GENERATIVE PHONOLOGY AND DIALECT VARIATION:

A STUDY OF HAUSA DIALECTS

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ABSTRACT

This thesis is concerned with the dialects of Hausa as spoken in Nigeria. There are five chapters and three appendices. The first chapter is composed of two parts. The initial part discusses two things, namely (i) the genitic affinity of Hausa and its status within West African languages, (ii) the various contributions made to the study of Hausa, in particular those which are either directly or indirectly connected with dialect variation. The second half of the first chapter examines different approaches to dialect study, such as the traditional approach, the structural approach and the generative approach. Of these, the generative approach is preferred, hence it is the method adopted here to account for Hausa dialect variation.

Chapter two aims at presenting in an overall way the major differences that exist between the dialects. The presentation is along traditional lines. Here the dialects of Hausa have been classified into two major dialects, namely East-Hausa and West-Hausa. The criteria for this classification are the phonological and morphological isoglosses. A lexicostatistic analysis carried out during this survey supports this classification.

Chapter three concerns the general phonology and phonetics of Hausa. The points discussed here are basically the systematic segments and the distinctive features.

Chapter four concerns aspects of the morphology. Here we account (by means of various rules) for the morphological differences between the dialects as seen in Chapter two . The entire analysis is within the theory of generative phonology as developed by Chomsky and Halle (1968).

Chapter five discusses the various phonological rules operating in both dialects with regard to the types of mechanisms involved in dialect differentiation. Here it has been observed that rule addition, rule simplification and rule loss are the prime agents in our dialect variation, while differential rule ordering is not.

There are three appendices: (i) a brief discussion of syntax, (ii) a discussion of the unsystematic nature of vowel correspondences between Hausa dialects, (iii) the word list employed for lexico-statistic calculations, together with relevant notes on its composition.

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TRANSCRIPTION AND RULE FORMALISM

Three types of transcription are used here. They are (i) a phonemic transcription (ii) a phonetic transcription and (iii) an orthographic transcription.

(i) The phonemic transcription makes use of two oblique lines, one at the beginning of an element or elements and the other at the end of it, e.g. /ʃekɐɽa/ 'year'. These lines indicate that the form or segment provided has its underlying representation.

(ii) The phonetic transcription is enclosed within square brackets. Here the sounds enclosed are an attempt to represent the actual phonetic sound of a given form as pronounced by the speaker (i.e. it is the surface phonetic representation), e.g. /ʃekɐɽa/ would be transcribed phonetically as [ʃe:kɐɽa:] 'year'. This type of transcription is however not narrowly phonetic.

(iii) The last type of transcription used is an orthographic transcription. This employs the conventional way of writing Hausa as used in published literature such as books, newspapers and in teaching Hausa whether in schools or literary classes. This method of writing has been employed here to quote other works or in some other cases where the linguistically specific information is not necessary. In this latter case a line is drawn under the word or words, e.g. shekara 'year'. Where a written form is neither within slashes or square brackets nor is a line drawn beneath it, it means that the representation is not systematic, but something approaching a classical phonemic transcription. This can be seen throughout chapter four where examples are drawn from EH and WH and are compared without saying which segments are the basic ones.

Names of Hausa towns are written in the traditional way - not in the Anglicized way - so that Zaria, Sokoto and Hadejia are written as Zariya, Sakkwato and Hadejiya respectively. The only exception is Bauchi, which should have been written Bauci rather than Bauchi. However, the decision to write it in this way is based on the fact that, although it has an Anglicized spelling like Zariya, Sakkwato and Hadejiya, it is a far less misleading spelling than those of the other names.[1]

Except in the case of ɾ, IPA symbols have been used in both phonemic and phonetic transcriptions (while the Roman alphabet has been employed in the orthographic transcription).

Rule formalism. A phonological rule consists of (i) an input, which is a set of features whose function is to identify the sound or sounds which will undergo the change (ii) an output, which contains feature specifications representing the result of a phonological process and (iii) an environment in which the rule applies. These rules are written in such a way that redundancy and the repetition of feature values are avoided in the following ways: (i) that feature specifications which are redundant are not included in the input to the rule (ii) that unless the features of an input are changed they

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1. This is because it does not matter seriously to a native Hausa speaker whether the C in Bauchi is pronounced with or without aspiration - after all aspiration is not a distinctive feature in Hausa. With regard to the way Zariya and Hadejiya have been Anglicized there are two strong counter arguments, namely (i) that the MSC of Hausa prohibits a sequence of more than one tense vowel and whenever such occurs as a consequence of morphological formations the contraint is broken by inserting a glide epenthetically and (ii) that it is not in agreement with the general orthography of the language. In the case of Sakkwato being written as Sokoto it is simply a reflection of the way the English pronounce the name, not the way the Hausas pronounce it - English has no geminate consonants. Taking these facts into account one sees the necessity for de-Anglicization of the way these town names are spelled.

are not included in the output and (iii) that the number of rules which are related are minimized by way of collapsing or abbreviating them by means of brace notation, angled-bracket notation, alpha variable notation etc. (cf. Kensowicz and Kisseberth, 1979: 331-379; Sloat, Taylor and Hoard, 1978: 141-157).

Three boundary symbols have been used here. They are ## (full word boundary), # (internal word boundary), and + (morpheme boundary). A boundary symbol is automatically removed when the rule has operated. Representation of intermediate stages of derivation will therefore remain partly phonemic and partly phonetic until all the rules have applied by which time it will have been fully converted to a surface phonetic representation; and will be transcribed phonetically.

ABBREVIATORY NOTATIONS AND PHONETIC SYMBOLS

EH	East-Hausa
F	Feature/s
Fem	Feminine
FGSE	Feminine Gender Sensitive Element
GSE	Gender Sensitive Element
Kt	Katsina
Kn.	Kano
Masc.	Masculine
MGSE	Masculine Gender Sensitive Element
Sk	Sakkwato
WH	West-Hausa
Sing.	Singular
Pl.	Plural
1s.	First sing. pronoun
1pl.	First pl. pronoun
2ms.	Second sing. masc. pronoun
2pl.	Second pl. pronoun
3ms.	Third sing. masc. pronoun
3pl.	Third pl. pronoun
3fm.	Third sing. fem.
Imp.	Impersonal pronoun
>	This symbol is used to show that the segment given acquires some feature of a following consonant
/	The oblique or slash mark is placed after the output of a rule. It is read 'in the environment of'
———	the underscore sign is used to indicate the location of the input in relation to the determinant.

/ / phonemes are enclosed within the obliques.

\# The external boundary is used to separate morphemes and words.

\+ The internal boundary separates morphemes that are more closely bound than those separated by #.

* The asterisk denotes ungrammaticality, ill-formedness or indicates that a given form is reconstructed.

 The upside-down arrow joins the redundant feature values expressed in the 'If matrix' with the redundant feature value/s expressed in the 'Then matrix'.

≠ This symbol is to be read 'it is not the same as'.

~ This symbol is used to show that the forms given are in free-variation.

: The correspondence sign is used to show that forms linked with the sign are in regular correspondence.

∅ The null sign is used to denote deletion.

α, β These are Greek letters, namely alpha and beta. They are used to stand for plus and minus values of features.

[ ] square brackets are used to enclose feature specifications, phonetic symbols and surface representations.

{ } Braces are used to collapse or abbreviate rules.

( ) Parentheses are used to mark optional elements in a rule.

→ The arrow is placed between the input and the output of a rule. It is read 'becomes'.

< > Angle brackets are used to link elements of a rule which must be taken together as a condition on the application of a rule.

CHAPTER 1

1.0 GENERAL INTRODUCTION

1.1 Introduction

Nigeria is the home of the Hausa language. The Hausa states lie between the rivers Niger and Benue. The country has a population of about eighty million who speak over two hundred and fifty different languages. Of these, Hausa, Edo, Efik, Fula, Igbo, Kanuri, Nupe, Tiu and Yoruba have the largest numbers of speakers (i.e. those who speak the languages as their mother-tongues (cf. Alexandre, 1967).

Among these languages Hausa is the most widely spoken not only in Nigeria but also throughout West-Africa. The language achieved this wide expansion through trade.

In the (ten) Northern States of Nigeria Hausa is spoken as a mother-tongue, lingua-franca or second language, while in the remaining states and in other West-African countries, such as for example, the Niger Republic, Northern Ddhomey, Northern Togo and Northern Ghana (with the exception of some areas in the Niger Republic where it is a mother-tongue) it is used as language of trade. Under the Government of the Northern Region (now the Northern States) Hausa has shared official status along with English (cf. Kraft and Kirk-Greene, 1973).

According to Greenberg's classification of African languages (1963) in which he recognizes four major language groups, namely (i) Congo-Kodofanian (ii) Nilo-Saharan (iii) Afro-Asiatic and (iv) Khoisan, Hausa belongs to the Chadic family which is a sub-group of Afro-Asiatic.

Newman (1966) supports Greenberg's claim that the Chadic family does exist and 'constitutes a valid linguistic unit.' By way of diachronic

reconstructions, Newman establishes that among the closest languages to Hausa are the Bole and Angas languages, hence the term 'HAB' which is an abbreviation for Hausa, Angas and Bole used to refer to a subdivision of Chadic of which these languages are members (cf. Newman, 1972:1-13).

While Newman (1966) shares the view of Greenberg that Hausa belongs to the Chadic family, Parsons (1970) questions whether Hausa is a Chadic language, giving as one of the reasons for his doubts the existence of the ejectives /ts/ and /k̕/ in Hausa, for they are not found in any other Chadic language. He points out moreover that they are not included even in Newman and Newman (1966) tentative inventory of proto-Chadic phonemes. Whatever the case is, there seems to be a need to employ 'tools' which are capable of cutting deeper to prove the relationship (cf. Antilla, 1972).

Hausa had been reduced to writing even before the advent of the Europeans. The muslim learned produced an enormous amount of literature most of which deal with religious poetry, stories and historical traditions. All this was accomplished in the Arabic script. But after the coming of the Europeans many of these works were collected and taken to Europe - some were published while others are still in their manuscript form kept in libraries.

The earliest record of Hausa written in the Roman alphabet was contained in Adelung and Vater (1812:153 (cf. Bargery, 1934:IX-XXI)). Since then the study of the language has been developing very rapidly, as a result of which it would be extremely difficult (and, of course, cumbersome) to mention every contributor here. For the purposes of the present discussion only those who either directly or indirectly recognize dialect variation will be mentioned.[1]

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1. For a full list of early contributors (i.e. those between 1812-1934) see Westermann's 'Notes on the Hausa people and their language' in Bargery (1934:IX-XXI). See also Hair (1967).

Though the early Hausa writers noticed some dialect variation, they never bothered to pay serious attention to it let alone attempted to write a grammar for each dialect. Nor did they attempt to point out the variations in any detail. One reason for this is not difficult to see, for the first Europeans who came to Africa were missionaries, traders and administrators, and even the missionaries, who studied African languages, did so mainly for their evangelistic purposes - what they wanted was an instrument of communication and nothing further.

These early writers include the following: Schön (1885:vi), who indicated that G.A. Krause, in Tripoli, who was one of his sources, had noticed deviations in the dialects of Katsina, but what the deviations were, he did not mention; Koelle (1854), who worked on only two varieties of Hausa, namely Kano and Katsina; Harris (1907) recognized seven dialects of Hausa. He felt that the home areas of the purest Hausa were probably Kano and Katsina. Mischlich (1911) recognized the Kano, Sakkwato and Zamfara dialects; Migeod (1914) recognized Kano, Katsina, Sakkwato and Zamfara.

The first attempt to establish a dichotomy within the Hausa language was that of Bargery (1934). This author classified the varieties of Hausa into two divisions primarily, and remarked that 'the two main dialects are those of Sokoto and Kano. The speech of the peoples of Katsina, Zariya, Gobir and Co, has more in common with the former dialect than with the latter, whilst East-Hausa including that of Hadejiya and Katagum, has more affinities with the dialect of Kano (p.xxiv).

Bargery felt that what distinguished the Kano dialect from other dialects was its variations, which according to him, are largely witnessed in the vowel assimilations. He cited some differences of a dialectal nature, such as the occurrence of /u/ at Kano for labials elsewhere;

/r/ at Kano for /l/ elsewhere; /r/ at Kano for /s/ elsewhere (for example as the final consonant of causative verbs, just to mention one specific case).

Following Bargery some of the later Hausaists adopt the terms East-Hausa and West-Hausa when making reference to Hausa dialects in a much wider sense though with some variations in contents - i.e. in the composition of dialects (cf. Westermann and Bryan, 1970; Dogo, 1977 and Muhammad, undated).

The first book to be published on dialect variation in Hausa is that of Bello and Ahmad (1970). Unlike Bargery, the authors classified Hausa primarily into (i) Classical and (ii) Modern Hausa. According to them the word 'classical' refers to 'Hausa language and literary styles which have been greatly influenced by Arabic and Islamic tradition as opposed to modern Hausa, which connotes Hausa language and literary styles which have been influenced by Western civilization and culture through the agency of the English language ... But another feature of Classical Hausa is the fact that it is closer to Sakkwatonci or the Sakkwato dialect than to any of the major dialects. One has to refer to 'Dare Dubu da Daya', 'Labaru na Da da na Yanzu' and 'Hausawa da Makwabtansu,' to appreciate this point.' (p.7).

The authors believe themselves to have found many words in books written in earlier times which are still retained in the dialect of Sakkwato and are currently being used and thus consider 'at least from the linguistic viewpoint, Sakkwato is the cultural fountain of the Hausa people', while other dialects, especially Kananci, might have been influenced by external forces, Kano being for centuries the most 'urbanized and sophisticated Hausa city.

The book consists of two parts. Part one is intended to substantiate their claim that classical Hausa exists and that it contains many Arabic loans. The second part is intended to provide contrastive examples drawn from the dialects.

Seven major varieties of Hausa have been recognized, namely (i) Kananci (ii) Sakkwatanci (iii) Zazzaganci (iv) Katsinanci (v) Dauranci (vi) Hadejiyanci and (vii) the Bauchi dialect. They have clearly stated their criteria for classification but provide some samples of extracts from each dialect upon which they base their analysis and classify them accordingly. They merge Sakkwato and Katsina dialects together as having certain characteristics in common, for example, both dialects have /h/ and /h^{w}/ in place of Kano /f/[1] and where Kano has /ts/ Katsina and Sakkwato have /tc'/. The two dialects share certain lexical items in common, e.g. where they have diya 'daughter' Kano has 'ya. What distinguishes the Katsina dialect from the Sakkwato dialect, according to them, is that the Sakkwato dialect, is 'heavier' in pronunciation than the Katsina dialect. Furthermore, the Sakkwato dialect does not neutralize some of its vowels in some certain environments e.g. nononta is pronounced [no:nonta:] 'her milk, breast' or ragonsa is pronounced [ra:gwonsa:] 'his ram'. There is no assimilation of the definite article in Sakkwato instead it is always replaced by /t/ in all instances where definite /r/ occurs in all the dialects. The authors felt that Kananci is the major dialect closest to 'standard' Hausa, Sakkwato is the major dialect having least to do with 'standard' Hausa.

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1. The authors draw attention to the fact that this sound is closer to the English 'p' than 'f' (see p.8).

In the case of the Daura dialect the authors note two characteristics which are peculiar to it which are: (i) the definite article which is realized as /r/ (except in Sakkwato) is replaced by /l/ in Dauranci, (ii) sh is replaced by /h/ or /hj/ in Dauranci, e.g. ya tashi 'he wakes up' as in Kano corresponds to ya tahi in Dauranci.

They observe that zazzaganci has only one form of gender i.e. masculine gender and maintain that 'very often when a native speaker of Zazzaganci tries to recognize the feminine in his speech, he misapplies the feminine gender to masculine nouns.' They also observe that the use of shi in place of sa 'him' is characteristic of Zazzaganci.

The Bauchi dialect, according to them, is similar to Zazzaganci in the sense that in both dialects the feminine gender marker is not recognized. In addition to the feminine gender marker, the Bauchi dialect lacks /ʦ/ and /ʧ/ and such phonemes have merged with other phonemes, e.g. /ts/ with /s/, /ʧ/ with /ʃ/. The authors felt that this phenomenon might possibly be due to the influence of the Fulani language of the area in which the two sounds ([ts'] and [ʧ]) do not exist. They observe that a native Fulani speaker who is conversant with Hausa may substitute /s/ and /ʃ/ in place of /ts/ and /ʧ/ just as would a native speaker of the Bauchi dialect.

Haɗejiyanci is their seventh major dialect. This dialect according to them should not have been on the list but for the fact that certain lexical items are peculiarly pronounced and therefore they deem it necessary to call it a variety in itself. For example, takalmi 'shoe' is pronounced [ta:kawni:] in Haɗejiya.

While the authors have provided some valuable phonological information in the second part of the book, it is very hard to be convinced that part

one of the book contains words which are really archaic. Rather the authors seem to ignore the fact that the degree of borrowing, depends entirely upon the subject-matter. For instance, a writing about nuclear energy will no doubt contain more English loans than would a writing about the pilgrimage to Mecca or folk music. Furthermore, if we compare an extract from Kananci with a similar version of it from Sakkwatanci one can hardly see any difference in the lexical items employed - each dialect contains the same Arabic loans.

In addition to the author's failure to consider subject-matter they also fail to take into account the writer's educational-background. A Hausa writer who is well-versed in Islamic studies would employ a lot of Arabic loans in his literature as in the same way one who is well-versed in Western education would employ English loans.

Their classification of Hausa into classical and modern is therefore not convincing unless they want to establish some sort of dichotomy in the language showing that pre-colonial Hausa (whatever that may mean) is the classical Hausa and post-colonial Hausa is the modern Hausa. With even the above definitions of the two terms the question still remains as to the adequacy of the criteria by which they make these divisions. It is certainly not adequate to base the distinction upon the presence/absence of certain lexical items. Assuming that these divisions hold what name would they assign to pre-Islamic Hausa, and what would then be their criteria?

On the other hand one would agree with them that Sakkwato is the cultural fountain of the Hausa people in the sense that their contact with modern civilization came late and it is the home of the 'Commander of the Faithful'. But it is not true to say that Sakkwatanci is closer to Arabic and Islamic tradition than any other dialect of Hausa.

If being classical entails being pure and thus being un-influenced by Arabic and Islamic tradition then the dichotomy drawn is a religio-social one rather than linguistic.

One would expect the authors to bring forward in their arguments those linguistic features which are regarded by diachronic linguists to be reflexes of the pre-Hausa forms, for example, forms that would be the input to Klingenheben's law (1928); the use of /t/ as a feminine marker; the use of /s/ in causative sentences (cf. Bagari, 1977); or the presence of more labialized consonants in the dialect than any other dialect (Katsina dialect being an exception) since from a historical point of view merger is more likely to have happened than split. These and similar points should have been the kernel of their arguments for calling Sakkwatanci 'classical' rather than Arabic and Islamic tradition.

The authors claim that speakers of the Bauchi dialect lack /ts/ and /tʃ/. It is true that one can find, in Bauchi, some speakers of Hausa who lack /ts/ and /tʃ/ but it is not the case that the native speakers of Bauchi dialect lack these phonemes. As a matter of fact this type of Hausa is only found in some quarters in Bauchi town (e.g. Jahun and Doya) and the surrounding villages where Hausa is either a second or a third language. Their informant who hailed from Kafin-Madaki is a typical example. Kafin-Madaki is a Fulani town where Hausa is spoken as a second language.

In Bauchi town there are various Hausa speaking communities whose ancestors came and settled there, and the Hausa as spoken by the progeny of these people cannot be characterized by these features. There are Kano Hausas, Sakkwato Hausas and Zariya Hausas.[1]

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1. Unguwar Ilela is said to get its name from Ilela town in Sakkwato, Kura gets its name from Kura in Kano, Jahun from a Fulani town called Jahun in Kano.

Muhammad (undated), unlike Bello and Ahmad, recognizes six dialects of Hausa which according to him can be grouped into two major dialects, namely the Eastern and Western Hausa dialects. Eastern Hausa, according to him, is spoken in Kano, Daura, Damagaran (Zinder in Niger Republic), Zariya and Bauchi. The Western Hausa dialect is spoken in Katsina and Sakkwato (i.e. including Gobir, Zamfara, Kebbi).

This classification is similar to Bargery's classification in some way except that it merges Zariya with the Eastern Hausa, while Bargery (1934) identifies it with the Western Hausa.

As his criteria for classification the author puts forward the following points:

(i) the presence of two /r/^{S} in Eastern Hausa.

(ii) the regular correspondences between East Hausa /u/ and West Hausa /b/ in certain environments.

(iii) correspondences of East Hausa /f/ with West Hausa /h/.

(iv) differences in some of the lexical items.

Looking at the dialects individually, Muhammad observes that Kano people speak with haste and they use 'i' in place of ya as in ya ce in the 'standard' it becomes i ce in Kano meaning 'he said'. They also use /r/ as the genitive ending for practically all feminine nouns. He includes a few lexical items peculiar to Kano, e.g. kar 'don't'.

In the Zariya dialect he remarks that there 'is a conspicuous disregard for gender'. Contrary to Bello and Ahmad (1970), he concedes that there is the concept of gender but the people according to him, do not adhere 'to any strict form as far as the gender is concerned.' The features he also observes peculiar to Zariya are (i) that /a/ corresponds to /u/ in Kano in certain words such as anguwa 'quarters'

in Zariya, which in Kano is unguwa, and the difference in pronunciation of certain words such as ƙane 'younger brother' in Kano, which is pronounced ƙani in Zariya, and ƙarshe 'the end' in Kano, which is pronounced ƙarke in Zariya.

The remaining Daura, Katsina, Sakkwato and Bauchi dialects have the same distinguishing features as those observed by Bello and Ahmad (1970) except that Muhammad observes one additional feature peculiar to the dialect of Bauchi which is in the structure of sentences containing both direct and indirect objects. For example:

Bauchi:

Halima ta yi keta wa yaro

Halima she did cruelty to boy

Halima was cruel to a boy.

Other dialects:

Halima ta yi wa yaro keta

Halima she did to boy cruelty.

One observes that in Bauchi the direct object preceds the indirect object, whereas in the other dialects it follows the indirect object. However, Muhammad misses one important fact about the use of dative particle i.e. the use of wa before a noun object is peculiar to Kano people alone. All other dialects of Hausa employ ma before a noun object or pronoun object (cf. Kraft and Kirk-Greene, 1973:74; Skinner, 1977:79).

Dogo (1977) compares two dialects of Hausa, namely Kananci and Sakkwatanci. In his introduction he shows that Hausa dialects could be grouped into three main categories viz. East Hausa, West Hausa and Pidgin Hausa. He considers Pidgin Hausa as a type of Hausa spoken in

the middle belt areas (i.e. Southern Zariya and Southern Bauchi). His East and West Hausa is similar to that of Muhammad. He tries to compare certain grammatical features of the two dialects. He also lists certain words which are common to both dialects and those which are found in one dialect but absent from the other. He does not explain how he establishes the three dialects but he makes it clear that the terms are simply cover terms.

Conclusion:

From the various contributions made to the study of the Hausa language discussed above two important things have been revealed: (i) that despite the fact that a varied number of Hausa dialects have been recognized the authors generally view Hausa as being composed of two distinct mutually-intelligible dialects (ii) no comprehensive work has so far been done on the varieties of Hausa as spoken in Nigeria. It is observed that of the very few who chose to contribute to this area of linguistics some did so as a by-product of some other end, while others restricted themselves to an easily digested account for popular consumption.

Despite the contributors' limitations (as their approaches suggest) their contributions remain a great asset to the study of Hausa in that they have brought to light a very important area of language study which would otherwise have been neglected but which remains an on-going challenge to linguists.

1.2.0 The Method of description:

The description presented here is based on the investigator's intuitions about the language, together with a seven-month period of

field-work. During this survey the following areas were covered: Kano, Sakkwato, Katsina, Daura, Zariya and Bauchi.

The aspects of the language discussed are the phonology and morphology. While syntax is not taken up in any detail, tone is not even discussed. In the case of tone the reason is that tonal differences do not enter into dialectal differences either generally or in any systematic way. Furthermore there is as yet no agreed way within generative phonology for the treatment of tone. And indeed it is too vast a subject for one thesis to handle adequately. The dialect variation is described within the framework of the theory of generative phonology as proposed by Chomsky and Halle (1968), with some modifications.

1.2.1 Dialect description:

There are basically two approaches to dialect description, namely diachronic and synchronic approaches. The diachronic approach is the traditional one, while the synchronic approach is the more recent one. The synchronic approach may be further subdivided into structuralist and generative types of approach.

1.2.1.1 The diachronic approach: This approach aims at collecting elements of a dialect in order to compare them with elements in the same dialect at some earlier time. Here the researcher's main concern is the chronological development of features, e.g. the subsequent development of Middle English Ō, in one dialect (cf. Wakelin, 1972:3).

1.2.1.2 The synchronic approach: The treatment here concentrates on pure description of a dialect without making any reference to historical

factors, but paying special attention to the interrelationship of individual features within the systems of the dialect under investigation, in other words it compares systems that are partially different in order to analyze the synchronic consequences of these differences within the similarities. This new approach to dialect study is an attempt to solve many problems that beset historical dialectology. Such an approach is the goal both of structuralist and generativists dialectologists.

