonants).

If consonants in stem-medial position were restricted to a handful of lenis consonants, possible stem-final vowels were even more restricted: only *i, *ɪ, *ə and *a are reconstructed in $-C_2 V$ position (the case of 'lick' is probably two stems from *la 'lick' and *dhoNi 'swallow' or some other such combination). When we take vowel harmony into account, then we can say that only *I and *A occurred stem-finally because every second/final syllable in Edoid agreed in pharynx width with other vowels in the stem. Thus we postulate that the system of vowel harmony operated by PE made the vowels in a given stem to be all with an expanded pharynx or all with a non-expanded pharynx.

In the modern Edoid languages, affixes of various types are attested. In some of them, affix vowels take a non-expanded shape in agreement with non-expanded stem-vowels and take an expanded shape with expanded stem vowels.

PE operated a noun class system in which a noun was marked by a singular/plural pair of prefixes. There is also evidence to suggest that each singular/plural class of nouns attracted concordial elements by which grammatical reference to it was marked. While the noun prefixes can be convincingly reconstructed, the concordial elements attached to them may not be equally easy to reconstruct. That is because only the Southern-NWE languages have retained a fairly elaborate, semantically based system of concord in their noun classes. Elsewhere, agreement between a given noun and its modifier, for example, is limited to number.

5.3.1. Noun prefixes of PE

The following noun prefixes may be reconstructed for PE:

	sg. prefixes	pl. prefixes	single-class prefixes
CV-:	ghU-	V-:	A-
	dhI-		V-
V-:	U-	I-	U-
	I-	E-	
	E-	O-	
	O-		A-

Each capital letter in (21) summarizes two alternants determined by vowel harmony. Thus U- represents an u ~ ə alternation; I = i ~ ɪ; E = e ~ ɛ; O = o ~ ə; and A- = ə ~ a. It is unlikely that tone played a part in the determination of noun classes in PE because no modern Edoid language has shown any evidence of the involvement of tone in noun classification of any type - gender or number. The noun prefixes listed in (21) are paired as in (22):

- (22) 1. ghU-/A-
 2. U-/A-
 3. U-/I-
 4. dhI-/A-
 5. I-/A-
 6. O-/A-

7. *o*-/i- O-/I- *o*-/i- *o*-/i- *o*-/i-
8. *e*-/i- E-/I- *e*-/i- *e*-/i- *e*-/i-
9. *a*-/i- A-/I- *a*-/i- *a*-/i- *a*-/i-
10. *a*-/i- A-/I- *a*-/i- *a*-/i- *a*-/i-
11. *i*-/a- I-/A- *i*-/a- *i*-/a- *i*-/a-
12. *u*-/a- U-/A- *u*-/a- *u*-/a- *u*-/a-

The reconstructed PE pairings are compared with Proto-Bantu and Proto-Benue-Congo (De Wolf 1971) class pairings in Table 9 below.

TABLE 9. PROTO-EDOID, PROTO-BANTU AND PROTO-BENUE-CONGO CLASS PAIRINGS AT A GLANCE.

	PE	PB	PBC
1.	ghU-/A-	15/6	ku/a
2.	U-/A-	15/6	ku/a
3.	U-/I-	3/4	bu/f, ú/ti
4.	dhI-/A-	5/6	li/a
5.	I-/A-	5/6	li/a
6.	O-/A-	1/2	ù/ba
7.	O-/I-	3/4?	bu/f, ú/ti?
8.	E-/I-	9/10	í/f
9.	A-/I-	13/5?	?
10.	A-	6	ma, a?
11.	I-	?	?
12.	U-	14?	bi, bu ?

Reconstructed PE nouns are cited with their pairing prefixes, so that there is no need to give a list of the membership of each pairing here.

5.3.2. Concord in PE

There is evidence of concord in every branch of Edoid. However, it is only in the Southern-NWE languages that concord involves more than number. In Oloma, for example, it has been

demonstrated that semantic demarcation plays a role in the determination of concord (see Elugbe and Schubert 1976; Elugbe 1982). In (23), we note that concord elements are neither identical with nor predictable from the noun prefixes;

(23) Oloma

a.	i	ó-kphò	p1	í-kphò	'river'
	ii	ó-kphò		ó-nò	'this river'
	iii	í-kphò		í-nò	'these rivers'
b.	i	ó-gbhò	p1	í-gbhò	'wizard'
	ii	ó-gbhò		á-nò	'this wizard'
	iii	í-gbhò		é-nò	'these wizards'
c.	i	à-fè	p1	í-fè	'house'
	ii	á-fé		á-nò	'this house'
	iii	í-fé		í-nò	'these houses'
d.	i	lè-kò	p1	à-kò	'tooth'
	ii	lé-kò		lè-nò	'this tooth'
	iii	á-kó		á-nò	'these teeth'
e.	i	lè-cà	p1	á-cà	'egg'
	ii	lè-cà		lè-nò	'this egg'
	ii	á-cá		é-nò	'these eggs'

Thus 'river' and 'wizard' both have an *o*-/*i*- prefix pairing but attract different demonstrative concord markers. Noun prefixes agree in expanded pharynx with the vowels of the noun stem (see section 5.3.1. above).

Even so, there is evidence to suggest that the vowels involved in concord in PE were a singular-marking **o*-, a plural-marking **i*-, and a semantically-determined singular/plural **a*-. For example, the full range of demonstrative concord elements in Oloma are:

(24)	sg.	o	í	gho
	pl.	é	lè	ghé
	sg./pl.	a		

The corresponding elements in Degema (in spite of its elaborate noun prefix system) are sg. *o* and plural *i*. It may well be that

an additional a- element will be identified later in Dégema. In the SWE Isoko, the corresponding items are also o and i; in NCE Ghotuo they are o and e.