1.2.1.2.1 Structural Dialectology: This is a descriptive approach to dialect comparison, which aims at accounting for the differences of inventory and distribution within a framework known as a 'diasystem'. This envisages a technique for comparing any systems which have partial similarities (cf. Weinreich, 1954).[1]

1.2.1.2.2 Generative Dialectology: This is another synchronic approach to the study of dialect differences set within the theory of generative phonology as proposed in SPE. A generative grammar, according to SPE, would have syntactic, semantic and phonological components. The job of the phonological component is to specify the phonetic form of sentences generated by the syntactic rules. It does this by means of rules applying in a stated order to the items, which are represented in their underlying forms. An underlying form is composed of abstract segments referred to as 'systematic phonemes' and these are set up to express the relationship between different phonemes found in alternants of a morpheme, such as /eɪ/ and /a/ in, for example, grateful - gratitude, or /i:/ and /e/ in, for example,

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1. For further readings on this approach see Moulton (1960) and Cochrane (1959).

serene - serenity. Thus an underlying form might be posited as, say, /divin/ and a relevant rule will account for the /i/ changing to [aɪ], perhaps of the form

/i/ → [aɪ] / - C# etc.

The above rule asserts that the underlying /i/ surfaces as [aɪ] in the environment of a consonant occurring before a word boundary, e.g. /divin/ [dɪvaɪn] (and also in certain other environments which will not be discussed here). According to this theory the diphthongization rule is responsible for /i/ becoming [aɪ], while a 'vowel laxing' rule accounts for the /i/ surfacing as [ɪ] in [dɪvɪnɪtɪ], (cf. SPE:163-86).

However, generative dialectologists maintain that since generative phonology accounts for surface forms which are different within one variety, but with one single underlying form, it could also account for the differences between dialects. Thus they assume that since dialects are forms of 'an originally more or less uniform language it is possible to show that they can for the most part be described in terms of a common set of underlying forms; variation is introduced by the phonological processes which operate on these forms', (Newton, 1972: 5). By this we are claiming that these forms and the rules to derive the dialects under investigation 'have a certain 'reality' in that they are part of the native speaker's competence, his intuitive knowledge of the language, and it is this 'knowledge' of the common underlying forms and the rules which enables him to understand speakers of other dialects', (cf. Petyt, 1980:183-84).

Since the present discussion of Hausa dialects is going to be taken up within this framework - i.e. the framework of the theory of generative

phonology - we shall have to face a number of objections raised against this approach. One of these concerns the question of what exactly underlying forms should look like and how they should be arrived at (cf. Chambers and Trudgill, 1980:47).

The earlier assumption was that it would be possible to take forms from one dialect as basic and derive all other dialects from it as O'Neil (1963) did in analyzing the dialects of modern Faroese (and, of course, Brown, 1972). Since it has been observed that choosing underlying forms or segments from just one variety is sometimes arbitrary and presents problems it was thought best to regard the underlying forms as forms which were more abstract. Thomas (1967:179-203), for example, argues that underlying forms have to be more - abstract.

The questions we would address ourselves to are how abstract should a representation be and at what level should we differentiate our synchronic, but pan-dialectal underlying forms from diachronic reconstructed forms. Kiparsky (1968a) attempts to place a constraint on the abstractness of underlying forms by distinguishing between what he calls 'contextual' and 'absolute' neutralization. Contextual neutralization, according to him, is a kind of situation in which certain segments are neutralized as a consequence of their environments, for example, German /t/ and /d/ are neutralized word - (syllable-) finally. Absolute neutralization is a kind of situation where certain segmental oppositions are neutralized without making any appeal to their environments, i.e. the opposition is not brought about on account of the context. In this situation the underlying contrast never appears directly in the phonetic form. These segments are accounted for by a rule of the form A→ [B], where there are other instances of [B] coming from another underlying source. Kiparsky argues that any rule which creates context-free

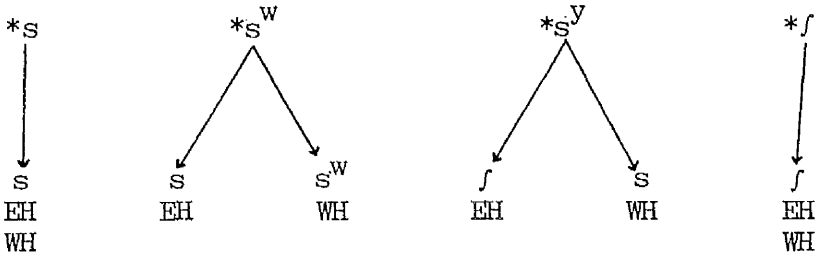
neutralizations should be rejected. Kiparsky's concept of absolute neutralization has been attacked by some other linguists (cf. Kisseberth, 1969; Hyman, 1970a) who argue in favour of certain abstract analyses. Their arguments run along the line that Kiparky's distinction is too strong in that 'it excludes a rather large number of well-motivated analyses', (Kenstowicz and Kisseberth, 1979:219). On the whole the question of how abstract phonology is remains a matter of debate among linguists.

In the present analysis of Hausa dialect variation we do attempt to place a constraint on the level of abstractness and draw a line between what is synchronic and what is not. This has been arrived at by imposing a condition on the UR. This is stated as follows:

> That the underlying segment posited must appear in at least one of the dialects.

This means that dialect variation is treated here like alternation in a synchronic account of one dialect. This principle can be seen to operate when we examine the Hausa labialized segments (some of which occur only in one dialect) and all the palatals (which occur in both dialects). Despite the fact that both the palatals and nonlabialized alveolars surface in both dialects these segments exhibit what Ivic (1965) refers to as 'irreversible' behaviour, for example, while $[ʃ]_{EH}$: [ʃ]WH; $[s]_{EH}$: [s]WH, we find also that EH[ʃ] corresponds to WH[s]. This means that [ʃ] and [s] in EH could not be replaced by [ʃ] and [s] in all instances where they occur in WH. Ivic (op.cit. p.408) maintains that correspondences like these 'are signals that a diachronic process has taken place which has decreased the phonemic inventory (or, in the case of context-restricted rules, the distribution of the same phone [s]). He goes on to suggest that the only way to

account for this situation within generative dialectology is to use a method similar to that of diachronic reconstructions. Following Ivic we would account for the above irreversibility as follows:



What this means is that we are hypothesizing that the starred phonemes existed in Pre-Hausa, but that later the palatalized ones merged with the palatals, while the labialized ones simply delabialized and merged with their plain counterparts in one dialect, e.g. *s^w merged with [s] in EH, though it is retained in WH; *s^y merged with [ʃ] in EH and in WH it merged with [s], but it is not retained in either of the dialects. Consider the following examples:

EH	WH	
[sa:ta:]	[sa:ta:]	'theft'
[sa:ɸe:]	[s^wa:he:]	'morning'
[mʁʃʁʃ:ʁɾa:]	[mʁsʁs:ʁɾa:]	'fever, cold.

If we were undertaking a synchronic study of just EH Kiparsky's 'absolute neutralization' would have to be recognized with regard to *s^w because a [s^w] never appears in this dialect. But since we are also including a number of dialects where a [s^w] does emerge it seems plausible to treat the occurrences like alternation in a single dialect. In the case of *sy it never surfaces in any dialect, hence it violates the principle upon which the present theoretical approach is based. Moreover, forms which exhibit irreversible behaviour have to be entered in the lexicon, just like loan-forms.

While other generative dialectologists rely upon historical sources to establish the underlying segments (cf. Newton, 1972) or take forms from one dialect from which other dialects can be derived (cf. Brown, 1972), the present description cannot rely upon historical sources and nor does it take forms from one dialect and derive others from it. Rather our underlying forms are abstract, though they may appear to be less abstract in some varieties than in others. Whichever method one adopts to establish the underlying forms a claim is made that 'a generative treatment of dialect differences will formalize the essential fact about dialects: that they have much in common but some differences' (Petyt, 1980:180). And these differences are brought about as a consequence 'of historical changes acting on an originally uniform language', (Newton, 1972:1).

CHAPTER 2

2.0 HOW MANY DIALECTS ARE THERE?

2.1 Introduction

In order to establish the number of dialects of any given language dialectologists traditionally devised a method for delimiting a boundary between two regions which differ with respect to some linguistic feature (for example the use of a particular lexical item, the pronunciation of a particular word, etc.). These boundaries are referred to as 'isoglosses'. Each isogloss represents a single linguistic difference feature. When many isoglosses coincide they become a 'bundle'. This bundle separates one dialect which is homogeneous with respect to certain linguistic features from another dialect. A bundle may group together a number of dialects sharing many features in common, though a pattern of criss-crossing isoglosses often emerges cutting right across the bundle as a result of which each dialect becomes unique or with respect to that feature belongs to some subdialect. This state of affairs makes it rather difficult to decide on which isoglosses or bundles should be accorded more significance. This might be the case with Hausa as spoken in Nigeria. We saw in the preceding chapter that the Hausa spoken in that region had been classified into varying numbers of dialects ranging from two to seven. Though these classifications of the Hausa dialects were not based on any strict method yet one may not be wrong in assuming that the reason for the differences depends on the criteria employed for classification.

2.1.0 Regional Variations: In the present discussion of Hausa dialects we attempt to classify Hausa into its major dialects restricting ourselves to our selected priorities, i.e. the phonological and morphological features. We shall use the term 'regional variation' for the difference, and 'regional variant' for each actual realization of the variation.

2.1.1 Regional Variation 1:

In some parts of the Hausa-speaking area [h^{w}] and [h] are found in certain words which in other areas people pronounce with [Φ].

Examples:

Regional Variant 1a	Regional Variant 1b	Gloss
[Φɐɾi:]	[h^{w}ɐɾi:]	white
[Φa:ta:]	[h^{w}a:ta:]	skin
[Φa:ɗi:]	[h^{w}a:ɗi:]	width
[Φɪtɪla:]	[hɪtɪla:]	lamp
[tɐΦɪja:]	[tɐhɪja:]	walking, travelling
[Φi:to:]	[hi:to:]	whistle
[hɐsk^{j}e:]	[hɐsk^{j}e:]	light
[hɐwa:]	[hɐwa:]	climb, mount, ride
[hu:tu:]	[hu:tu:]	rest

2.1.2 Regional Variation 2:

Closely linked to the preceding difference is the fact that [h^{j}] in some areas corresponds to [$Φ^{j}$] in others, as exemplified below:

Regional Variant 2a	Regional Variant 2b	
[$Φ^{j}$a:ɗa:]	[h^{j}a:ɗa:]	flogging
[$Φ^{j}$a:tʃe:]	[h^{j}a:tʃe:]	blowing of the nose
[$Φ^{j}$ɐwtʃe:]	[h^{j}ɐwtʃe:]	snatch

2.1.3 Regional Variation 3:

In certain areas [t^W] and [t] are found in some words which in other parts are pronounced only with [t]. Consider the following examples:

Regional Variant 3a	Regional Variant 3b	Gloss
[ta:ɾi:]	[t^Wa:ɾi:]	cough
[ta:le:]	[t^Wa:le:]	stripping of rind
[tɐŋg^{j}e:]	[t^Wɐŋg^{j}e:]	tethering oxen
[ta:ɾo:]	[ta:ɾo:]	gathering of people
[ta:kɐlmi:]	[ta:kɐlmi:]	shoe/shoes
[ta:ba:]	[ta:ba:]	cigarettes

2.1.4 Regional Variation 4:

Certain words containing [d] and [d^W] in some parts are pronounced only with [d] in others as indicated below:

Regional Variant 4a	Regional Variant 4b	Gloss
[da:ɗe:]	[d^Wa:ɗe:]	close up
[dɐrdʒe:]	[d^Wɐldʒe:]	slither
[dɐɾe:]	[dɐɾe:]	night
[da:wa:]	[da:wa:]	corn

2.1.5 Regional Variation 5:

Another difference is that some speakers have phonological contrasts between [ɗ]:[$ɗ^W$], others do not. Consider the following examples:

Regional Variant 1

Regional Variant 5a	Regional Variant 5b	Gloss
[ɗa:tʃi:]	[$ɗ^W$a:tʃi:]	bitterness
[ɗa:ta:]	[$ɗ^W$a:ta:]	garden-egg
[ɗa:tɐn:ɪja:]	[$ɗ^W$a:tɐn:a:]	a type of grass

[ɗa:kʲi:]	[ɗà:kʲi:]	room
[ɗa:ɾi:]	[ɗà:ri:]	cold
[ɗɐwka:]	[ɗɐwka:]	to take, carry

2.1.6 Regional Variation 6:

A further difference has been observed in the pronunciation of words containing [s] and [sᵂ] in some parts which in other areas are pronounced only with [s]. e.g.:

Regional Variant 6a	Regional Variant 6b	Gloss
[sa:Φe:]	[sᵂa:he:]	morning
[sa:ɓo:]	[sᵂa:ɓo:]	sin
[sa:kʲ'i:]	[sᵂa:kʲ'i:]	a type of cloth
[sa:bo:]	[sa:bo:]	new
[sɐɾkʲi:]	[sɐɾkʲi:]	king, chief, emir
[sɐwkʲ'i:]	[sɐwkʲ'i:]	simplicity, head

2.1.7 Regional Variation 7:

A further difference has been observed in the pronunciation of words containing [z] and [zᵂ] in some parts which in other areas are pronounced only with [s]. e.g.:

Regional Variant 7a	Regional Variant 7b	Gloss
[za:ɾi:]	[zᵂa:ɾi:]	undertaking something beyond one's ability
[za:ɾe:]	[zᵂa:ɾe:]	draw, pull
[za:gʲe:]	[zᵂa:gʲe:]	erode
[za:kʲi:]	[za:kʲ'i:]	sweetness
[za:kʲi:]	[za:kʲi:]	lion
[ka:za:]	[ka:za:]	hen

2.1.8 Regional Variation 8:

Words containing [l^{w}] and [l] in some areas are pronounced only with [l] in others as exemplified below:

Regional Variant 8a	Regional Variant 8b	Gloss
[la:ts'a:]	[l^{w}a:ts'a:]	squeeze
[la:ts'i:]	[l^{w}a:tʃ'i:]	softness
[la:da:]	[la:da:]	reward
[lu:dɐji:]	[lʊd:ɐj]	ladle
[le:mo:]	[le:mu:]	orange

2.1.9 Regional Variation 9:

While [ts'] and [tʃ'] have complementary distributions in the pronunciation of some people, it is only [ts'] that one hears in other areas. Consider the following examples:

Regional Variant 9a	Regional Variant 9b	Gloss
[ts'i:la:]	[tʃ'i:la:]	tapeworm
[ts'e:g^{w}ʊmi:]	[tʃ'e:g^{w}ʊmi:]	gossip
[mɐts'ɪja:tʃi:]	[mɐtʃ'ɪja:tʃi:]	destitute person
[ts'a:mɪja:]	[ts'a:mɪja:]	tamarind
[ts'o:ho:]	[ts'o:ho:]	old
[ts'ʊm:a:]	[ts'ʊm:a:]	rags

2.1.10 Regional Variation 10:

[n^{w}] and [n] are heard in some areas, while in other places words containing these sounds are pronounced only with [n]. Examples:

Regional Variant 10a	Regional Variant 10b	Gloss
[na:na:]	[n^{w}a:na:]	throw to the ground
[nɐs]	[n^{w}ɐs]	sound made by a heavy thing
[na:ma:]	[na:ma:]	meat

[bɐna:]	[bɛna:]	this year

2.1.11 Regional Variation 11:

It is one of the characteristic features of people from certain areas to pronounce [ʔ^{j}] where people from other areas have [ɗɪj] as exemplified below:

Regional Variant 11a	Regional Variant 11b	Gloss
[ʔ^{j}a:]	[ɗɪja:]	daughter
[ʔ^{j}ɐ̀ntʃi:]	[ɗɪjɐwtʃi:]	freedom

2.1.12 Regional Variation 12:

In some parts of Hausaland [w] is found in certain words which in other areas are pronounced with [b~m], [b], [m] or [w].

Examples:

Regional Variant 12a	Regional Variant 12b	Gloss
[sɐwɽo:]	[sɛmɽo:]~[sɐbɽo:]	mosquito
[kɐwɽi:]	[kɛmɽi:]~[kɐbɽi:]	thickness
[ɗɐwɽi:]	[ɗɛmɽi:]~[ɗɐbɽi:]	tie
[g^{w}ɐwɽo:]	[g^{w}ɛmɽo:]~[g^{w}ɐbɽo:]	bachelor
[tɐwɽe:]	[tɛmɽe:]~[tɐbɽe:]	billy-goat
[zɐwɽe:]	[zɛmɽe:]	porch
[tɐwna:]	[tɛmna:]	masticate, chew
[tɐwɽa:ɽo:]	[tɛmɽa:ɽo:]	star
[k'ɐwna:]	[k'ɛmna:]	love
[k$^{j'}$ɐ wɽe:]	[k$^{j'}$ɐ mɽe:]	door, insect
[tɐwʃi:]	[tɐbʃi:]	softness
[ʔɐwk^{j}i:]	[ʔɐbk^{j}i:]	ability to increase
[ɗɐwʃe:]	[ɗɐbʃe:]	a kind of kolanut
[hɐwʃi:]	[hɐbʃi:]	barking

[lɐwsuɽ]	[lɐbsuɽ]	garden cress
[ɓɐwɽe:]	[ɓɐwɽe:]	fig-tree
[ɓɐwna:]	[ɓɐwna:]	buffalo
[bɐwta:]	[bɐwta:]	slavery
[dɐwɗa:]	[dɐwɗa:]	filth
[ɗɐwka:]	[ɗɐwka:]	remove, carry
[hɐwka:]	[hɐwka:]	madness
[hɐwla:]	[hɐwla:]	descendants
[hɐwni:]	[hɐwni:]	left
[hɐwɽe:]	[hɐwɽe:]	tusk, tooth
[hɐwsa:]	[hɐwsa:]	Hausa
[hɐwja:]	[hɐwja:]	a score, hoe

2.1.13 Regional Variation 13:

In the speech of one particular area [j] is heard in certain words in place of [w] in the other areas; as in the following:

Regional Variant 13a	Regional Variant 13b	Gloss
[wʊni:]	[jʊni:]	day, to pass the day
[wʊk'a:]	[jʊk'a:]	knife
[wo:Φi:]	[jo:Φi:]	wastrel
[wa:so:so:]	[ja:so:so]	scrambling
[wo:ho:]	[jo:ho:]	exclamation
[ts'ʊwe:]	[ts'ʊje:]	testes
[kʲi:wo:]	[kʲi:jo:]	pasturing
[tʃi:wo:]	[tʃi:jo:]	illness
Cf.		
[wɐta:]	[wɐta:]	moon, month
[wɐndo:]	[wɐndo:]	trousers
[wʊta:]	[wʊta:]	fire

[jɐwa:]	[jɐwa:]	abundance
[ja:ɾa:]	[ja:ɾa:]	children
[ja:dʒi:]	[ja:dʒi:]	spices

2.1.14 Regional Variation 14:

Certain words contain [r] in the speech of some people where in other areas people pronounce them with [l]. Consider the following examples:

Regional Variant 14a	Regional Variant 14b	Gloss
[hɐrʃe:]	[hɐlʃe:]	tongue
[ɸɐrka:]	[h^{w}ɐlka:]	awake
[gɐrma:]	[gɐlma:]	plough
[kɐrkɐʃi:]	[kɐlkɐʃi:]	a kind of a plant
[mɐɸɐrk^{j}i:]	[mɐh^{w}ɐlk^{j}i:]	dream
[ɸɐrk^{j}e:]	[h^{w}ɐlk^{j}e:]	stab, tear off
[hɐrbi:]	[hɐlbi:]	shooting
Cf. [la:da:]	[la:da:]	reward
[lu:dɐji:]	[lʊd:ɐj]	ladle
[le:mo:]	[le:mu:]	orange

2.1.15 Regional Variation 15:

Another difference is also observed in the pronunciation of certain words which contain [dz] in one area, but [z] in the others. e.g.:

Regional Variant 15a	Regional Variant 15b	Gloss
[dʒa:ɾʊmi:]	[za:ɾʊmi:]	brave
[dʒɐk^{w}ʊmi:]	[zɐk^{w}ʊmi:]	a small bag
[dʒi:za:]	[zi:za:]	get rid of

Cf.	[za:k^{j}i:]	[za:k^{j}i:]	lion
	[za:ɸi:]	[za:hi:]	heat
	[ka:za:]	[ka:za:]	hen
	[dʒɪja:]	[dʒɪja:]	yesterday
	[dʒɪni:]	[dʒɪni:]	blood
	[dʒɪk^{j}i:]	[dʒɪk^{j}i:]	body

2.1.16 Regional Variation 16:

[ʃ] in some areas corresponds to [s] in certain words in others. e.g.

Regional Variant 16a	Regional Variant 16b	
[ʃɐg^{j}ɪda:]	[sɐg^{j}ɪda:]	askew
[ʃɐg^{w}ɐβa:]	[sɐg^{w}ɐβa:]	spoil (e.g. a child)
[ʃa:ʃi:]	[sa:ʃi:]	portion, part
Cf. [ʃa:ɾa:]	[ʃa:ɾa:]	sweeping
[ʃe:kɐɽa:]	[ʃe:kɐɽa:]	year
[ʃa:]	[ʃa:]	to drink
[sa:bo:]	[sa:bo:]	new
[sa:ta:]	[sa:ta:]	theft
[sɐwɽɐji:]	[sɐmɽɐji:]	youth

2.1.17 Regional Variation 17:

Speakers in some areas pronounce [tʃ] in certain words in place of [t] in others. e.g.:

Regional Variant 17a	Regional Variant 17b	
[tʃɪle:]	[tɪle:]	cigarette end
[tʃɪɽza:]	[tɪɾza:]	scrap ground with foot
[kɐjtʃo:]	[kɐjto:]	alas!
[tʃo:g^{j}e:]	[to:g^{j}e:]	exclude, make exception

Cf.	[tʃɪka:]	[tʃɪka:]	fill
	[tʃu:ta:]	[tʃu:ta:]	illness, cheat
	[hɐn̥tʃi:]	[hɐn̥tʃi:]	nose
	[tɐΦɪja:]	[tɐhɪja:]	travelling, walking
	[ta:ɾo:]	[ta:ɾo:]	gathering of people
	[tɐmbɐja:]	[tɐmbɐja:]	question

2.1.18 Regional Variation 18:

In the speech of some speakers of certain areas where [ŋ] is heard in certain words [m] or [ŋ] is heard in others. However, speakers on both areas pronounce [m] in certain other words, e.g.

Regional Variant 18a	Regional Variant 18b	
[dɐŋk'a:]	[dɐmk'a:]	grip
[dɐnʃi:]	[dɐmʃi:]	moisture
[dɐnts'e:]	[dɐntʃ'e:]	arm (above elbow)
[dɪɲja:]	[dʊmja:]	goose
[gɐn̥dʒi:]	[gɐndʒi:]	guttapercha tree
[gɐnza:kʲi:]	[gɐmza:kʲi:]	morning star
[gʲɪnsa:]	[gʲɪmsa:]	surfeit
[hɐntsa:]	[hɐmts'a:]	udder
[hɐnzɐɾi:]	[hɐmzɐɾi:]	haste, speed
[ɾɐntse:]	[ɾɐntʃ'e:]	swear
[ɾɐŋkʷo:]	[ɾɐmkʷo:]	retaliate
[k'ɐndɐɾa:]	[k'ɐndɐɾa:]	become stiff
[kɐŋgʷo:]	[kɐŋgʷo:]	an uninhabitated building
[kɐŋwa:]	[kɐŋwa:]	potash
[hɐŋkɐli:]	[hɐŋkɐli:]	sense
[dɐmbu:]	[dɐmbu:]	a type of food

[dʊmbʊla:]	[dʊmbʊla:]	take a handful
[hɐm:a:]	[hɐm:a:]	yawning
[k^{w}ʊmbʊɾi:]	[k^{w}ʊmbʊɾi:]	swelling

2.1.19 Regional Variation 19:

Certain words are pronounced with tense vowels in some areas, in others with lax vowels, though when this is the case the following consonant will be geminated. This is heard within basic lexical items and in certain plural forms. e.g.:

Regional Variant 19a	Regional Variant 19b	
[ka:sʊwa:]	[kɐs:ʊwa:]	market
[k^{w}a:ɗo:]	[k^{w}ɐɗ:o:]	frog
[dʒa:k^{j}i:]	[dʒɐk^{j}:i:]	donkey
[dʊndu:nɪja:]	[dʊndʊn:ɪja:]	heel
[k$^{w'}$ʊɾu:tʃɪja:]	[k$^{w'}$ʊɾʊtʃ:ɪja:]	youthfulness
[lu:dɐji:]	[lʊd:ɐj]	ladle
[dɐwa:k^{j}i:]	[dɐwɐk^{j}:i:]	horses
[g^{w}ʊma:ka:]	[g^{w}ʊmɐk:a:]	idols

2.1.20 Regional Variation 20:

The occurrence of gemination of certain segments can also be heard in a number of plural forms in the speech of some people where in others only a lax vowel is heard followed by a single consonant. This process is seen in a certain plural marking suffix where [ʊka:] corresponds to [ʊk:a:] as exemplified below:

Regional Variant 20a		Regional Variant 20b		Gloss
[ʔɐj:ʊka:] pl.of	[ʔɐjk^{j}i:]	[ʔɐj:ʊk:a:]		work
[ɾa:jʊka:] "	[ɾa:ji:]	[ɾa:jʊk:a:]		life
[zɐwɾʊka:] "	[zɐwɾe:]	[zɐmɾʊk:a:] pl.of	[zɐmɾe:]	porch

[ts'ɐwnʊka:]	pl.of	[ts'ɐwni:]	[ts'ɐwnʊk:a:]	mountain
[tʃɪnʊka:]	"	[tʃɪnɪk^{j}i:]	[tʃɪnʊk:a:]	trade
[kɐɾnʊka:]	"	[kɐɾe:]	[kɐɾnʊk:a:][1]	dog

2.1.21 Regional Variation 21:

Yet another difference exists in the matter of plural marking suffixes. Here [ɐj:e:], heard in one area, corresponds to [ɐj] in others. e.g.:

Regional Variant 21a	Regional Variant 21b	Gloss
[mɐsɐl:a:tɐj]	[mɐsɐl:a:tɐj:e:]	mosque
[ʔɐlk'a:lɐj]	[ʔɐlk'a:lɐj:e:]	judge
[mɐdu:bɐj]	[mɐdu:bɐj:e:]	mirror
[mɐbu:ɗɐj]	[mɐbu:ɗɐj:e:]	key
[mɐk^{W}ʊl:ɐj]	[mɐk^{W}ʊl:ɐj:e:]	key
[mɐΦɐrkɐj]	[mɐh^{W}ɐlkɐj:e:]	dream
[mɐsɐwkɐj]	[mɐsɐbkɐj:e:]	lodge

2.1.22 Regional Variation 22:

Another characteristic difference emerges in the matter of plural formation. A certain area has a plural formative [ɪn:e:] which is completely absent from others. e.g.:

Regional Variant 22a	Regional Variant 22b	Gloss
[mɐkɐɾɐntu:]	[mɐkɐɾɐntɪn:e:]	schools
[tɐkɐrdu:]	[tɐkɐɾdɪn:e:]	papers
[bɐɾa:de:]	[bɐɾa:dɪn:e:]	horsemen
[gɐhʊka:]	[gɐh^{W}ɐk:^{j}ɪn:e:]	satchels
[mɐʃɐʃ:ɐɾu:]	[mɐsɐs:ɐɾɪn:e:]	fever

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1. This word has several plural forms such as [kɐɾnɐw], [kɐɾnʊka:] [kɐɾnɐj].

[ɸɐɾɐntɐj]	[h^{w}ɐɾɐntɪn:e:][1]	plates
[ʔɐg^{w}o:gɐj]	[ʔɐg^{w}o:g^{j}ɪn:e:][1]	clocks, watches

2.1.23 Regional Variation 23:

The difference observed here is contained in the nominoadjectives. This is a class of nouns in Hausa which are derived from cognate masculine forms (cf. Taylor, 1923:17; Newman, 1979:197-226). They include patronymics (i.e. nouns indicating the ethnic designation of persons) as well as other types of derived nouns. In certain areas all masculine forms of this category ending in the vowel [e:] have corresponding derived feminine forms ending in an [ɪja:] suffix, while those ending in [o:] or [u:] have feminine derivatives ending in an [ʊwa:] suffix.

These feminine formatives [ɪja:] and [ʊwa:] are pronounced with [a:] and [ɲja:] in other areas. There are some exceptions to these generalizations in particular where masculine forms end in [i:] and occasionally other forms ending in [u:] or [o:].

Here are a few examples of each case:

Regional variant 23a	Regional Variant 23b	Gloss
[bɐhɐwʃɪja:]	[bɐhɐwsa:]	Hausa-man
[bɐkɐts'ɪnɪja:]	[bɐkɐtʃ'ɪna:]	Katsina-man
[bɐsɐk^{w}:ɐtʃɪja:]	[bɐsɐk^{w}:ɐta:]	Sakkwato-man
[bɐtu:rɪja:]	[bɐtu:ra:]	English-man
[to:jɐj:e:]	[to:jɐj:a:]	fried one, burnt one
[so:jɐj:e:]	[so:jɐj:a:]	fried one
[bʊgɐg^{j}:e:]	[bʊgɐg:a:]	beaten/drunken one
[bʊsɐʃ:e:]	[bʊsɐs:a:]	dried one

1. These forms have an alternative formative [ɐj:e:].

[mu:g^{W}uwa:]	[mʊg^{W}ʊŋja:]	evil/wicked one
[hu:ts'ʊwa:]	[hu:ts'ɐŋja:]	hot-tempered one
[k'a:tʊwa:]	[k'a:tɐŋja:]	big one
[bɐg^{W}o:bɪɽa:]	[bɐg^{W}o:bɪɽa:]	Gobir woman
[ʔɐlgɐsa:]	[ʔɐlgɐsa:]	maroon one
[bɐk'a:]	[bɐk'a:]	black one
[ΦɐɽaI]	[h^{W}ɐɽa:]	white one
[do:g^{W}ʊwa:]	[do:g^{W}ʊwa:]	tall one
[g^{W}ʊntʊwa:]	[g^{W}ʊntʊwa:]	short one
[ts'o:hʊwa:]	[ts'o:hʊwa:]	old one
[ba:k$^{W'}$ʊwa:]	[ba:k'ʊwa:]	strange one

2.1.24 Regional Variation 24:

A further difference has emerged in another type of nomino-adjective which is derived from nouns of sensation. This is another class of forms which are formed from abstract nouns denoting sensations of feeling, smelling, tasting and size. These forms are introduced by a particle [mɐj] 'possessor of ... ', characterized by ... ' the function of which is to convert nominals, nominal and verbal phrases into modifiers (cf. Kraft and Kirk-Greene, 1973:131). Galadanci (1969) calls this form an 'adjectival complex'. There is no gender distinction, for we could hear both yaro mai kyau [ja:ɽo:mɐjk^{j}ɐw] 'a handsome boy' and yarinya mai kyau [ja:ɽɪnja:mɐjk^{j}ɐw] 'a beautiful girl'.

While all speakers of Hausa have [mɐj] forms and they have the same functions (i.e. as post-modifying elements in noun phrases and as predicates), in the speech of certain people from a particular area this class of forms has an additional formation involving reduplication and suffixation of [a:]. This formation is absent in some areas. Consider the following examples:

Regional Variant 24a	Regional Variant 24b	Gloss
[mɐjnɐwji:]	[mɐjnɐwji:]	heavy one
~[nɐn:ɐwja:]	———	
[mɐjkɐjΦi:]	[mɐjkɐjhi:]	sharp one
~[kɐk:ɐjΦa:]	———	
[mɐjts'a:mi:]	[mɐjtsa:mi:]	sour one
~[tsɐts':a:ma:]	———	
[mɐjkɐwɽi:]	[mɐjkɐwɽi:]	thick one
~[kɐk:ɐwɽa:]	———	
[mɐjΦa:ɗi:]	[mɐjh^{w}a:ɗi:]	wide one
~[ΦɐΦ:a:ɗa:]	———	
[mɐjkɐwʃi:]	[mɐjkɐwʃi:]	coarse one
~[kɐk:ɐwsa:]	———	
[mɐjtɐwɽi:]	[mɐjtɐwɽi:]	tough one
~[tɐt:ɐwɽa:]	———	

2.1.25 Regional Variation 25:

Another difference concerns the use of the copula. In the speech of some people the copula is sensitive to the gender of the subject, while it is not so in the speech of others. In the areas where a copula is sensitive to the gender of the subject differences have emerged. Further variation occurs in that while some speakers have [ne:] and [tʃe:] for masculine and feminine forms respectively, others pronounced them as [na:] and [ta:]. Consider the following examples:

Regional Variant 25a	Regional Variant 25b	Gloss
[sɐɽk^{j}i:ne:]	[sɐɽk^{j}i:na:]	it's a king
[ja:ɽo:ne:]	[ja:ɽo:na:]	it's a boy
[ja:ɽa:ne:]	[ja:ɽa:na:]	it's children
[gɐɽi:ne:]	[gɐɽi:na:]	it's a town

[mɐkɐɾɐnta:tʃe:]	[mɐkɐɾɐnta:ta:]	it's a school
[ja:ɾɪɲja:tʃe:]	[ja:ɾɪɲja:ta:]	it's a girl

Regional Variant 25c

[sɐrkʲi:ne:]	it's a king
[ja:ɾo:ne:]	it's a boy
[ja:ɾa:ne:]	it's children
[gɐɾi:ne:]	it's a town
[mɐkɐɾɐnta:ne:]	it's a school
[ja:ɾɪɲja:ne:]	it's a girl

2.1.26 Regional Variation 26:

Yet again when the copula marking the masculine gender is attached to one of the pronouns ni [ni:] 'I', mu [mu:] 'we', shi [ʃi:] 'he' and su [su:] 'they' in a reply to a question 'who did ... ?' (where the pronouns are the focalized elements), we hear in the speech of some people the unique forms [ja:] and [wa:] which in other areas people pronounce with [ne:]. In this type of construction the sentence complement is generally omitted, as exemplified below:

Regional Variant 26a

Question: wa ya tafi kasuwa [wa:jɐtɐΦɪka:sʊwa:]?
who he went market
'who went to the market?'

Answer: ni (ne) [ni:] or [ni:ne:] 'it's me'
shi (ne) [ʃi:] or [ʃi:ne:] 'it's him'

Question: su wane ne suka zo [sʊwa:ne:ne:sʊk zo:]?
they who are they-rel come
'who came?'

Answer: mu (ne) [mu:] or mu:ne: 'it's us'
su (ne) [su:] or su:ne: 'it's them'

Regional variant 26b

Question: wa yattahi kassuwa [wa:jɐt:ɐhɪkɐs:ʊwa :]?

who he went market

'who went to the market?'

Answer: niya [nɪja:] 'it's me'

shiya [ʃɪja:] 'it's him'

Question: su wa sunka zo [sʊwa:sʊnkɐzo:]?

they who they-rel come

'who came?'

Answer: muwa [mʊwa:] 'it's us'

suwa [sʊwa:] 'it's them'

2.1.27 Regional Variation 27:

This variation concerns reduplication. According to Kraft and Kirk-Greene (1973:176) reduplication is a process by which the first syllable of a word or the whole word is doubled. The word can be a noun, an adjective, an adverb or a verb. When it is a verb and it undergoes reduplication it acquires an intensive meaning (e.g. keep on ..., do ... time after time, do ... in succession as in bubbuga [bʊb:ʊga:] 'keep on beating' intensive of buga [bʊga:] 'to beat').

Abraham (1959:153-60) calls this 'assimilation' and subdivides it into (i) complete assimilation and (ii) partial assimilation. Complete assimilation according to him can be compulsory or optional, for example, rarrage [ɾɐr:ɐg^{j}e:] intensive of rage [ɾɐg^{j}e:] is compulsory[1].

Carnochan (1957:149-81) describes the phenomenon as 'gemination' and restricts his analysis to verbal pieces and nominal pieces. He observes that certain intensive verbs have alternative forms, e.g.

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1. Abraham's optional assimilation is not relevant for this discussion.

tattara [tɐt:ɐrɐ:] or tartara [tɐrtɐra:] intensive of tara [ta:ra:] 'to collect, to add'.

The present discussion will centre on the verbs (i.e. the intensive verbs). This is because in some parts of the Hausa-speaking area only one form of the intensive verb is heard, while in others there are two forms. Consider the following examples:

	Regional Variant 27a	Regional Variant 27b	Gloss
A.	[kɐŋka:ma:	-	
	[kɐk:a:ma:]	[kɐk:a:ma:]	catch
	[ΦɐɾΦa:ra:]	-	
	[tɐjtɐja:][ΦɐΦ:ɐra:]	[$h^{w}ɐh^{w}$:a:ra:]	start
	[tɐt:ɐja:]	[tɐt:ɐja:]	help
	[hɐwhɐwa:]	-	rise, inflate
	[hɐh:ɐwa:]	[hɐh:ɐwa:]	
	[zɐnza:na:]	-	draw
	[zɐz:a:na:]	[zɐz:a:na:]	
B.	[kɐrkɐsa:]	-	arrange in heaps
	[kɐk:ɐsa:]	[kɐk:ɐsa:]	
	[ʔɐɾʔɐza:]	-	to place
	[ʔɐʔ:ɐza:]	[ʔɐʔ:ɐza:]	
	[hɐɾhɐɗa:]	-	to join
	[hɐh:ɐɗa:]	[hɐh:ɐɗa:]	
	[mɐɾmɐts'a:]	-	move
	[mɐm:ɐts'a:]	[mɐm:ɐts'a:]	
	[gɐɾga:da:]	-	inherit
	[gɐg:a:da:]	[gɐg:a:da:]	
	[ΦɪɾΦɪta:]	-	to go out
	[ΦɪΦ:ɪta:]	hɪh:ɪta:]	

C. [sɐs:a:ta:]	[sɐs:a:ta:]	steal
[sɐs:a:da:]	[sɐa:a:da:]	
[nʊn:u:na]	[nʊn:u:na:]	point (verb)
[mɐm:ɐn:a:]	[mɐm:ɐn:a:]	stick (verb)
[lʊl:u:ɾa:]	[lʊl:u:ɾa:]	pay attention to
[sʊs:ʊɗa:]	[sʊs:ʊɗa:]	to finish the remainder
[zɐz:a:ɓa:]	[zɐz:a:ɓa:]	choose
[ɾɪɾ:ɪk'a:]	[ɾɪɾ:ɪk'a:]	hold
[ɾɐɾ:ɐba:]	[ɾɐɾ:ɐba:]	divide
[bɐb:ʊga:]	[bʊb:ʊga:]	beat
[dɐd:ɐΦa:]	[dɐd:ɐh^{w}a:]	cook

One observes that the group 'A' verbs under 'Regional variant 27a' have alternating pairs. The second consonant of one form of the pair consists of a germinate counterpart of the first consonant while the other form consists of one of the consonants n,r,j,w preceding a consonant identical to the first consonant i.e. kakkama [kɐk:a:ma:] ~ kankama [kɐŋka:ma:]. These consonants (i.e. n,r,m,w) exhibit total identity to the final consonant of the verb, e.g. n:n in zanzana [zɐnza:na:], or share many features in common as n:m in kankama [kɐŋka:ma:].

Group 'B' verbs show a similar reduplication behaviour but the forms without gemination all exhibit some similarity in having an r [ɾ]. The r does not exhibit total identity to the final consonants of these forms. These consonants are s,z,t,d,ɗ and ts.

The group 'C' verbs on the other hand are different from the preceding groups in that they have only the geminated form of each verb without a corresponding non-geminated form. This group is constituted of certain forms which belong to groups 'A' and 'B' though behaving differently (and, of course, another set of forms whose initial segment

is an s and whose final stem consonants include s,z,t,d,ts and d but the r [ɾ] does not appear; instead there is a gemination which has no alternative forms. In this group (i.e. group 'C') there are forms whose initial stem consonants are b,b,Φ,k and g.

While 'regional variant 27a' exhibits both optional gemination and obligatory gemination, we find that only obligatory gemination exists in 'regional variant 27b'. So that the basic difference between the two regions in the formation of intensive verbs consists in optional gemination versus obligatory gemination.

It is also observed that only verbs whose final stem consonant is one of the following segments can have alternative intensive verb forms: m,n,r,j,w; t,d,s,z,d,ts, except those forms whose initial segment is an s or those whose initial consonant is identical or nearly identical to the final-stem consonant, e.g. n:n as in [nu:na:] and l:r as in [lu:ra:] the intensive verb forms of which are nunnuna [nun:u:na:] and lullura [lul:u:ra:] meaning 'to ripen' and 'to pay attention' respectively.

2.1.28 Regional Variation 28:

Different pronunciations have been heard from one area to another in expressing what is referred to as the genitive link. This genitive link has two forms - one is short and the other long (cf. Kraft and Kirk-Greene, 1973). Each of these two forms has two functions one of which is to indicate possession and the other is used for the purpose of reference. The possessive genitive link can be translated as 'of' as in rigar Kabiru [ri:g rk bi:ru:] or riga ta Kabiru 'the gown of Kabiru.'

The referential genitive link bears certain similarities to the English definite article, but is not exactly the same. For example, rigar ta kone 'the gown (we talked about) was burnt'. The short form of the genitive link consists of a single consonant suffix the form of which

depends upon phonological, morphological and dialect factors. The long form na and the corresponding short form -n occur when the preceding noun is either masculine or plural. The forms with na and -n are heard in the speech of every Hausa-speaking person regardless of the area he comes from. However, in expressing the long feminine genitive link and the short feminine genitive link different pronunciations have been observed so that our regional variation 28 is further subdivided into regional variation 28(i) (long. fem. gen. link), regional variation 28(ii) (short fem. gen. link) and regional variation 28(iii) (referential). Consider the following examples:

Regional Variant 28(i)a	Gloss
[ɽi:ga:tɐwa:wa:]	the fool's gown
[wɐndo:nɐwa:wa:]	the fool's trousers
Regional Variant 28(i)b	
[ɽi:ga:nɐwa:wa:]	the fool's gown
[wɐndo:nɐwa:wa:]	the fool's trousers
Regional Variant 28(ii)a	
[ɽi:gɐrwa:wa:]	fool's gown
[wɐndoŋwa:wa:]	fool's trousers
Regional Variant 28(ii)b	
[ɽi:gɐŋwa:wa:]	fool's gown
[wɐndoŋwa:wa:]	fool's trousers
Regional Variant 28(ii)c	
[ɽi:gɐw:a:wa:]	fool's gown
[wɐndoŋwa:wa:]	fool's trousers
Regional Variant 28(ii)d	
[ɽi:gɐlwa:wa:]	fool's gown

[wɐndoŋwa:wa:] fool's trousers

Regional Variant 28(iii)a

[ɾi:gɐr]~ [ɾi:gɐs] the gown (we talked about)

[wʊtɐr] ~ [wʊtɐs] the fire (we talked about)

Regional Variant 28(iii)b

[ɾi:gɐŋ] the gown (we talked about)

[wʊtɐŋ] the fire (we talked about)

Regional Variant 28(iii)c

[ɾi:gɐt] the gown (we talked about)

[wʊtɐt] the fire (we talked about)

Regional Variant 28(iii)d

[ɾi:gɐl] the gown (we talked about)

[wʊtɐl] the fire (we talked about)

Regional Variant 28(iii)e

[ɾi:gɐj] the gown (we talked about)

[wʊtɐj] the fire (we talked about)

2.1.29 Regional Variation 29:

Closely linked to the preceding difference is the fact that when the short masculine genitive link [n] (functioning as a referential marker) is attached to a noun form ending in one of the mid-vowels e [e:] or o [o:], the sound [ɐ] is heard in the pronunciation of some people, while the mid-vowels are pronounced as [ɛ] or [ɔ] in the speech of others. The pronunciation of e or o as [ɐ] has been recognized by some writers on Hausa among whom were Greenberg (1941:320-21); Gregersen (1967:181) and Hoffman and Schachter (1969:181). The same is true with the high vowels i and u which are heard as [ɤ] in the area where e and o are pronounced

as [ɐ], while in other areas they are pronounced as [ɪ] or [ʊ] respectively. Consider the following examples:

Regional Variant 29a		Regional Variant 29b	Gloss
bakon	[ba:k$^{w'}$ɐŋ]	[ba:k$^{w'}$ɔŋ]	the stranger
karen	[kɐɾɐŋ]	[kɐɾɛŋ]	the dog
keken	[k^{j}e:k^{j}ɐŋ]	[k^{j}e:k^{j}ɛŋ]	the bicycle
garun	[ga:ɾʊŋ]	[ga:ɾʊŋ]	the wall
garin	[gɐɾʊŋ]	[gɐɾɪŋ]	the town
birin	[bɪɾʊŋ]	[bɪɾɪŋ]	the monkey

However, when the derivational suffix [-ntʃi:] meaning 'language of ..., characteristic of ..." is attached to these mid-vowels (e and o) they are heard everywhere to have the neutralized pronunciation as [ɐ]; as shown below:

Form	Derivation	Gloss
Kano	[kɐnɐn̥tʃi:]	Kano Hausa
Sakkwato	[sɐk^{w}:ɐtɐn̥tʃi:]	Sakkwato Hausa
rago	[ɾɐg^{w}ɐn̥tʃi:]	cowardice

2.1.30 Regional Variation 30:

This variation concerns the possessive pronouns. These pronouns are a special case of what has just been described, the only difference is that the genitive link attaches to a pronoun.

There are two forms of possessive pronouns, namely separable and inseparable (Cf. Kraft and Kirk-Greene, 1973), which correspond to the long and short form of the genitive. Different pronunciations have been observed. e.g.:

Regional Variant 30a		Gloss
gonata	[g^{w}o:na:ta:]	my farm
gonarka	[g^{w}o:nɐrka:]	your (sing. masc.) farm

gonarmu	[g^{w}o:nɐrmu:]	our farm
gonarta	[g^{w}o:nɐrta:]	her farm

Regional Variant 30b

gonata	[g^{w}o:na:ta:]	my farm
gonakka	[g^{w}o:nɐk:a:]	your (sing. masc.) farm
gonammu	[g^{w}o:nɐm:u:]	our farm
gonatta	[g^{w}o:nɐt:a:]	her farm

Regional Variant 30c

gonata	[g^{w}o:na:ta:]	my farm
gonalka	[g^{w}o:nɐlka:]	your (sing. masc.) farm
gonalmu	[g^{w}o:nɐlmu:]	our farm
gonalta	[g^{w}o:nɐlta:]	her farm

Regional Variant 30d

gonana	[g^{w}o:na:na:]	my farm
gononka	[g^{w}o:nɐŋka:]	your (sing. masc.) farm
gonammu	[g^{w}o:nɐm:u:]	our farm
gonanta	[g^{w}o:nɐnta:]	her farm

2.1.31 Regional Variation 31:

Speakers of certain areas differ in the way they express the 3 ms. as a subject of a continuous tense, subjunctive tense or future tense. [jɐ] or [-j] is heard. While in other areas people have [ʃɪ]. e.g.:

Regional Variant 31a

Musa yana tafiya	[mu:sa:jɐna:tɐΦɪja:]	Moses is going
Musa zai tafi	[mu:sa:zɐjtɐΦi:]	Moses will go
Musa yana gida	[mu:sa:jɐna:g^{j}ɪda:]	Moses is at home
Ce wa Musa ya tafi	[tʃe:wa:mu:sa:jɐtɐΦi:]	Tell Moses to go

Regional Variant 31b

Musa shina tafiya	[mu:sa:ʃɪna:tɐhɪja:]	Moses is going
Musa za shi tafi	[mu:sa:za:ʃɪtɐhi:]	Moses will go
Musa yana gida	[mu:sa:jɐna:g^{j}ɪda:]	Moses is at home

2.1.32 Regional Variation 32

When preceded by a special form of the causative the 3ms. functioning as the object of a sentence [ʃi:] is heard in some areas, while [j] is heard in others. Consider the following examples:

Regional Variant 32a	Gloss
[na:Φɪʃ:e:ʃi:]	I took it out
[na:gɐjʃe:ʃi:]	I greeted him
[na:mɐjʃe:ʃi:]	I returned it

Regional Variant 32b

[na:hɪs:ɐj]	I took it out
[na:gɐjsɐj]	I greeted him
[na:mɐjsɐj]	I returned it

2.1.33 Regional Variation 33:

Yet another difference in the pronunciation of the 3ms. functioning as the object of a sentence has been observed. [s~r] is found in certain words in some areas which in other areas are pronounced with [ʃi:] or [j]. e.g.:

Regional Variant 33a

[na:ma:ɾɐs]	~ [na:ma:ɾɐr]	I slapped him
[na:do:kɐs]	~ [na:do:kɐr]	I beat him
[na:mɐŋgeɾɐs]	~ [na:mɐŋgeɾɐr]	I slapped him

Regional Variant 33b

[na:ma:ɾɐj]	I slapped him
[na:do:kɐj]	I beat him
[na:mɐŋgɐɾɐj]	I slapped him

Regional Variant 33c

[na:ma:ɾe:ʃi:]	I slapped him
[na:do:kʲe:ʃi:]	I beat him
[na:mɐŋgɐɾe:ʃi:]	I slapped him

2.1.34 Regional Variation 34:

It is typical of the speech of some people to contract sentences in which a 1st pers. sing. pronoun is an indirect object and in certain verbs - where this pronoun is a direct object. Elsewhere this does not occur. e.g.:

Regional Variant 34a	Gloss
[ja:gɐjɐnzɐjzo:]	he told me
[ja:bʊgɐŋ]	he beat me
[ja:tʃu:tʃɐŋ]	he cheated me
[ja:za:gɐŋ]	he abused me

Regional Variant 34b

[ja:gɐja:mɪni:]	he told me
[ja:bʊgʲe:ni:]	he beat me
[ja:tʃu:tʃe:ni:]	he cheated me
[ja:za:gʲe:ni:]	he abused me

2.1.35 Regional Variation 35:

Various pronunciations of what some Hausa writers refer to as the 'demonstratives' (cf. Schön, 1862 and Robinson, 1941), 'demonstrative

adjectives' (cf. Taylor, 1923) or 'specifiers' (cf. Kraft and Kirk-Greene, 1973) have been observed.