It may well be then that it will be possible eventually to reconstruct the concordial elements of PE. Since we reconstruct PE CV- noun prefixes on the evidence of the Southern North-Western Edoid languages (with some help from NCE languages contiguous with them), we may also have to reconstruct CV- concord elements. In that case, the consonants involved will be *dh and *gh.

To sum up, then, a PE noun was made up of a stem and a prefix. If it was used with a modifier, there was a concordial element attached to that modifier to indicate that the modifier in question was referring back (since the order was N + Modifier) to the noun.

5.3.3. Morphology of the verb in PE

PE verb stems were also of the general shape CVCV, though CV, CVV and other polysyllabic verb stems apparently occurred. The vowels of any verbal affixes such as subject pronouns, subject concord markers, tense/aspect markers, etc. were presumably required to agree in harmony with those of the verb stem.

Although I have not undertaken a deep study of verbal constructions in Edoid, I have been able to determine (Elugbe 1984) that PE employed a gerund-marking morpheme reconstructed as:

(25) *U... (A)mhi

which was a discontinuous morpheme realized as *u... (ə)mhi if the verb stem had expanded vowels and as *ə... (a)mhi if the vowels of the verb stem were non-expanded. Moreover, the optional (A) (= a) was deleted if the preceding stem vowel was not a close front or back vowel. The examples in (26) would thus probably be realized as shown here:

(26)

PE verb stem

derived
gerund

- a. mi 'wring (clothes)' u-mi-əmhi > umyəmhi 'wringing (clothes)'

- | | | |
|-------|---------|------------------------------|
| b. cə | 'sew' | ə-cə-amhi > əcwamhi 'sewing' |
| c. do | 'weave' | u-do-əmhi > udomhi 'weaving' |
| d. də | 'buy' | ə-də-amhi > ədəmhi 'buying' |

5.4. Evidence for the internal Edoid sub-grouping

In Chapter 1, I presented a classification of Edoid, giving details of its internal subgrouping. However, the reader was referred here for the evidence that supports that classification.

In the 1973 work, I suggested that the first Edoid split was a two-way one, giving us a South and North Edoid main branching. But I also said (p. 341) that the North Edoid branch is 'unfortunately, not supported by any sound shifts ...' It is also observed that even the South branches (made up of DE and SWE) are not convincingly united by any observed innovations.

It was not until 1979 that I took the logical step of postulating a four-way primary branching on the Edoid tree. That was when I gave more weight to innovation rather than to my knowledge that DE and SWE are very close geographically (in spite of the natural barrier provided by the Niger) and that NCE and NWE languages exist side by side all over northern Bendel State.

Even the most cursory look at our tables of consonant correspondences will reveal that each of the four branches stands on its own and no two or three of them can be united by common innovation.

We observe, for example, that in DE, the original PE voiced lenis bilabial and alveolar plosives became implosive. This is not shared by any other branch.

The South-Western Edoid branch palatalized and devoiced the original voiced non-lenis alveolar plosive *d. PE *gb was also devoiced. Again, no other branch shares this.

Unlike SWE, what NWE did with PE *d was to weaken it to dz and z. Again, no other branch shares this.

If NCE is not so clearly established by any such innovations not observed elsewhere, it can at least be separated on the

grounds that it does not share such innovations. On the other hand, it is only in NCE that we find every language involved in the shifts PE *r > e and *o > o (see Table 8).

In the light of all this, the so-called lexical evidence advanced for the unity of DE and SWE into a South Edoid branch and of NCE and NWE into a North Edoid branch in the 1973 work must be explained in terms of gaps in my data and in terms of proximity. DE and SWE have tended to be influenced by Lower Niger (Igboid) and Ijo. NCE and NWE have tended to be united by being part of the Edo Kingdom (as opposed to the Benin Empire). Linguistically, there is no evidence to unite them to the exclusion of the other two, singly or jointly.

Finally, it must be repeated that the geographic spread of Edoid, starting from the Delta, is DE, SWE, NCE, and NWE. Therefore, if cognates for a particular item are found in two non-contiguous branches, it certainly should be regarded as a PE item. On the other hand, items in two contiguous branches should be held suspect. Ordinarily, they should be considered PE since the four branches are co-ordinate; but considering the possibility of borrowing, one should be wary of reconstructing such items for PE. Cases falling into this category will be considered individually on their own merit, taking the general patterns of sound change into account.

CHAPTER 6

PROTO-EDOID RECONSTRUCTIONS

6.0. Notes on the presentation of PE reconstructions

In the following pages, I present Proto-Edoid reconstructions and the comparative series from which they are reconstructed. The languages (twenty in all) are displayed in order from the southernmost to the northernmost - i.e. from Degema to Ukue (see Figures 2 and 4). The reconstructions are numbered from 1-207. Below each reconstruction is a comparative series on which the reconstruction is based.

As in other chapters, I have used symbols closest to the IPA representation of the sounds concerned. I have employed diacritics, where necessary, to indicate phonetic characteristics not accounted for in the IPA inventory. Such diacritics and any special use of IPA symbols are explained below.

In the presentation of the comparative series, I have used a mixture of orthographic and systematic phonetic representation. Where there is a marked difference between the two, I either give only the phonetic form or give both side by side, with the phonetic one in square brackets.

The reconstructions are presented in alphabetic order using the stem consonant:

b	(1-2)	k	(103-118)
bh	(3-13)	kh	(119-127)
þ	(14-22)	kp	(128-135)
c	(23-35)	kph	(136, 137)
ch	(36-49)	l	(138-40)
d	(50-62)	m	(141-149)
dh	(63-71)	mh	(150-154)
ð	(72-76)	n	(155-163)
f	(77-82)	nh	(164-166)