There are two types of the demonstratives, namely long and short. The long demonstrative functions as both head of a nominal phrase and as a pre-modifier, while the short demonstrative functions only as a post-modifier. The proximal demonstrative [wɐn:ɐŋ] 'this one' may be used for both masculine and feminine genders in the speech of some people, while [wɐg:a:] and [wɐŋga:] 'this one (fem.)' and 'this one (masc.)'; [wɐʔ:ɪŋ] 'this one (fem.)' [wɐŋʔɪŋ] 'this one (masc.)'; [wɐlga:] ~ [wɐrga:] 'this one (fem.)' and [wɐŋga:] are differentiated by people from other areas. e.g.:

Regional Variant 35a	Gloss
[wɐn:ɐŋja:ɾo:]	this boy
[wɐn:ɐm:ɐtʃe:]	this woman
Regional Variant 35b	
[wɐŋgɐja:ɾo:]	this boy
[wɐg:a:mɐtʃe:]	this woman
Regional Variant 35c	
[wɐŋʔɪŋja:ɾo:]	this boy
[wɐʔ:ɪm:ɐtʃe:]	this woman
Regional Variant 35d	
[wɐŋga:ja:ɾo:]	this boy
[wɐlga:mɐtʃe:] ~ [wɐrga:mɐtʃe:]	this woman

2.1.36 Regional Variation 36:

Another difference exists in the pronunciation of the distal demonstrative. Here 'that one (fem)' is pronounced as [wɐtʃ:ɐŋ] in

certain areas, while in other areas it is pronounced as [wɛntʃɐŋ] with no gender distinction. e.g.:

Regional Variant 36a	Gloss
[wɛtʃ:ɐŋgɛɽa:]	that ant
[wɛtʃ:ɐɲja:ɽɪɲja:]	that girl

Regional Variant 36b	
[wɛntʃɐŋgɛɽa:]	that ant
[wɛntʃɐɲja:ɽɪɲja:]	that girl

2.1.37 Regional Variation 37:

This concerns the difference in the pronunciation of the relative past tense. In some parts of the Hausa-speaking area verbs in the singular forms are pronounced with gemination while in other areas they are pronounced without it, as shown below:

Regional Variant 37a

lokacin da na tafi na gan shi

time-the rel I-past go I-past see him

'I saw him when I went'

[lo:kɐtʃɪndɐnɐtɐΦi:na:gɐnʃi:]

Regional Variant 37b

lokacin da nittahi, na gane shi

time-the rei I went I-past see him

[lo:kɐtʃɪndɐnɪt:ɐhi:na:gɐne:ʃi:]

2.1.38 Regional Variation 38:

Closely linked to the preceidng difference is the fact that the plural forms of the relative past tense are pronounced with [mʊŋkɐ], while in other areas people pronounce them with [mʊkɐ], as shown below:

Regional Variant 38a

lokacin da munka tahi, mun gane shi

time-the rel we-past-rel see we-past see him

[lo:kɐtʃɪndɐmʊŋkɐtɐhi:mʊngɐne:ʃi:]

'We saw him when we went'

Regional Variant 38b

lokacin da muka tafi mun gan shi

time-the rel we-rel go we-past see him

[lo:kɐtʃɪndɐmʊkɐtɐΦi:mʊŋgɐnʃi:]

'We saw him when we went'.

2.1.39 Regional Variation 39:

[kɐ] in some areas corresponds to [k^{j}e:] in others. This fact can be seen in expressing the relative continuous tense. e.g.:

Regional Variant 39a

babu tuwon da shika so

there's-not food-of rel he-rel like

[ba:bʊtʊwɔndɐʃɪkɐso:]

'There isn't the food he likes'

Regional Variant 39b

babu tuwon da yake so

there's-not food-of rel he-rel like

[ba:bʊtʊwɔndɐjɐk^{j}e:so:]

'there isn't the food he likes.'

2.1.40 Regional Variation 40:

It is observed that the differences here consist in what the traditional grammarians call 'long' and 'short (special)' forms of the

causative (cf. Schuh, 1976 and Kraft and Kirk-Greene, 1973). In the long form of the causative the difference is that some people pronounce [r] while others pronounce [s]. While in the short (special) form the difference concerns the pronominal object of a sentence which appears as [ʃi:] in the speech of some people but with [j] in that of others. Examples:

	Regional Variant 40a	Gloss
long form	[na:hɪtɐsdɐʃi:]	I took it out
long form	[na:mɐjɐsdɐʃi:]	I returned it
long form	[na:hɪtɐs]	I took (it) out
long form	[na:mɐjɐs]	I returned (it)
short form	[na:hɪs:ɐj]	I took it out
short form	[na:mɐjsɐj]	I returned it

	Regional Variant 40b	Gloss
long form	[na:ɸɪtɐrdɐʃi:]	I took it out
long form	[na:mɐjɐrdɐʃi:]	I returned it
long form	[na:ɸɪtɐr]	I took (it) out
long form	[na:mɐjɐr]	I returned (it)
short form	[na:ɸɪʃ:e:ʃi:]	I took it out
short form	[na:mɐjʃe:ʃi:]	I returned it

2.1.41 Regional Variation 41:

Another difference concerns the substantive verb (cf. Robinson, 1941). In the speech of some people [ʔɐ] + c (where 'c' represents a gemination of the first consonant of the following element) is heard, which corresponds to [k^je:] in others, where [k^je:] has the meaning 'to be'. There are two situations in which the form could be employed, namely (i) in asking or replying to the question 'who owns ...?' and (ii) in emphasizing a statement, as exemplified below:

Regional Variant 41a

wa adda wanga wando?

[wa:ʔɐd:ɐwɐŋgɐwɐndo:]

'who owns this pair of trousers?'

ni adda wanga wando

[ni:ʔɐd:ɐwɐŋgɐwɐndo:]

'I own this pair of trousers'

shi assarki	[ʃi:ʔɐs:ɐɾkʲi:]	It's a king!
shi akkaraminsu	[ʃi:ʔɐk':ɐɾɐminsu:]	It's the smallest of them!
shi a'aboki	[ʃi:ʔɐʔ:ɐbo:kʲi:]	It's a friend!
shi ayyaro	[ʃi:ʔɐj:a:ɾo:]	It's a boy!
shi awwawa	[ʃi:ʔɐw:a:wa:]	It's a fool!

Regional Variant 41b

wa ke da wannan wando

[wa:kʲe:dɐwɐn:ɐŋwɐndo:]

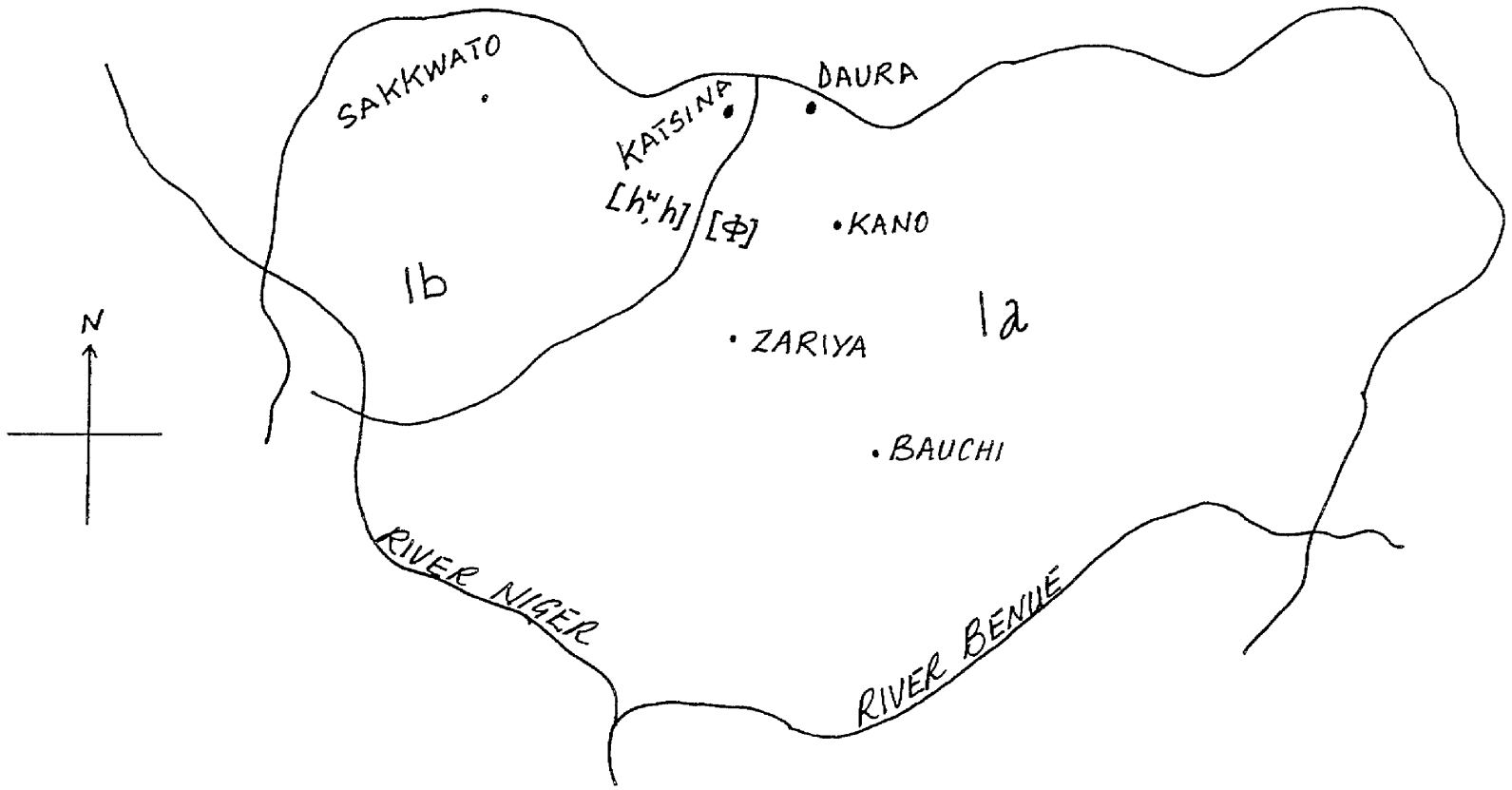
'who owns this pair of trousers?'

ni ke da wannan wando

[ni:kʲe:dɐwɐn:ɐŋwɐndo:]

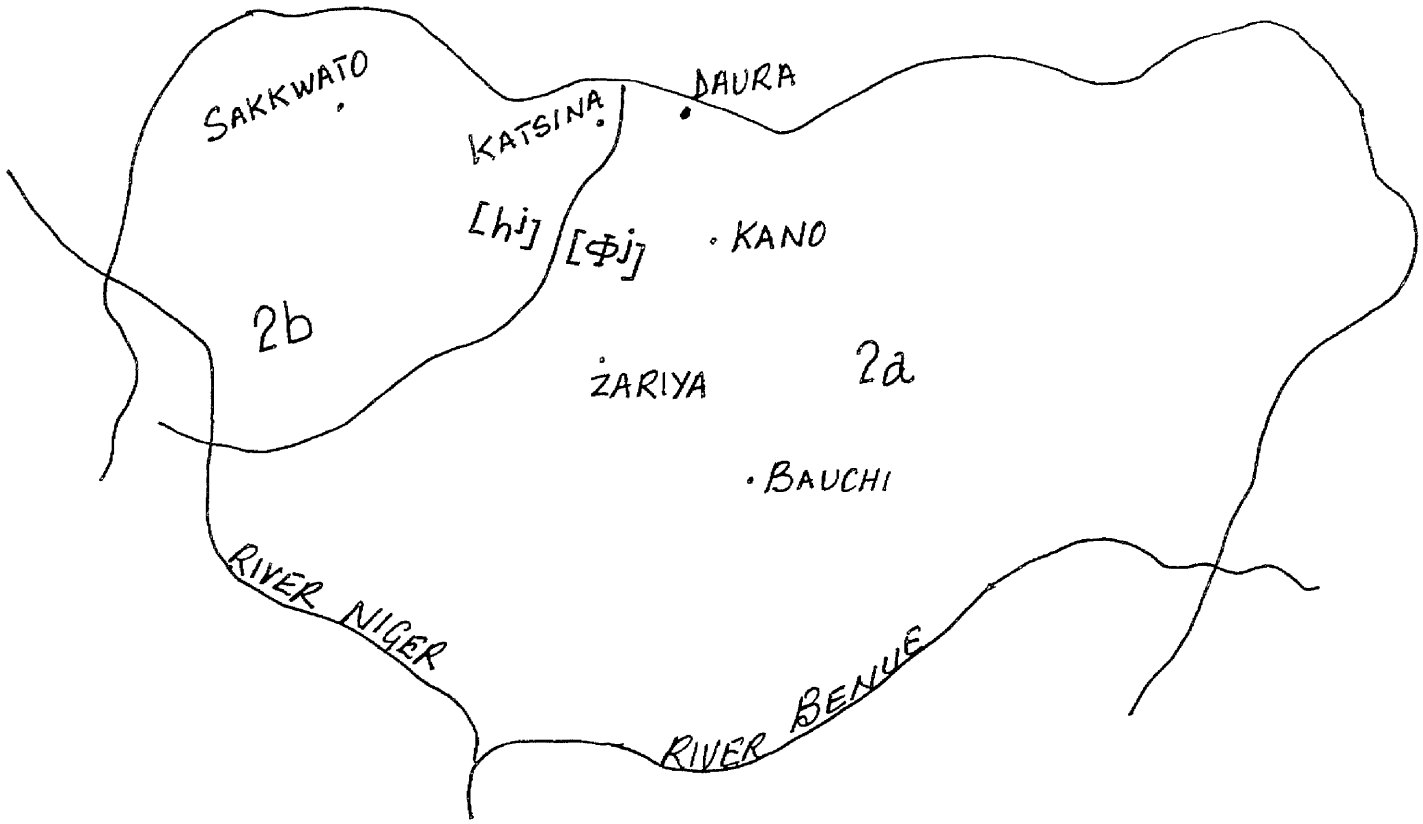
shi ke sarki	[ʃi:kʲe:sɐɾkʲi:]	It's a king!
shi ke karaminsu	[ʃi:kʲe:k'ɐɾaminsu:]	It's the smallest of them!
shi ke aboki	[ʃi:kʲe:ʔɐbo:kʲi:]	It's a friend!
shi ke yaro	[ʃi:kʲe:ja:ɾo:]	It's a boy!
shi ke wawa	[ʃi:kʲe:wa:wa:]	It's a fool!

So far we have indicated 41 regional variations, but have said nothing about the regions where these variations occur. We shall now examine the geographical distribution of these variations. To do this we shall plot them on maps as isoglosses. These isoglosses are abstractions. They are as follows:

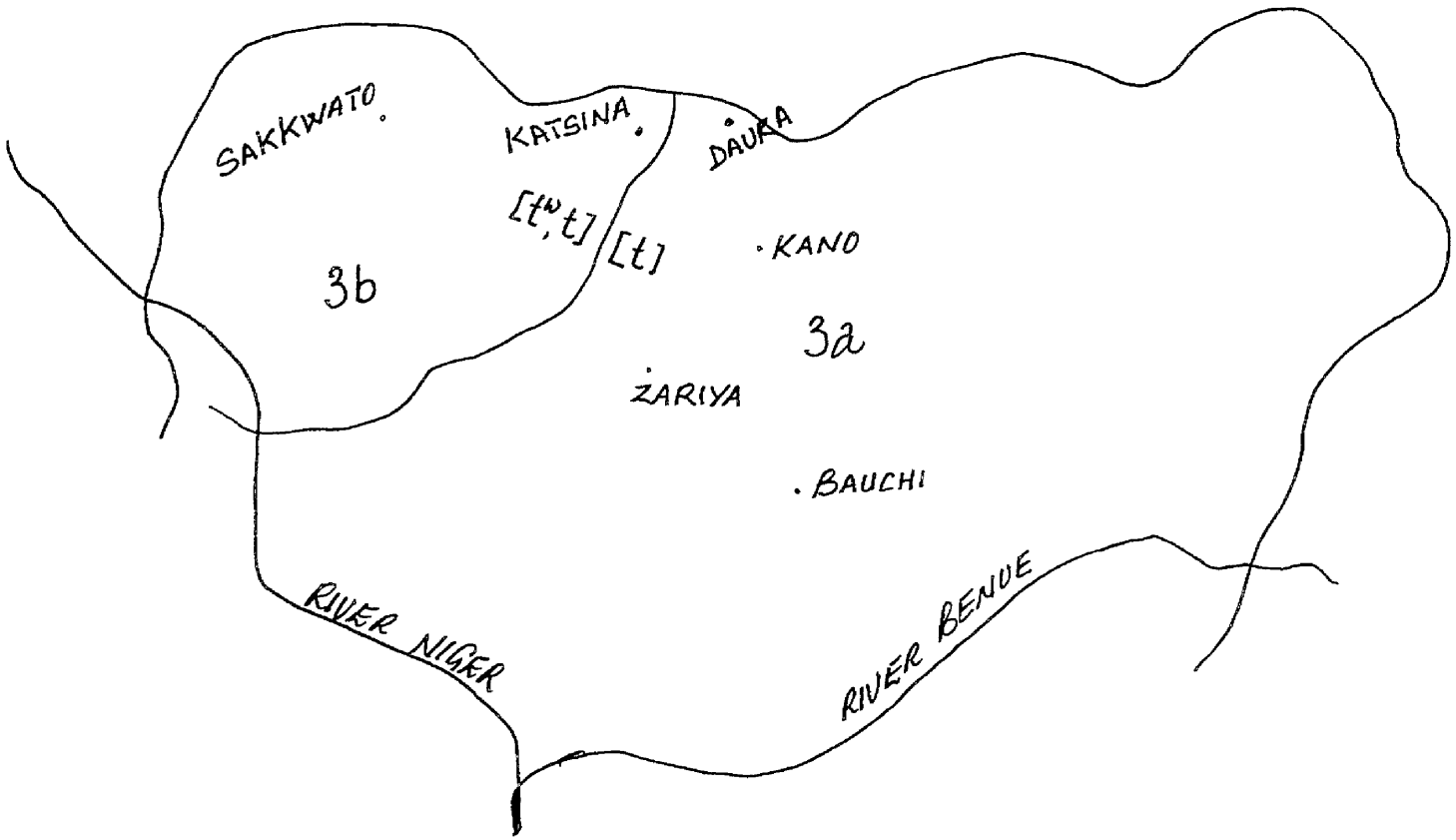


Map 1. Isogloss of regional variation 1.

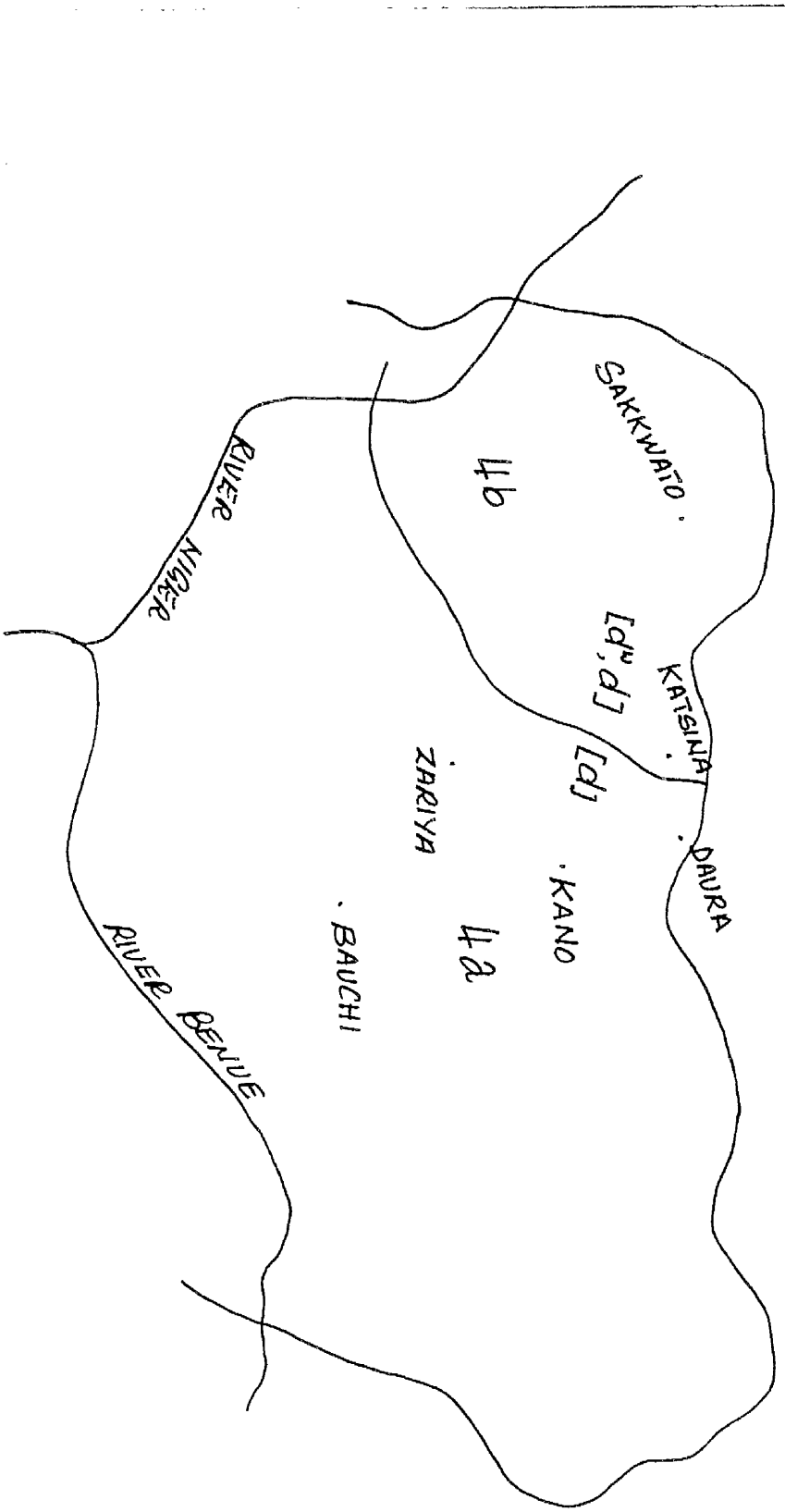
Note: The figures indicated on maps represent regional variants.



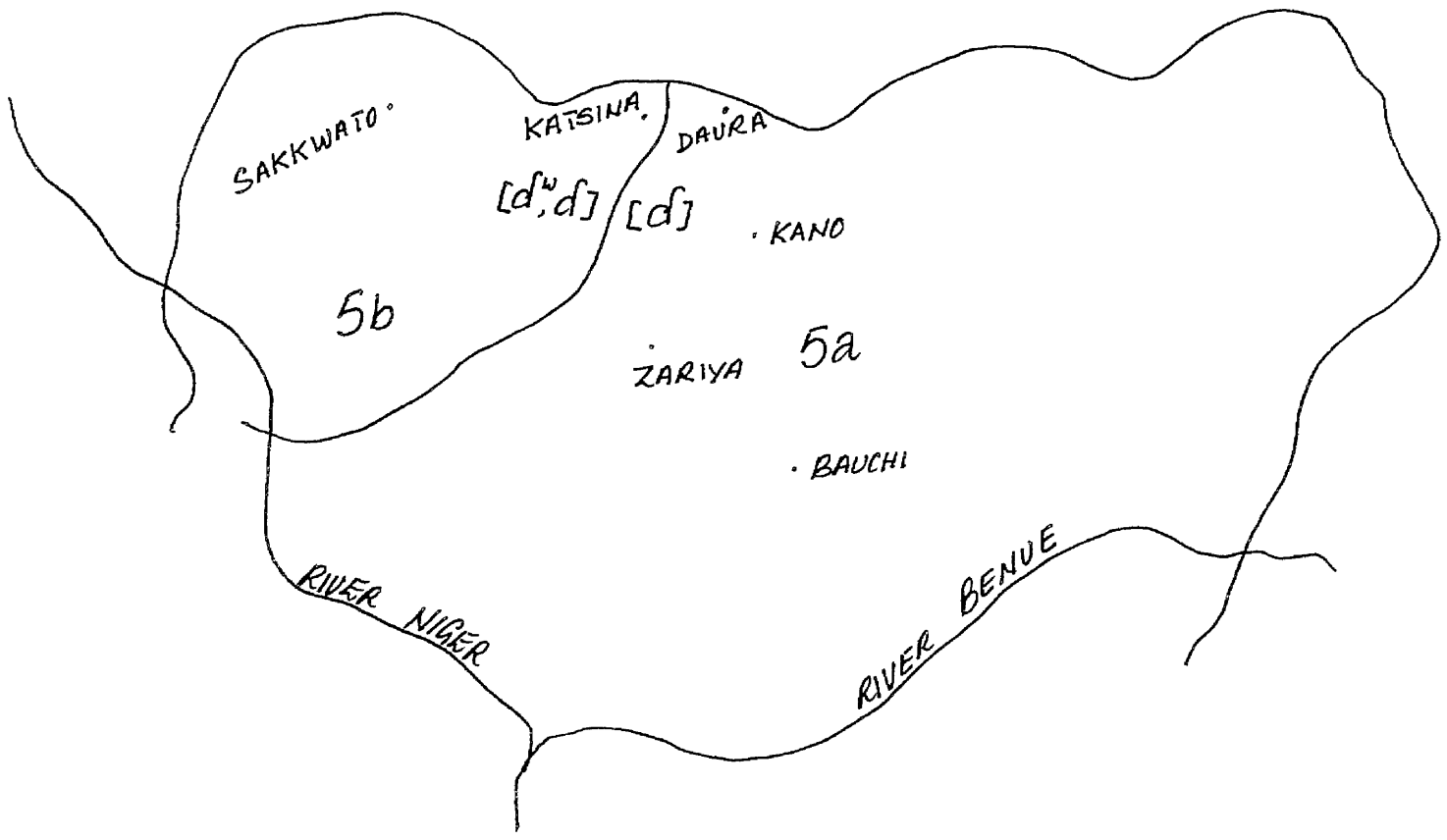
Map 2. Isogloss of regional variation 2



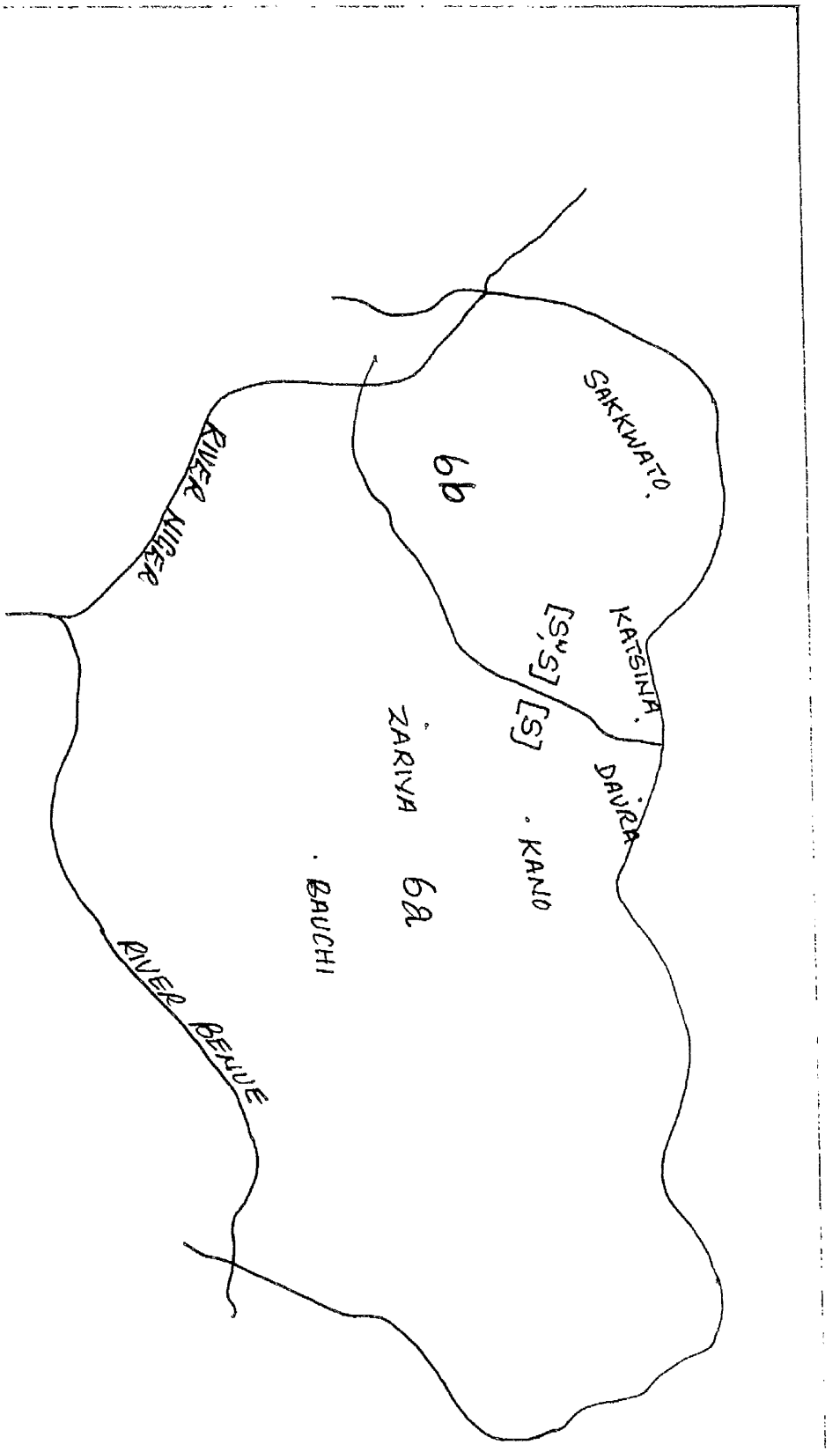
Map 3. Isogloss of regional variation 3.



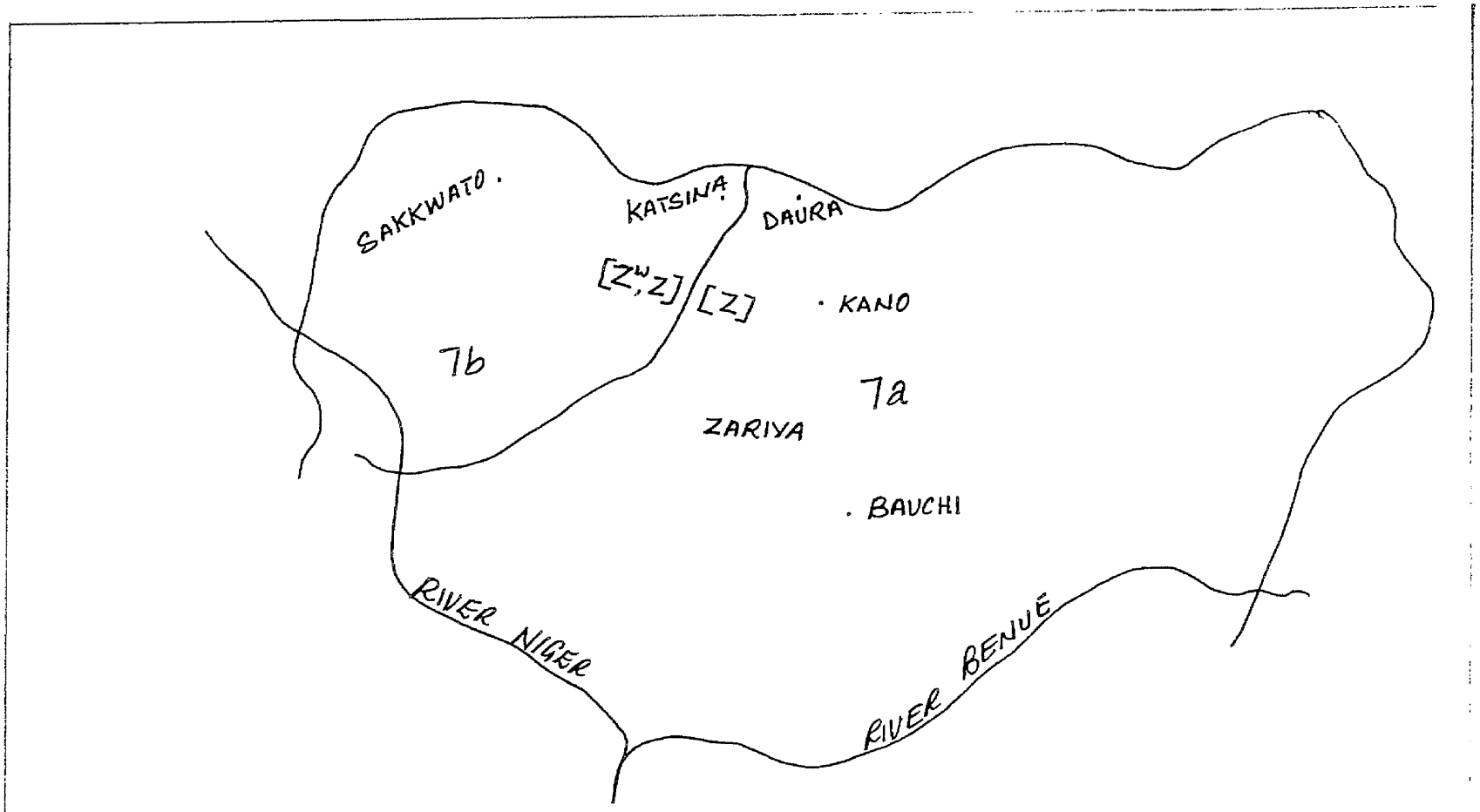
Map 4. Isogloss of regional variation 4.



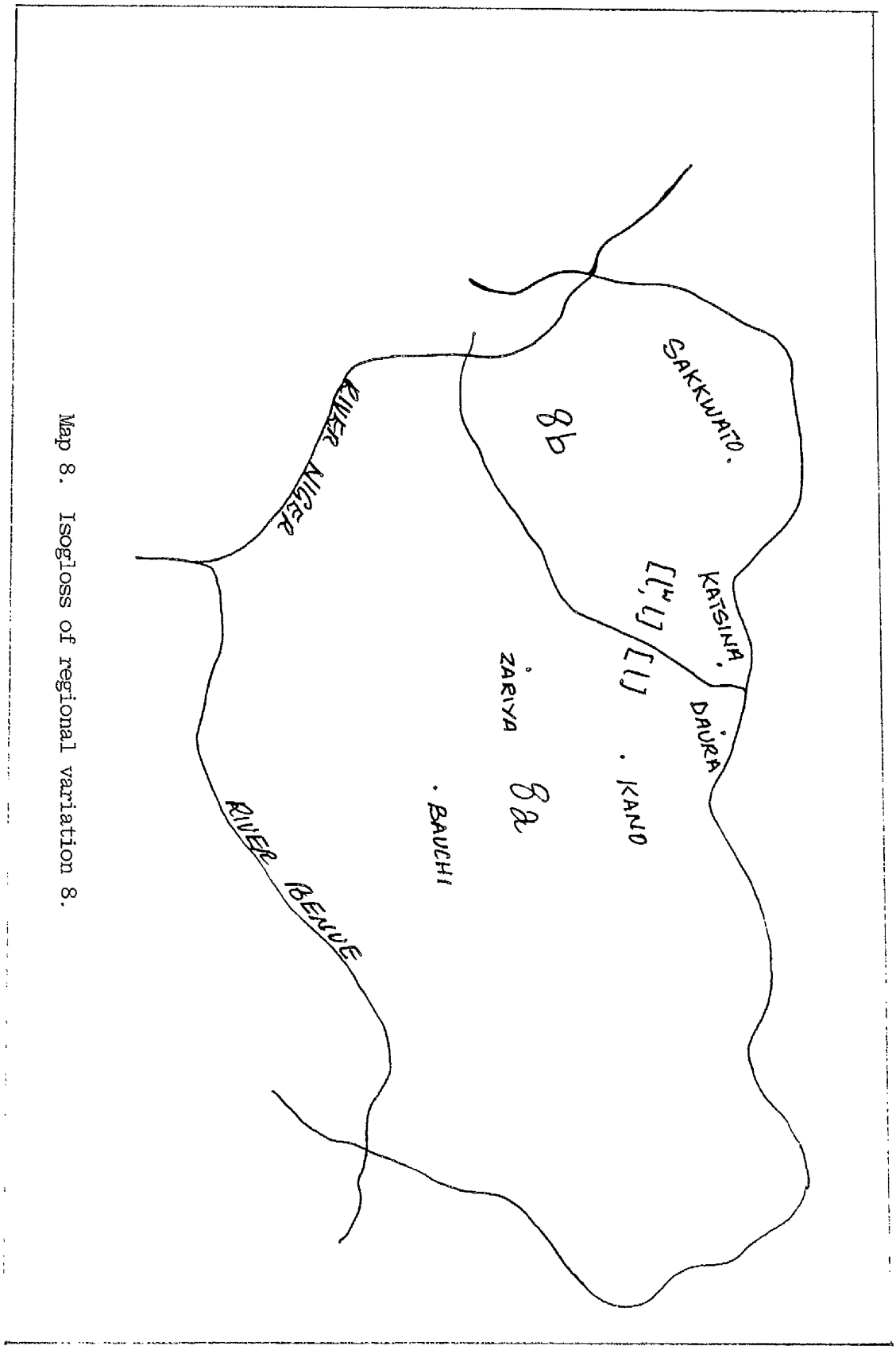
Map 5. Isogloss of regional variation 5.



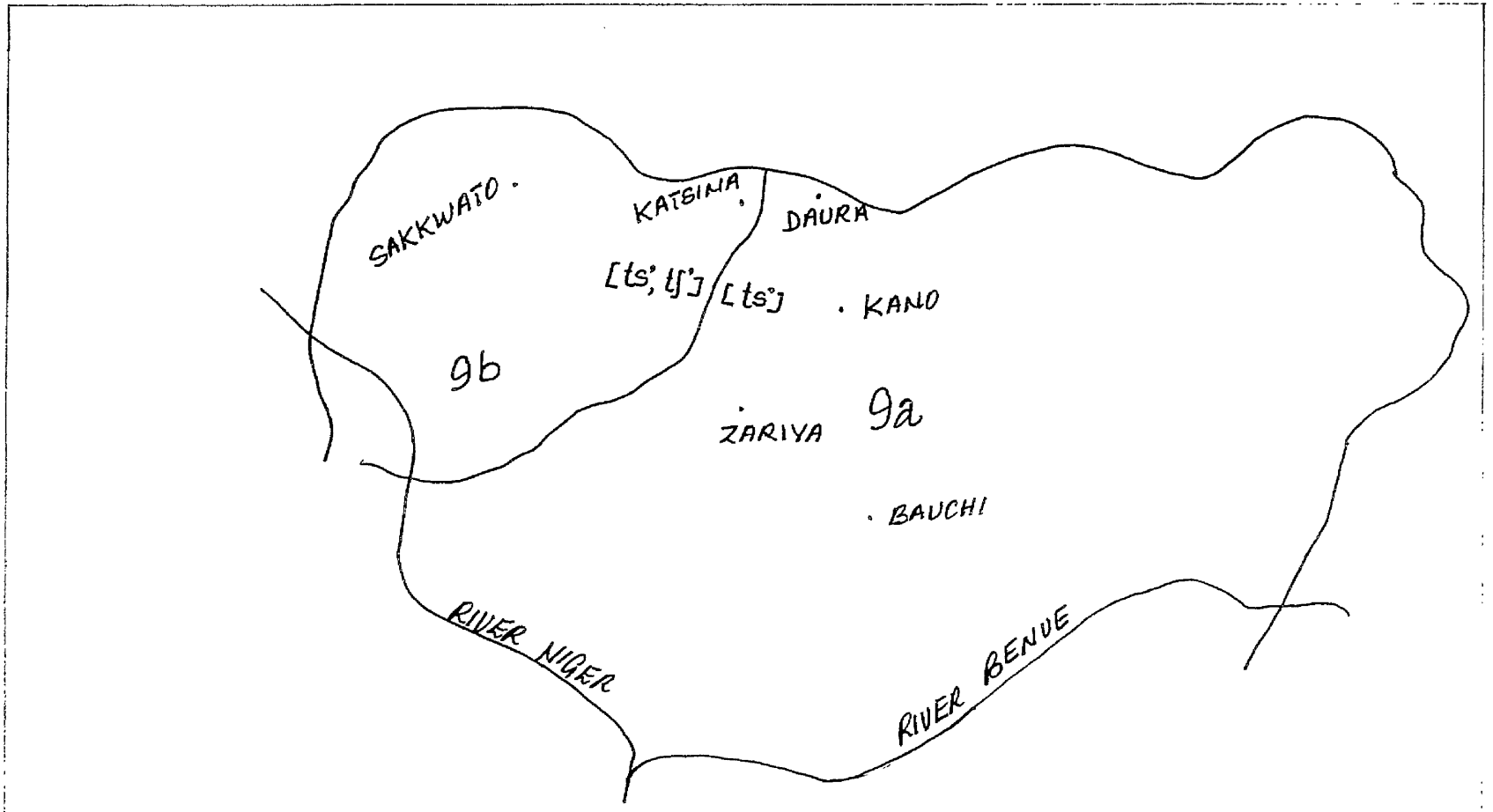
Map 6. Isogloss of regional variation 6.



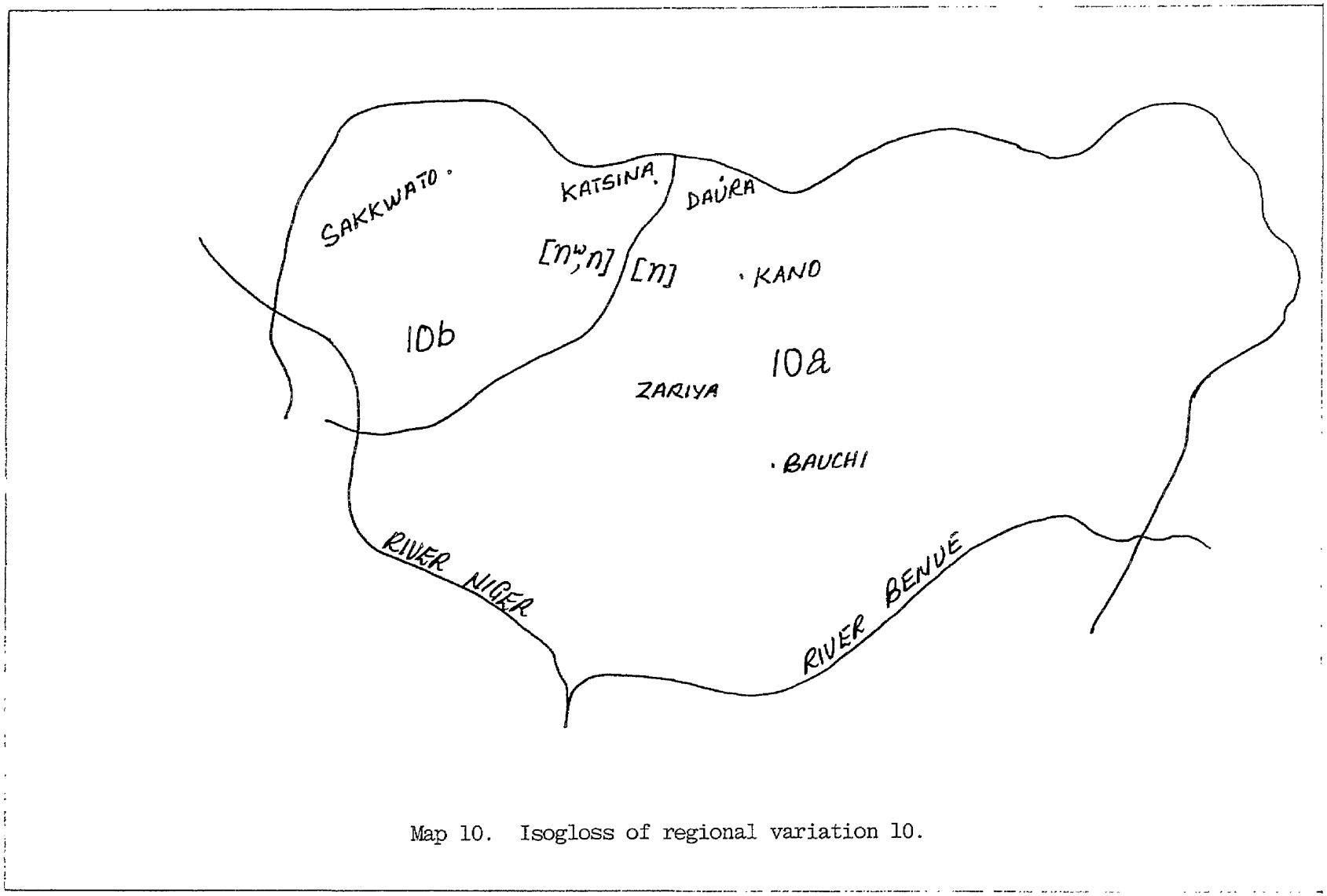
Map 7. Isogloss of regional variation 7.



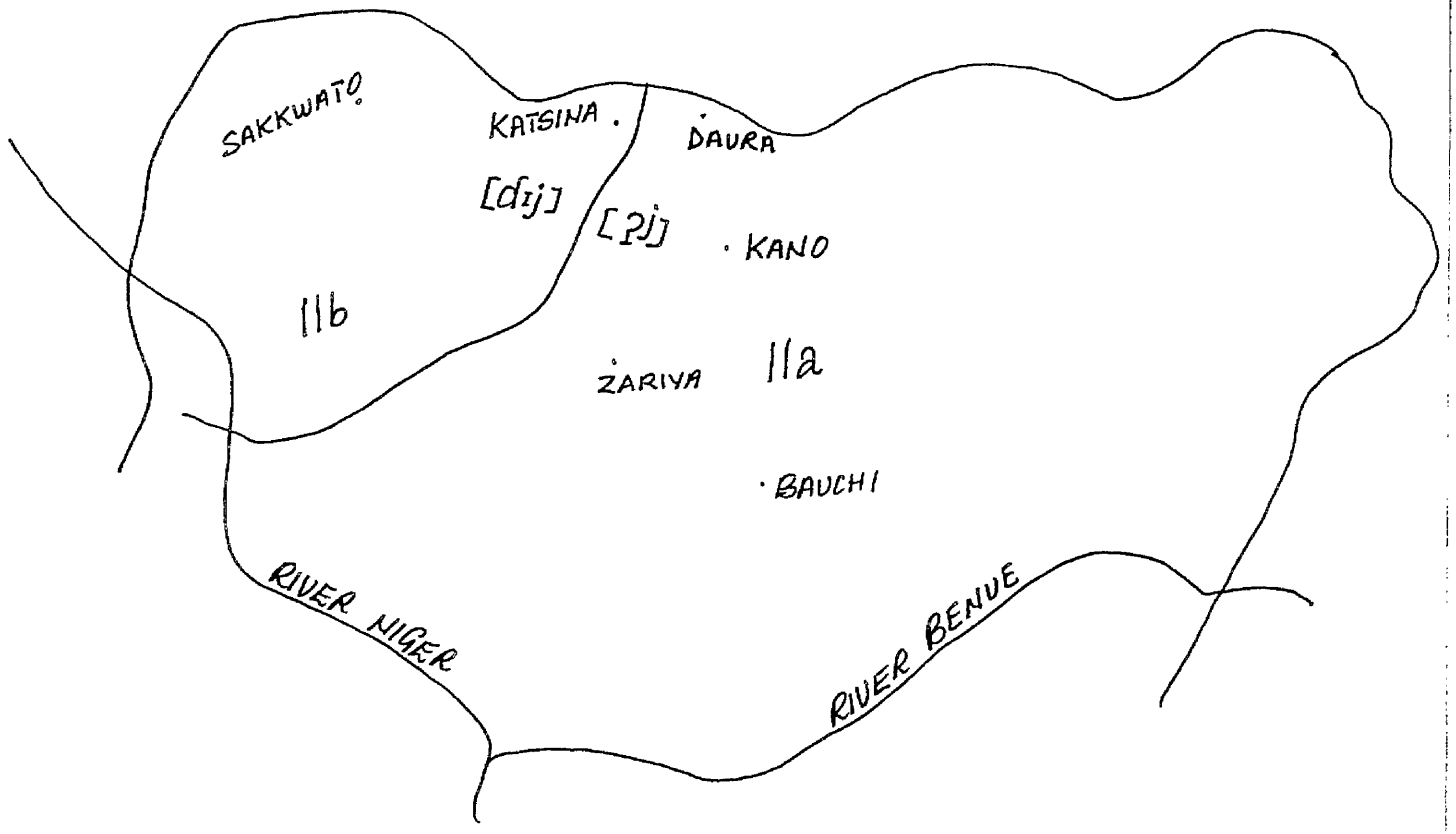
Map 8. Isogloss of regional variation 8.



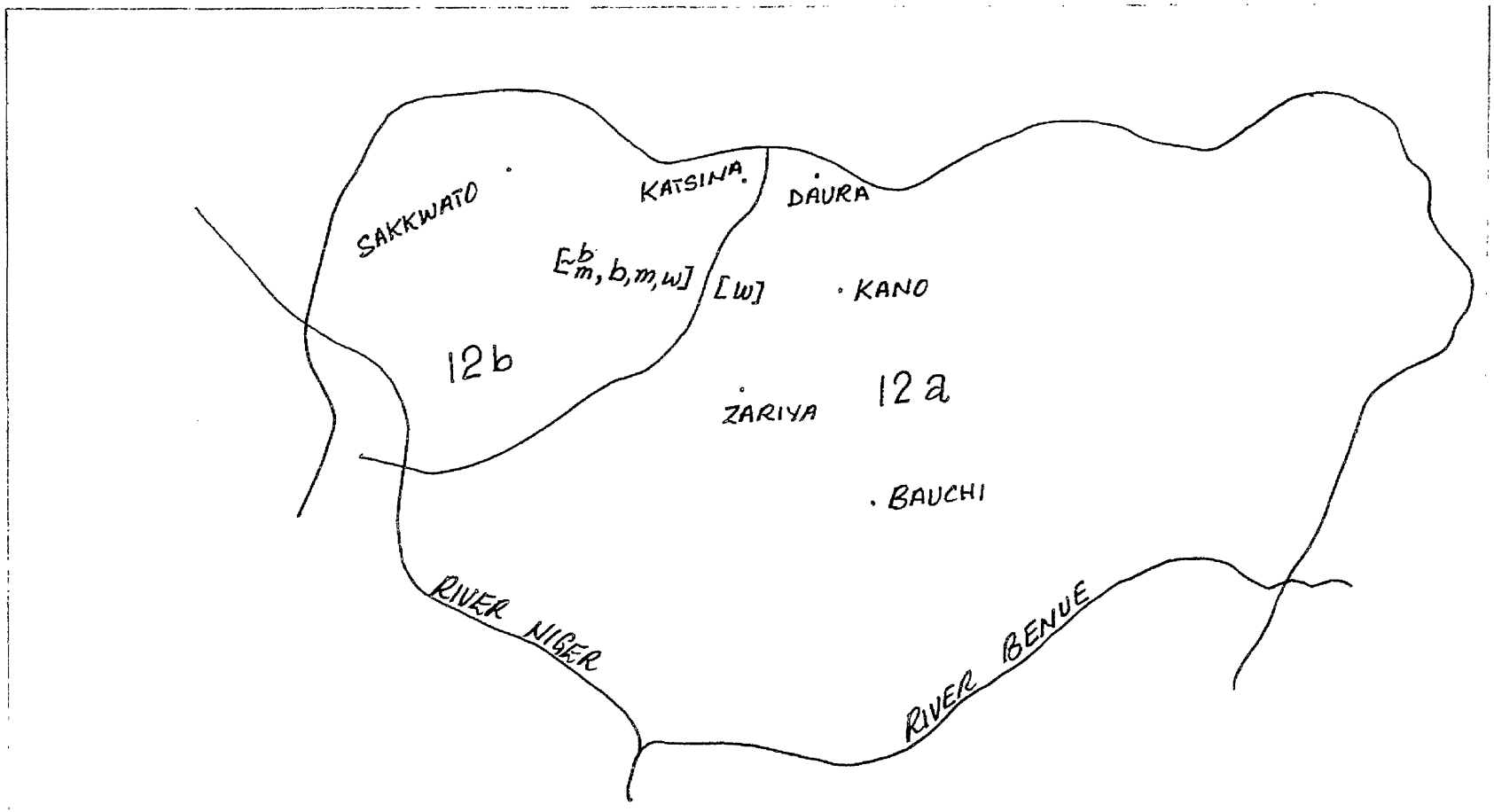
Map 9. Isogloss of regional variation 9.



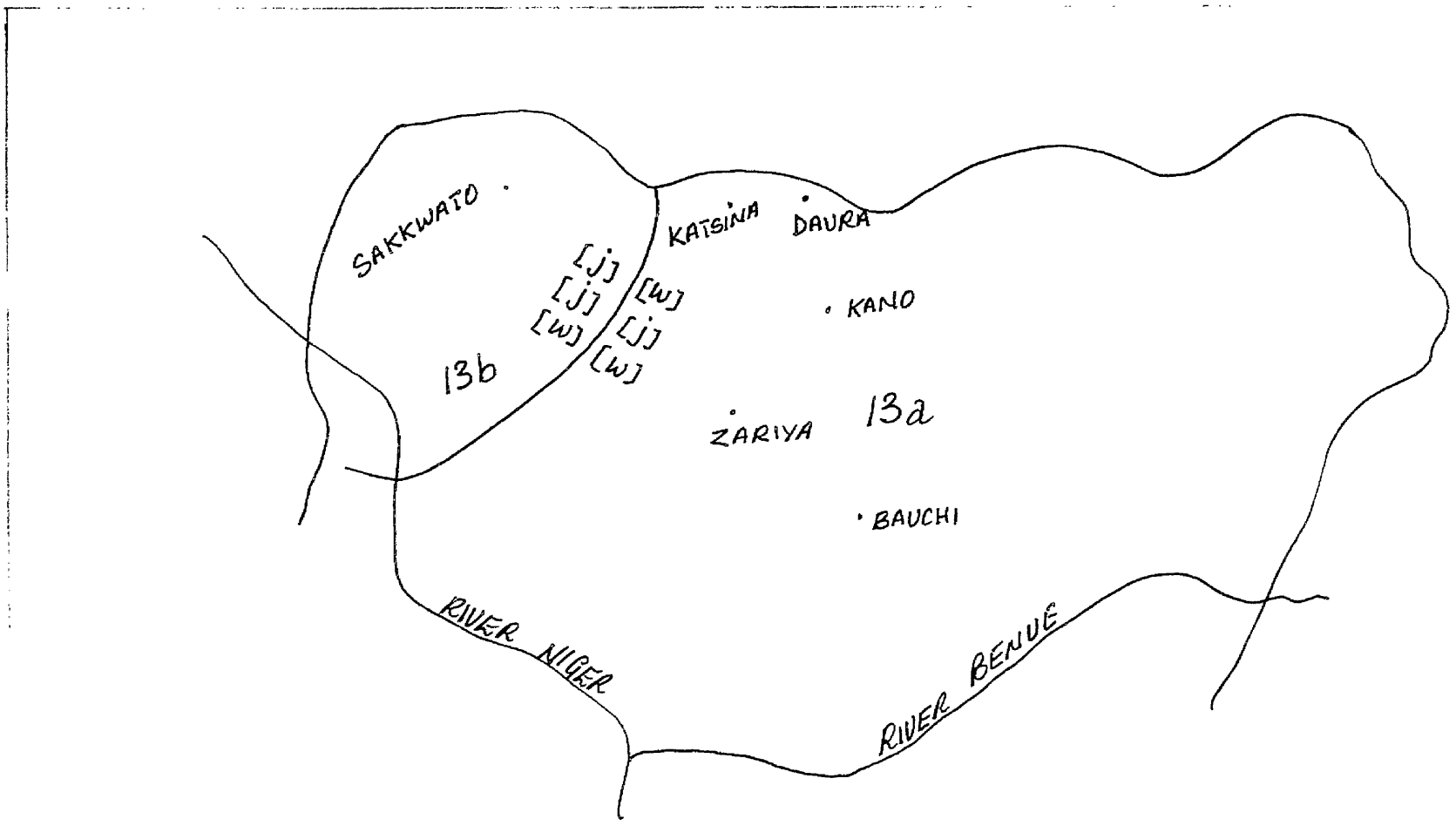
Map 10. Isogloss of regional variation 10.



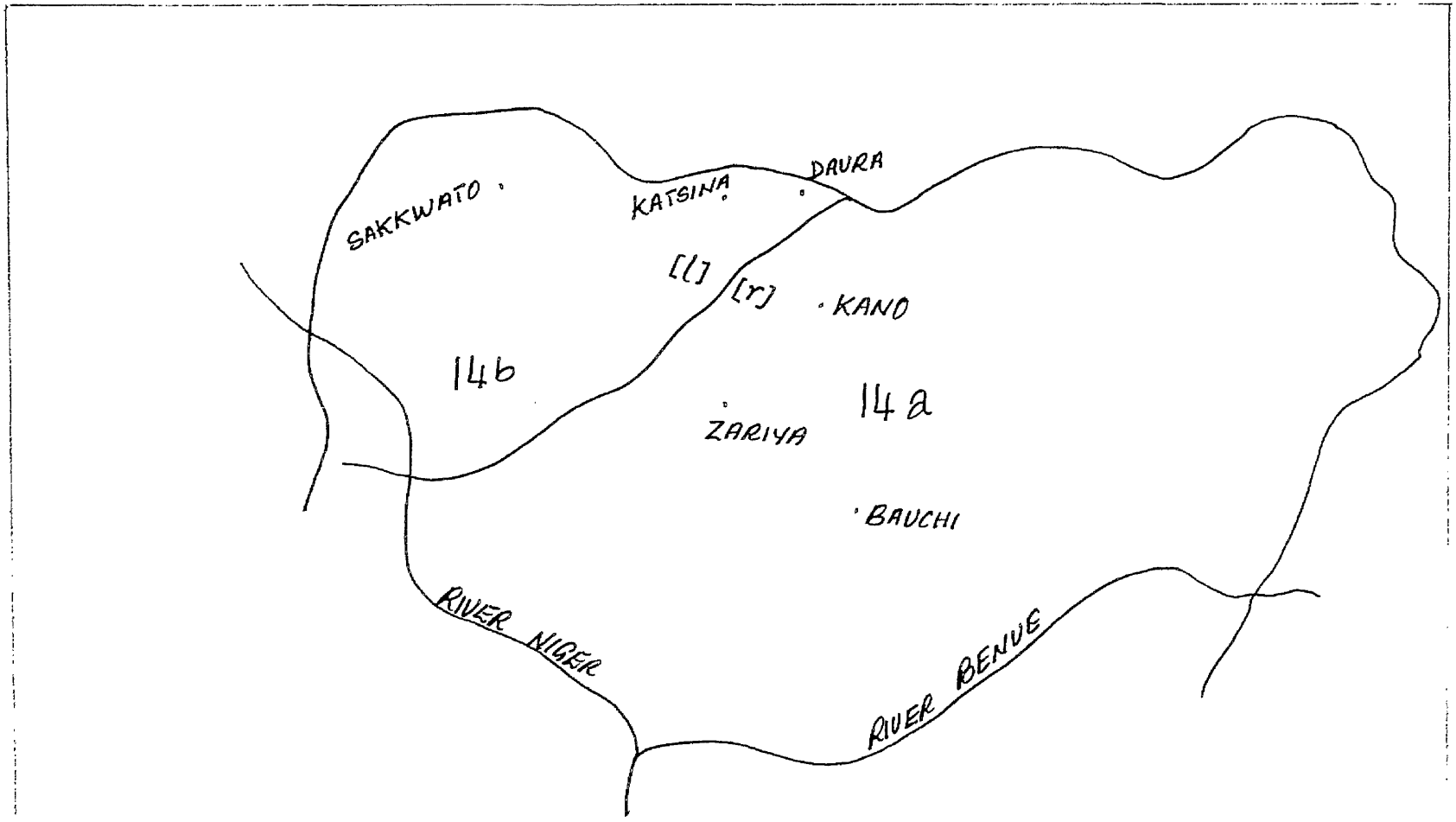
Map 11. Isogloss of regional variation 11.



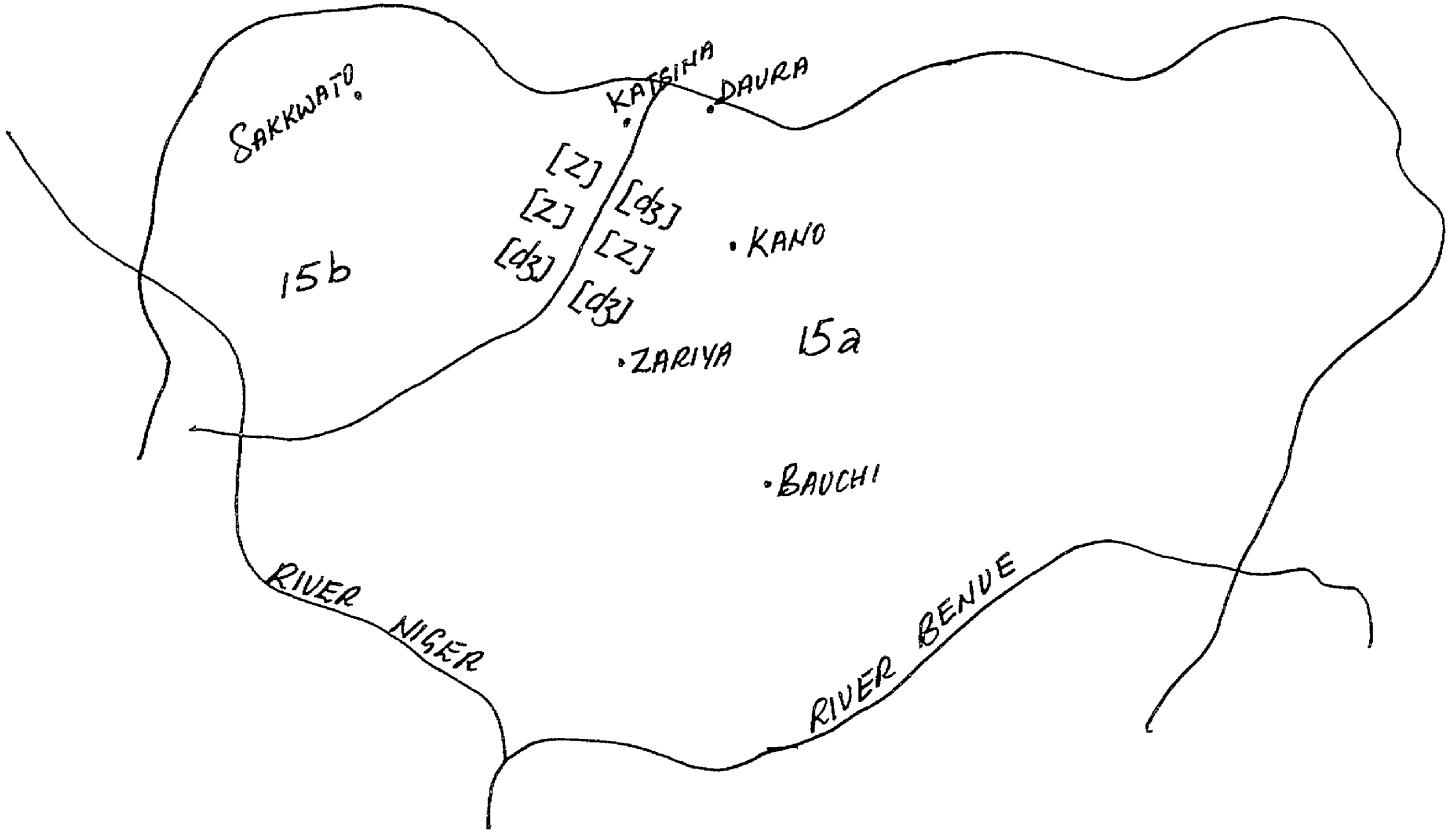
Map 12. Isogloss of regional variation 12.



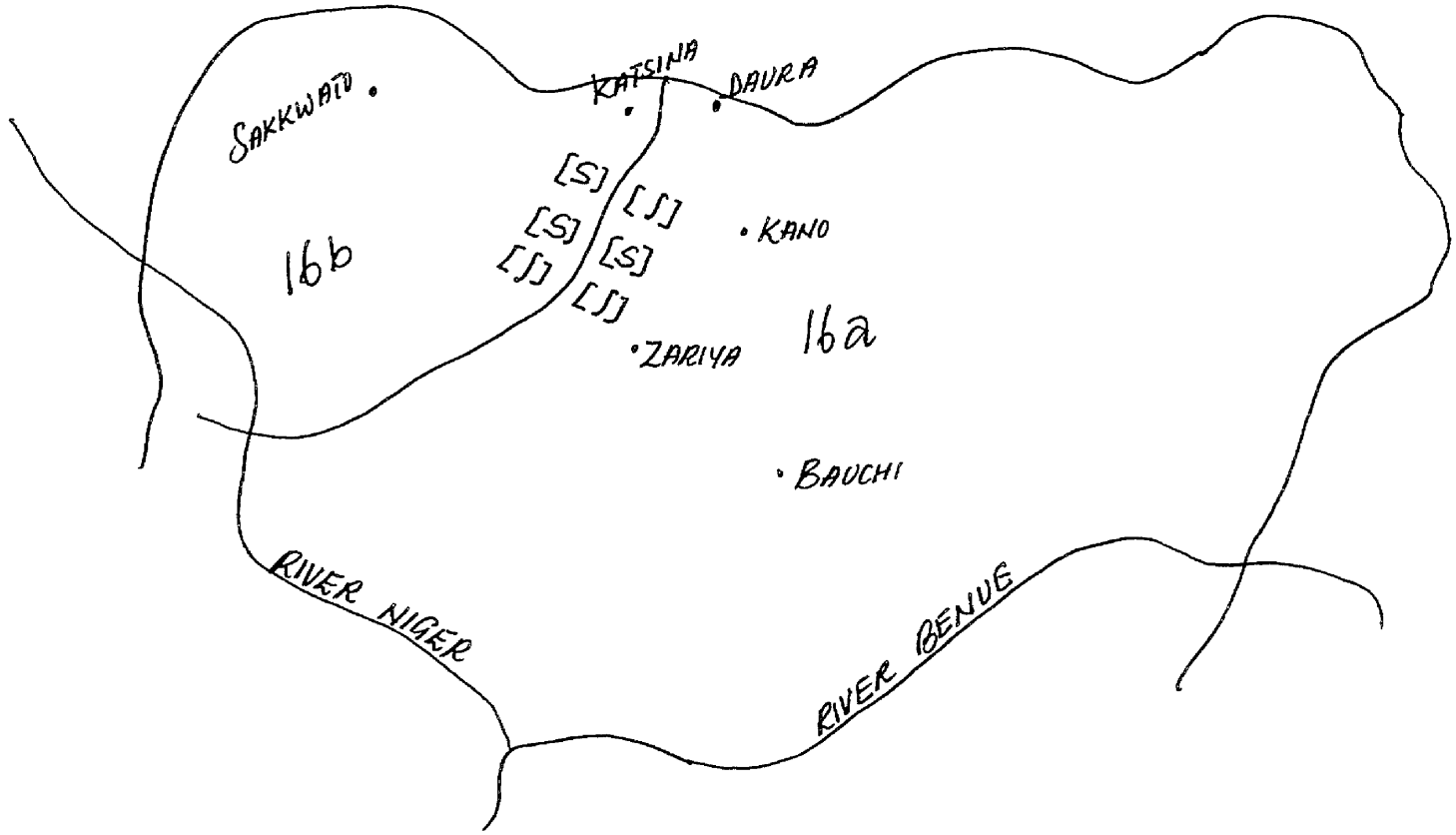
Map 13. Isogloss of regional variation 13.



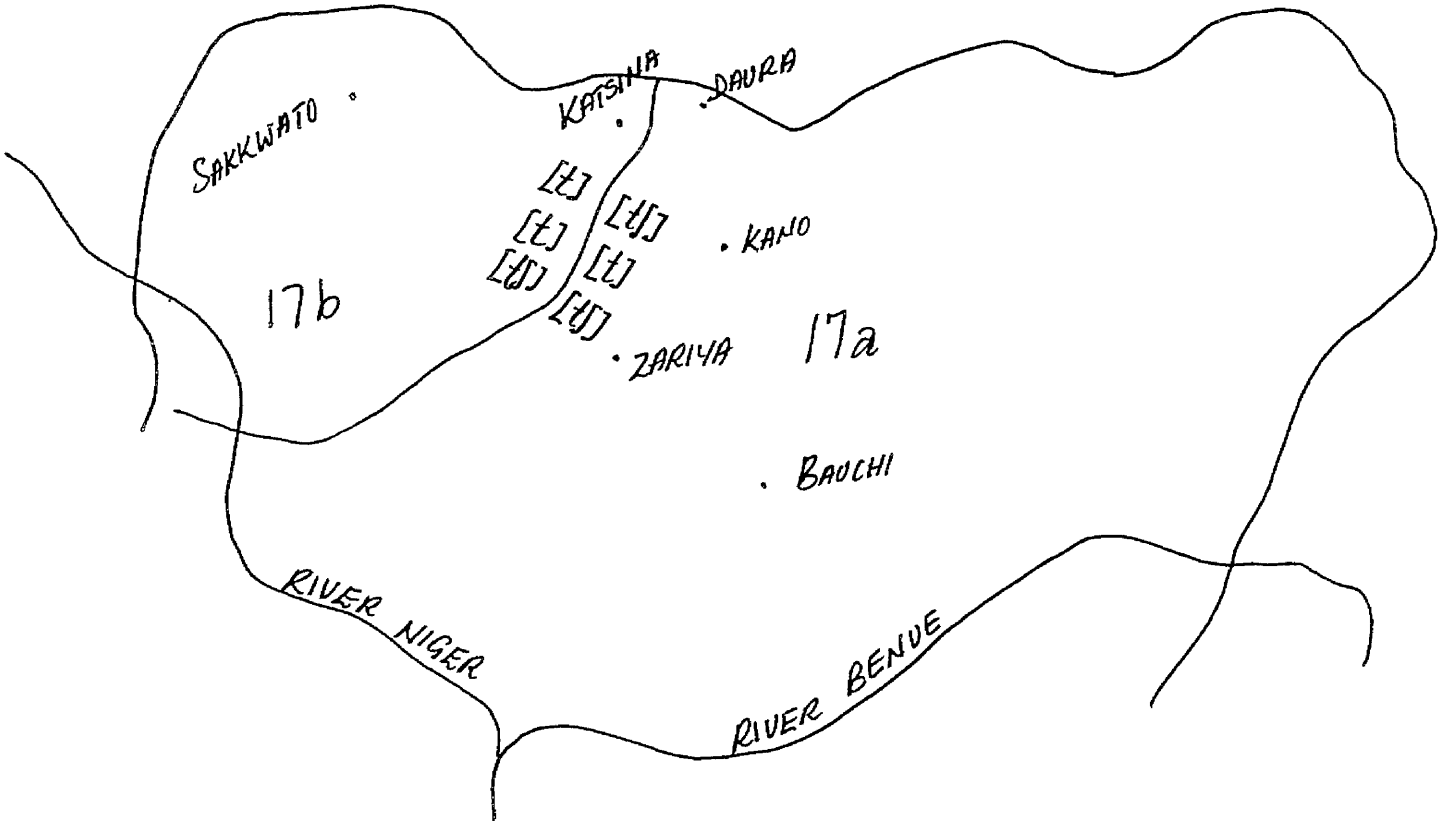
Map 14. Isogloss of regional variation 14.



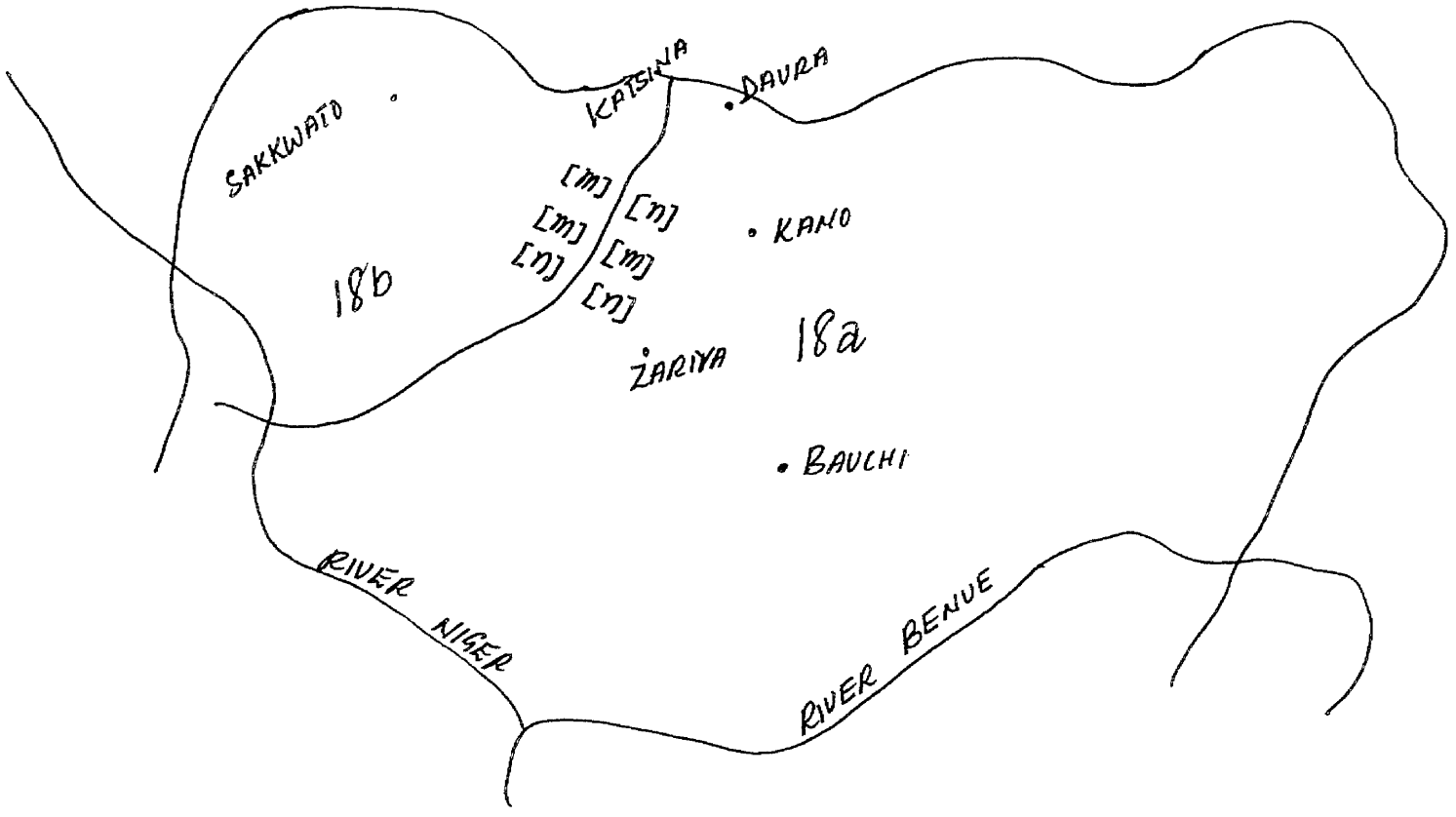
Map 15. Isogloss of regional variation 15.



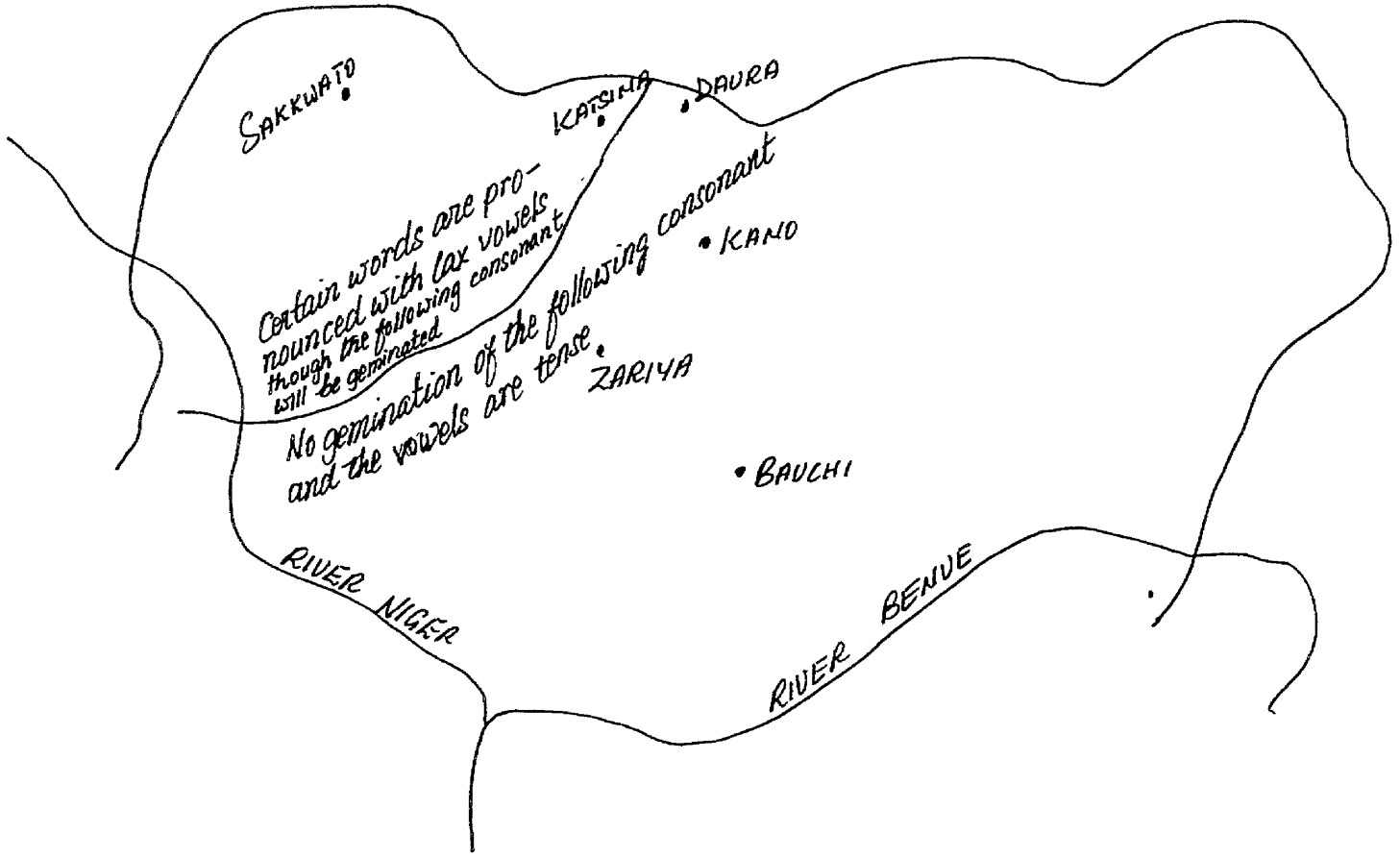
Map 16. Isogloss of regional variation 16.



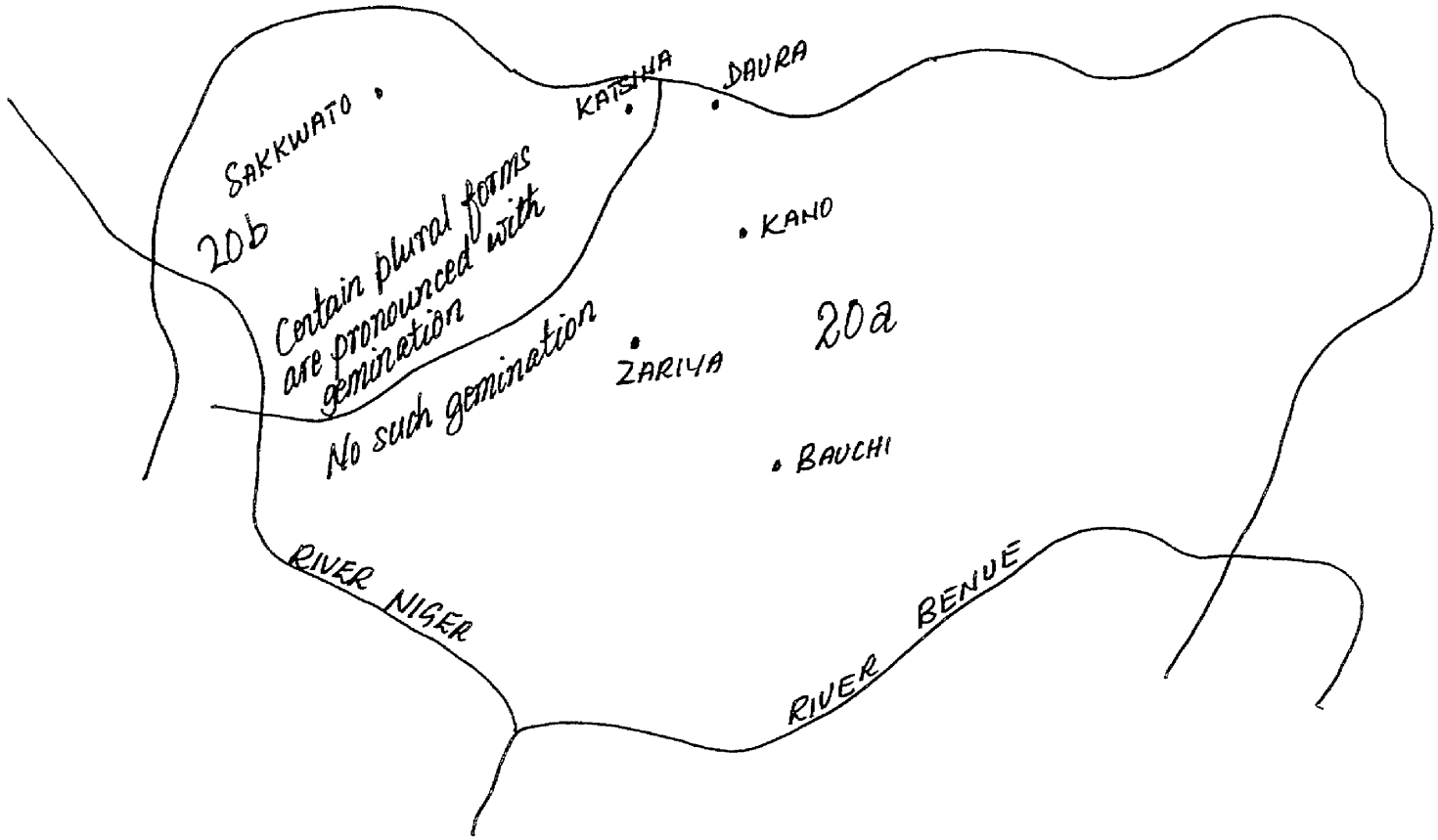
Map 17. Isogloss of regional variation 17.



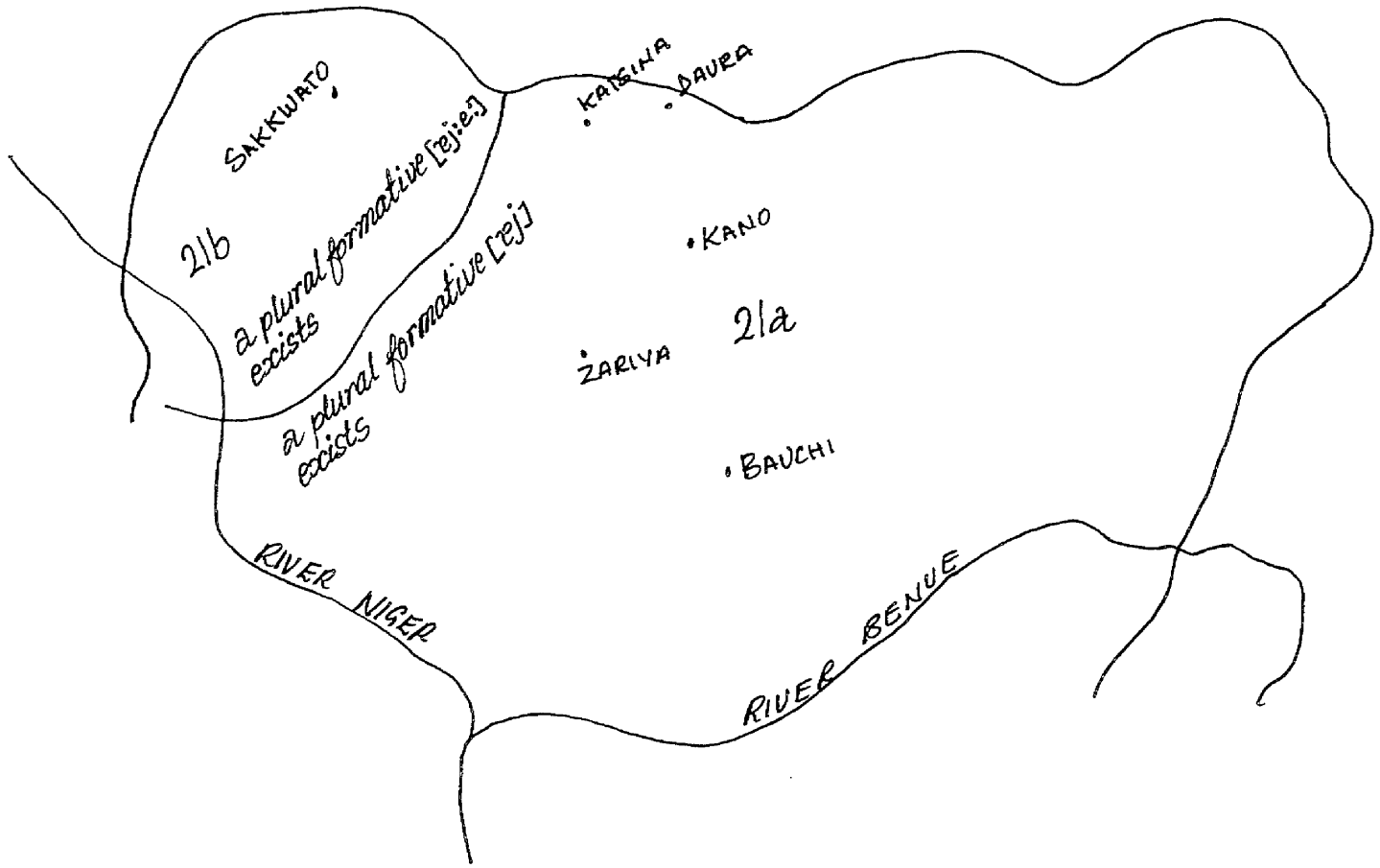
Map 18. Isogloss of regional variation 18.



Map 19. Isogloss of regional variation 19.



Map 20. Isogloss of regional variation 20.



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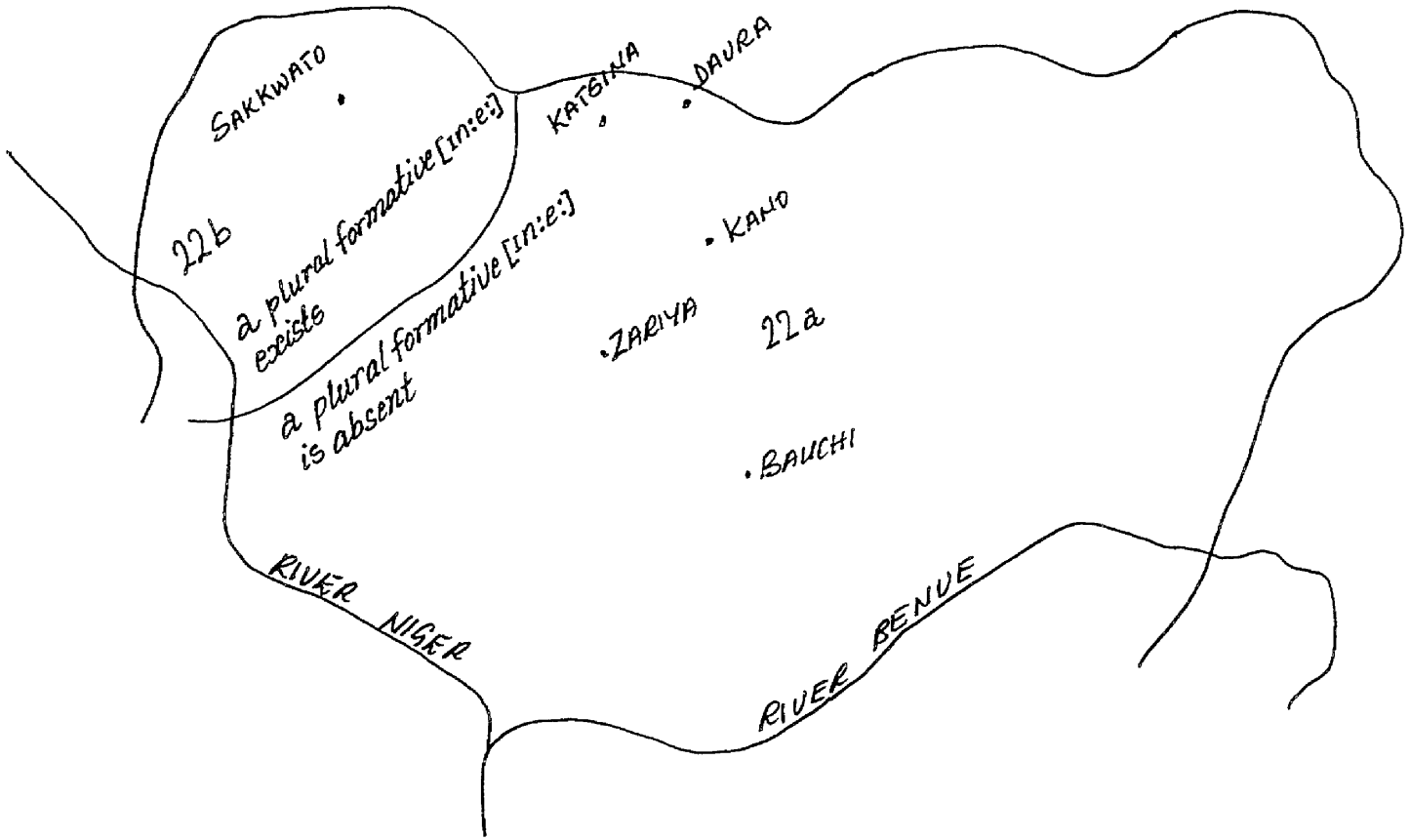
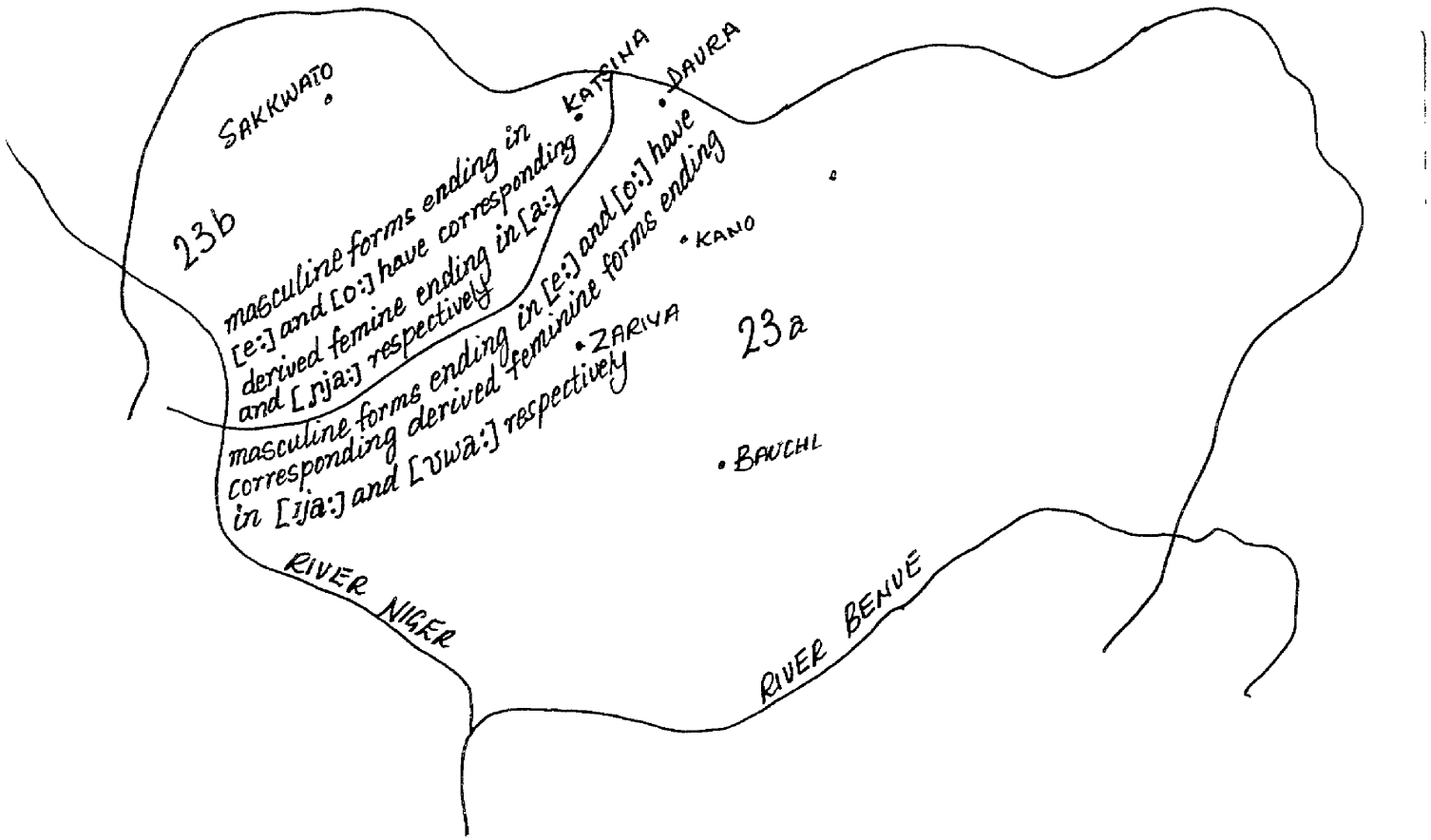
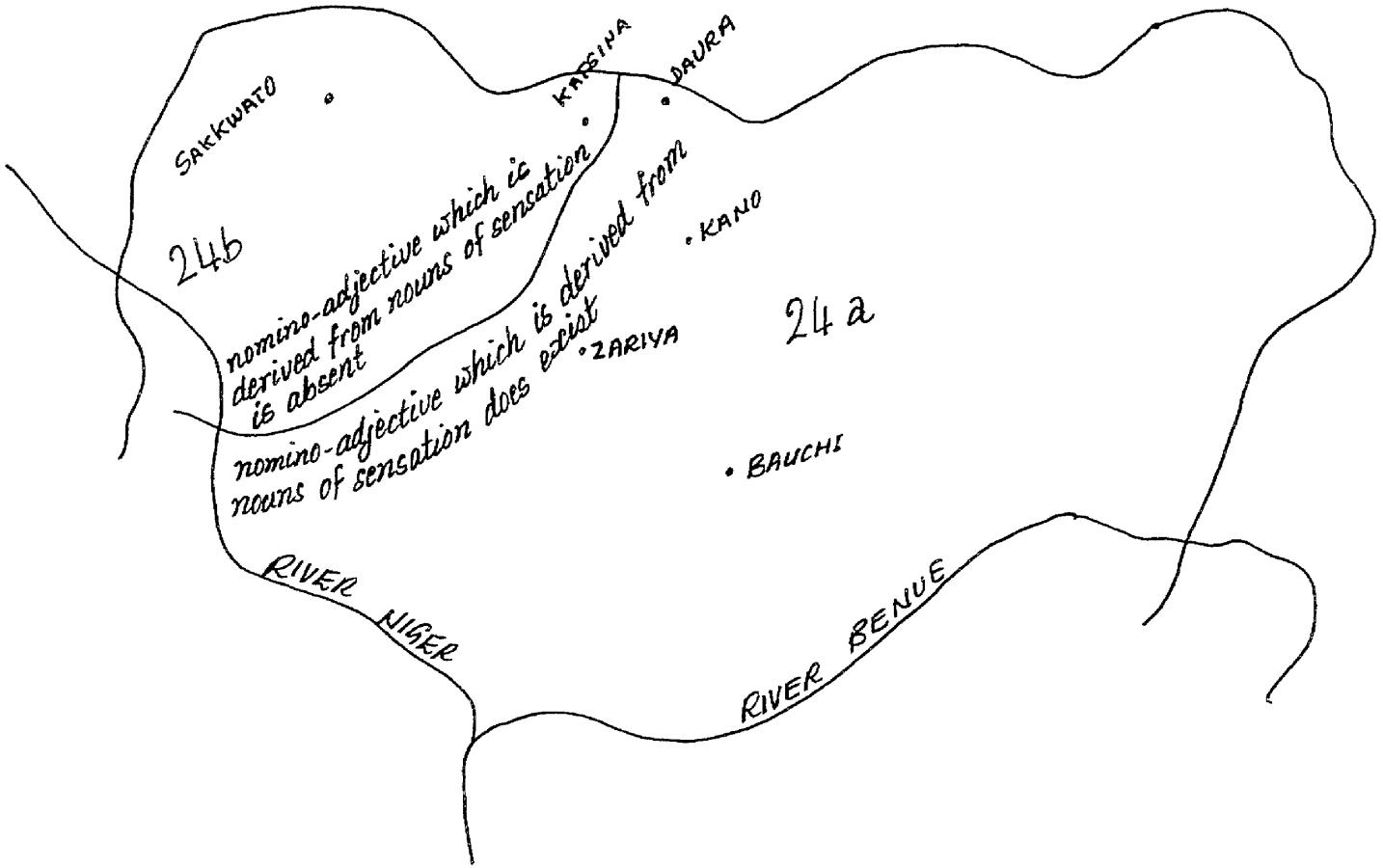


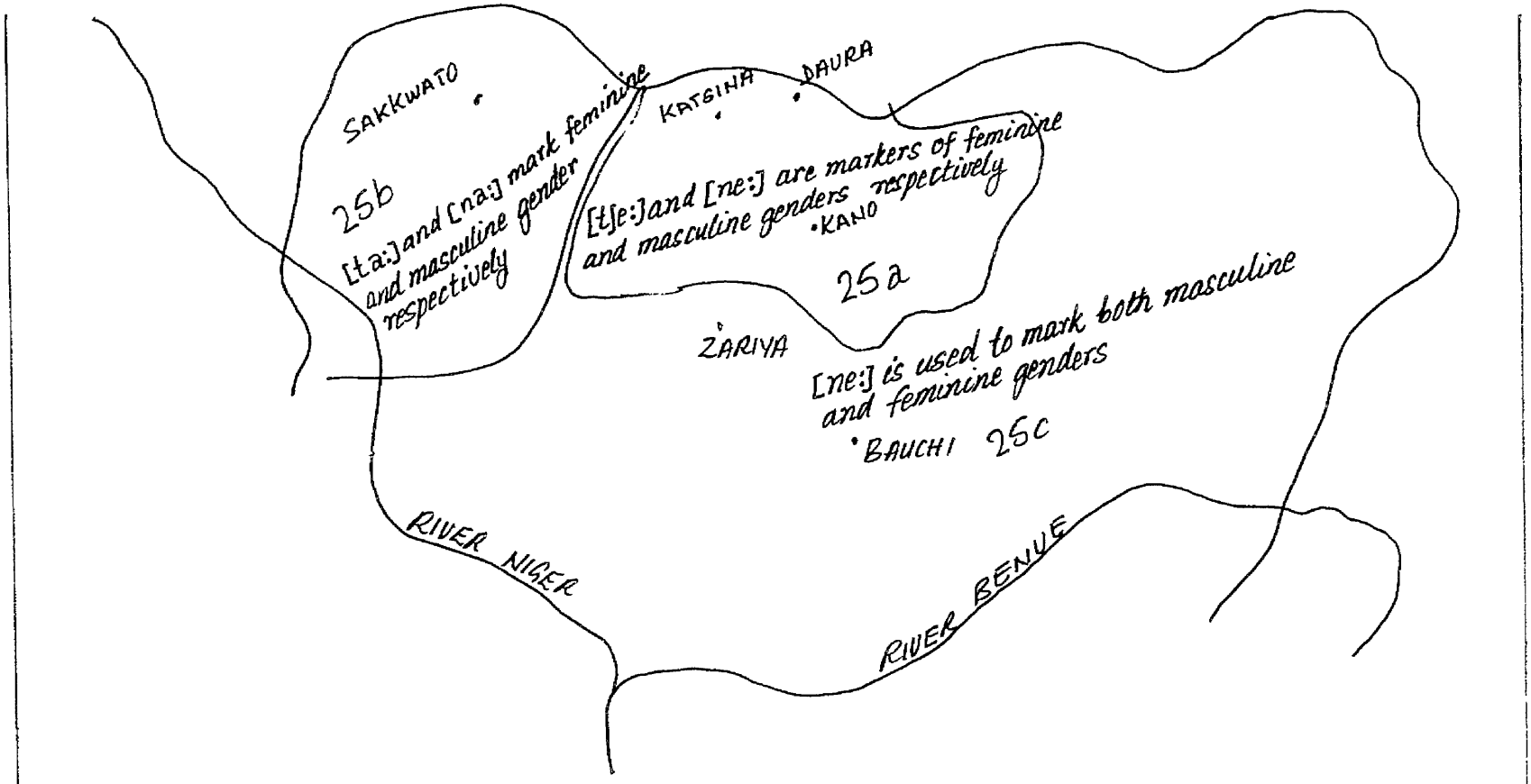
Map 22. Isogloss of regional variation 22.



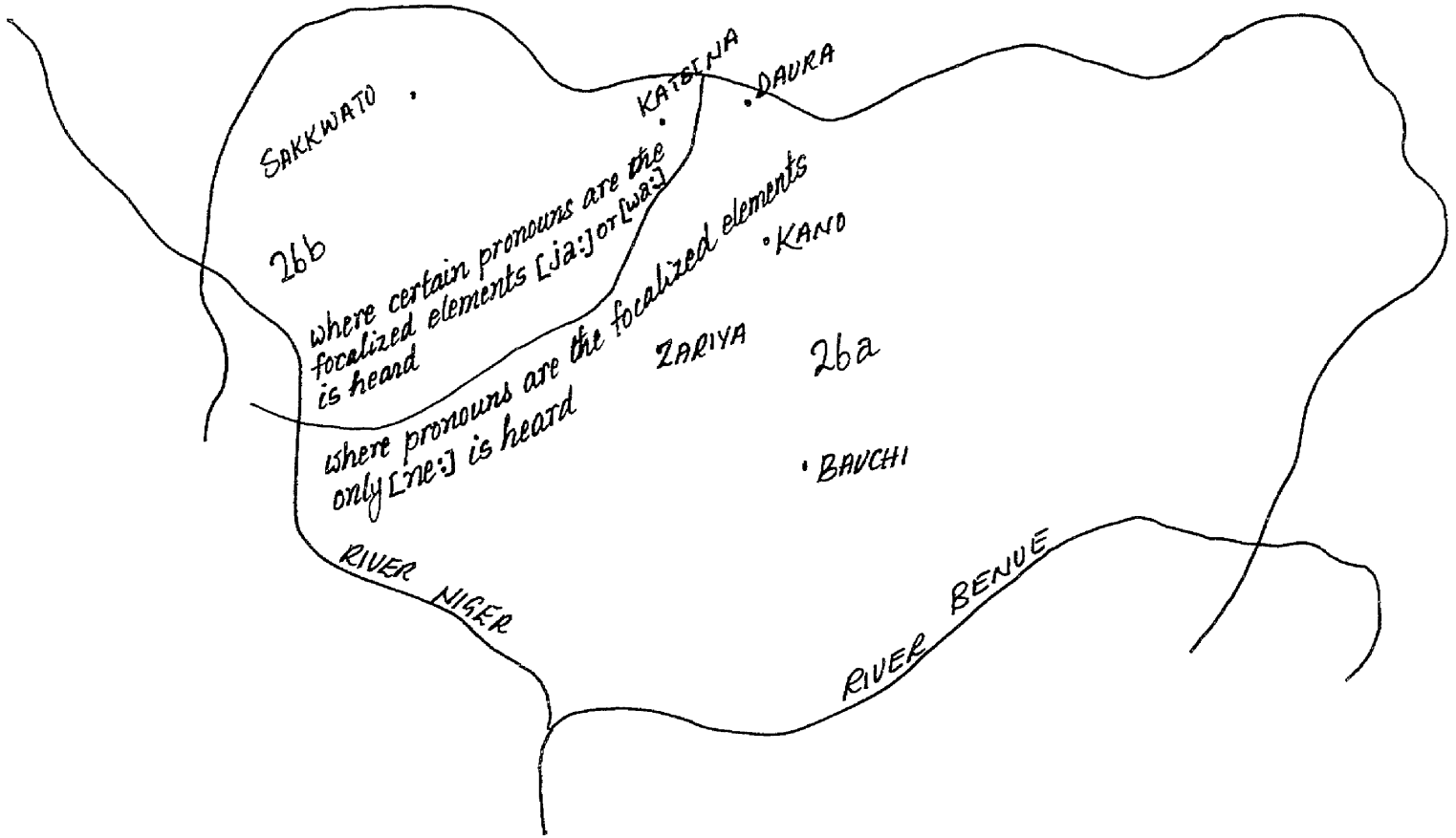
Map 23. Isogloss of regional variation 23.



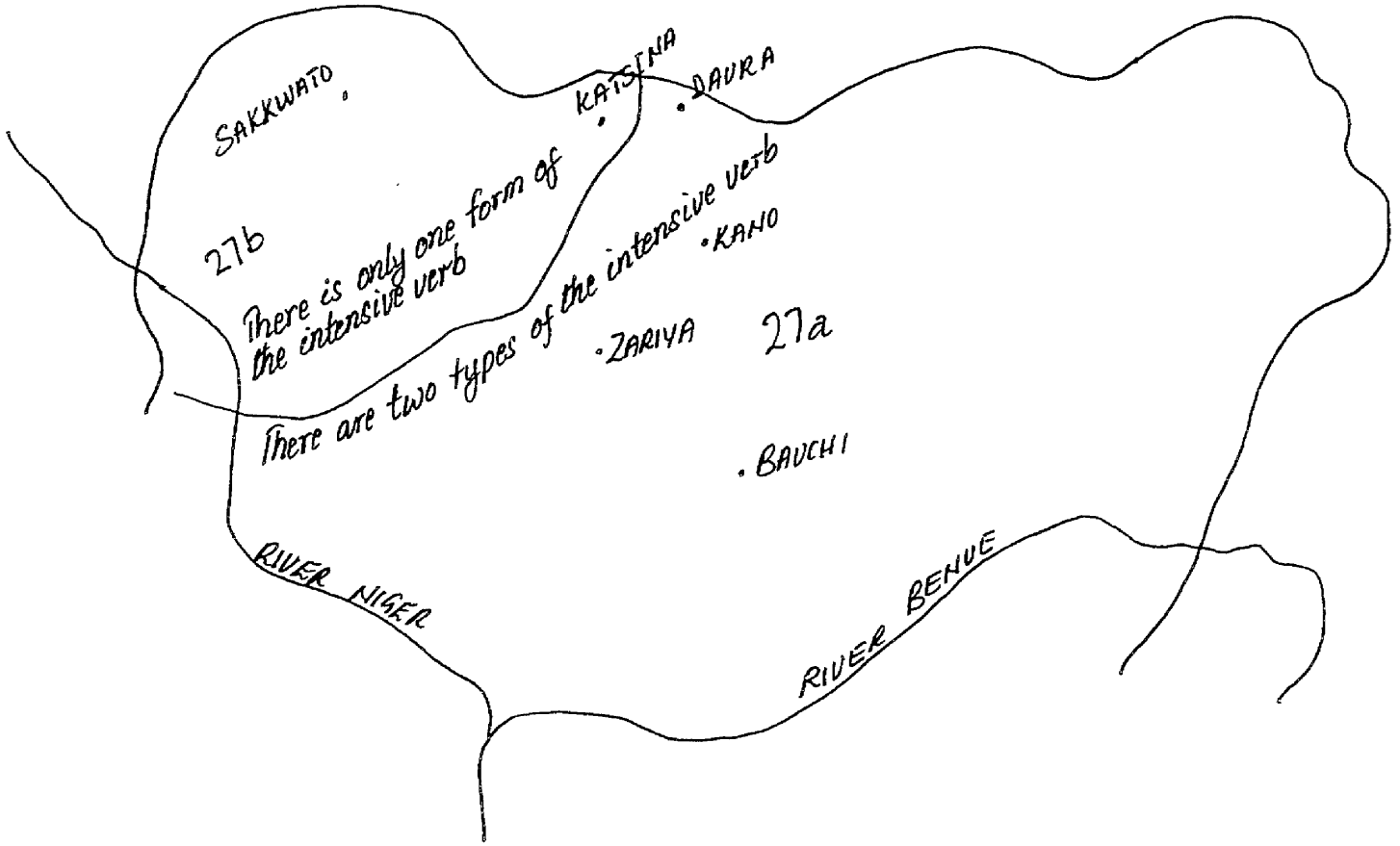
Map 24. Isogloss of regional variation 24.



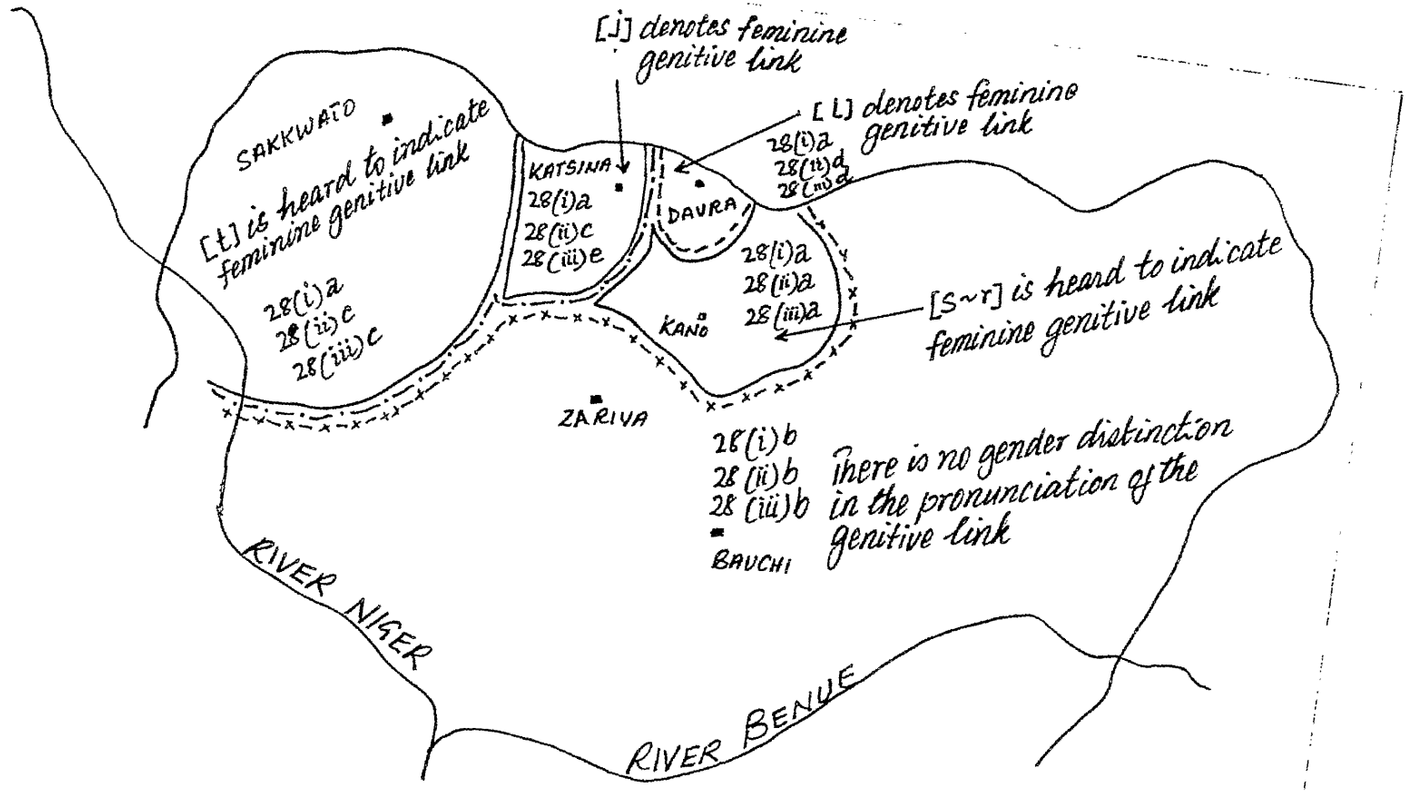
Map 25. Isogloss of regional variation 25.



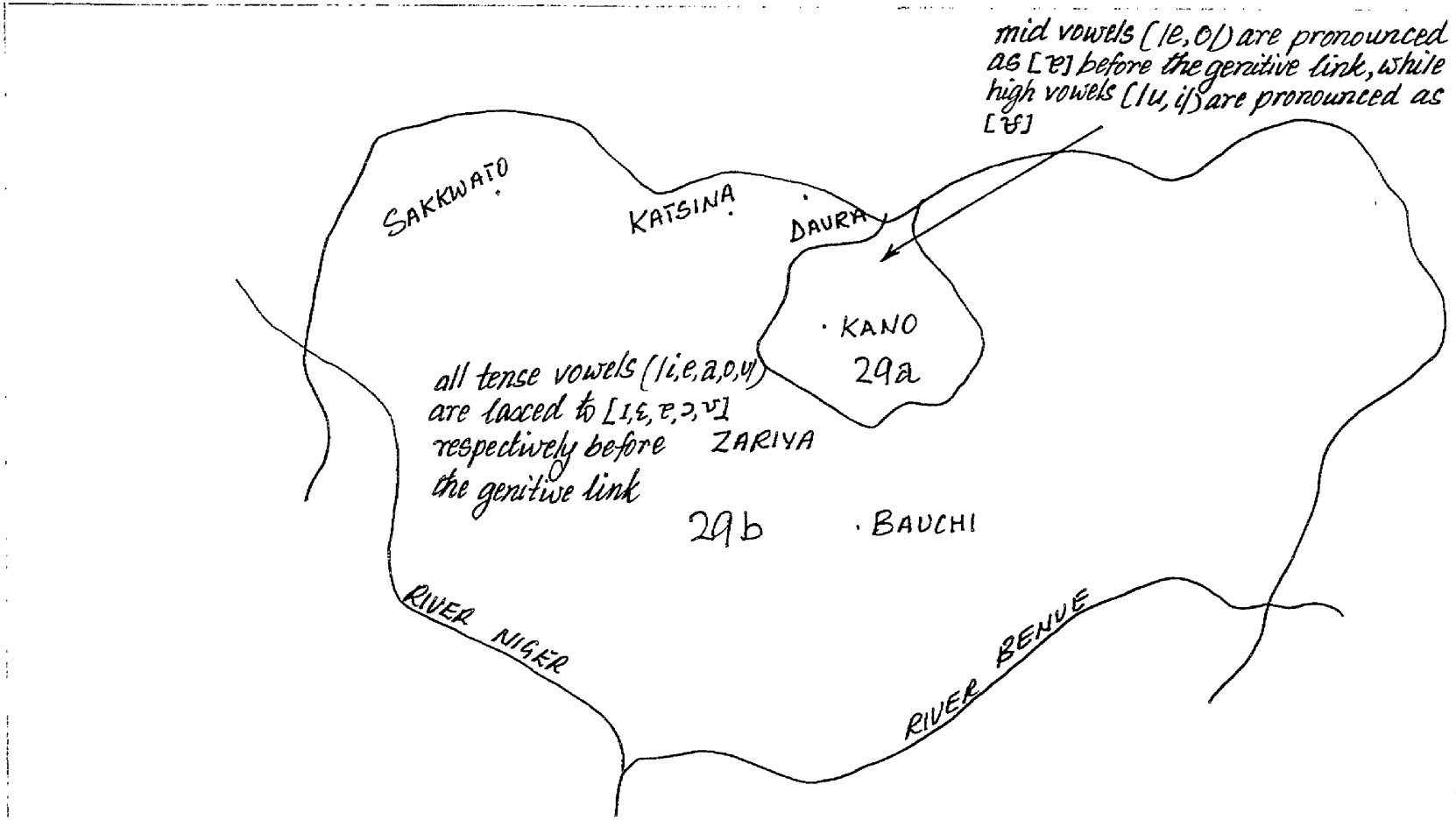
Map 26. Isogloss of regional variation 26.



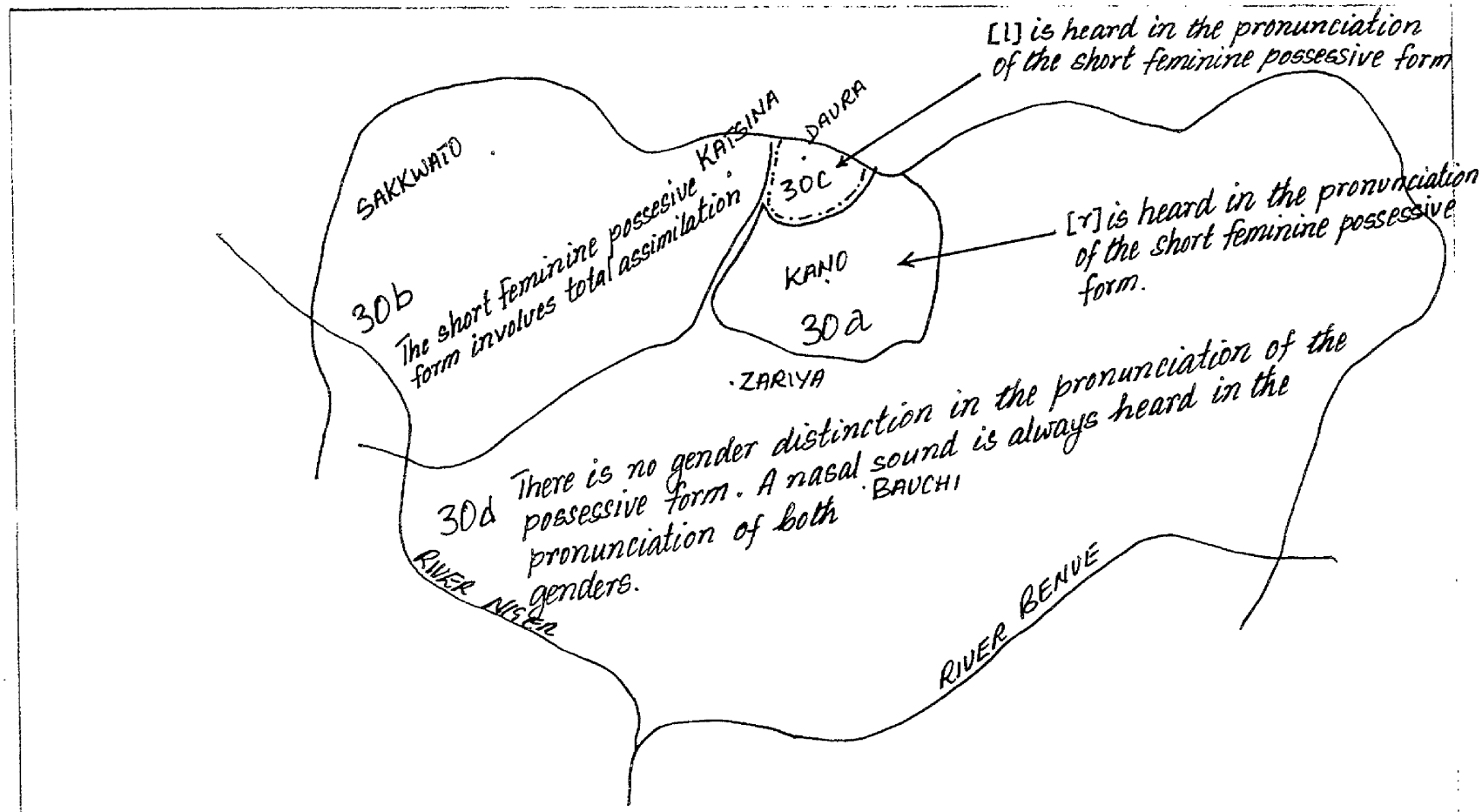
Map 27. Isogloss of regional variation 27.



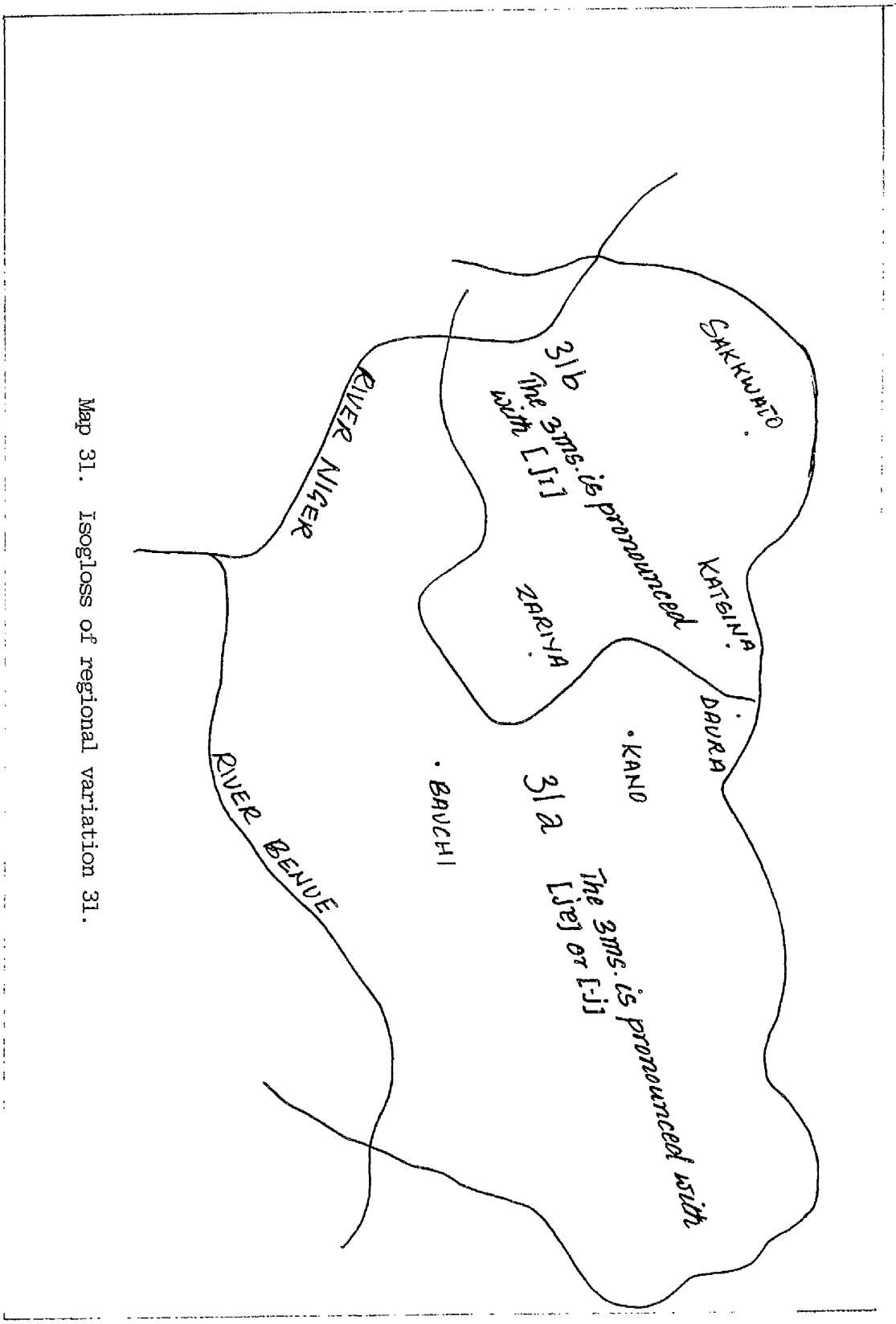
Map 28. Isogloss of regional variation 28.



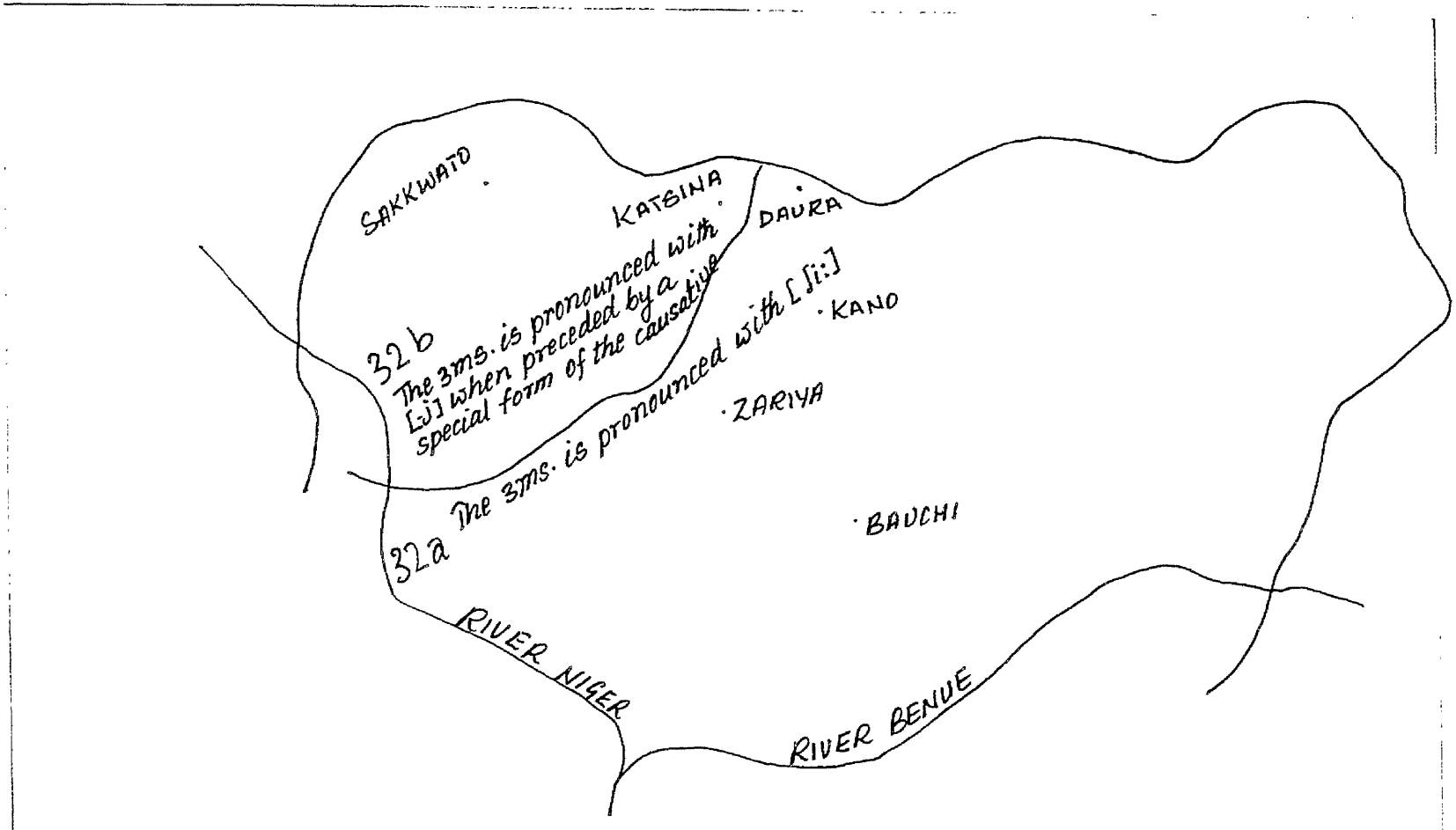
Map 29. Isogloss of regional variation 29.



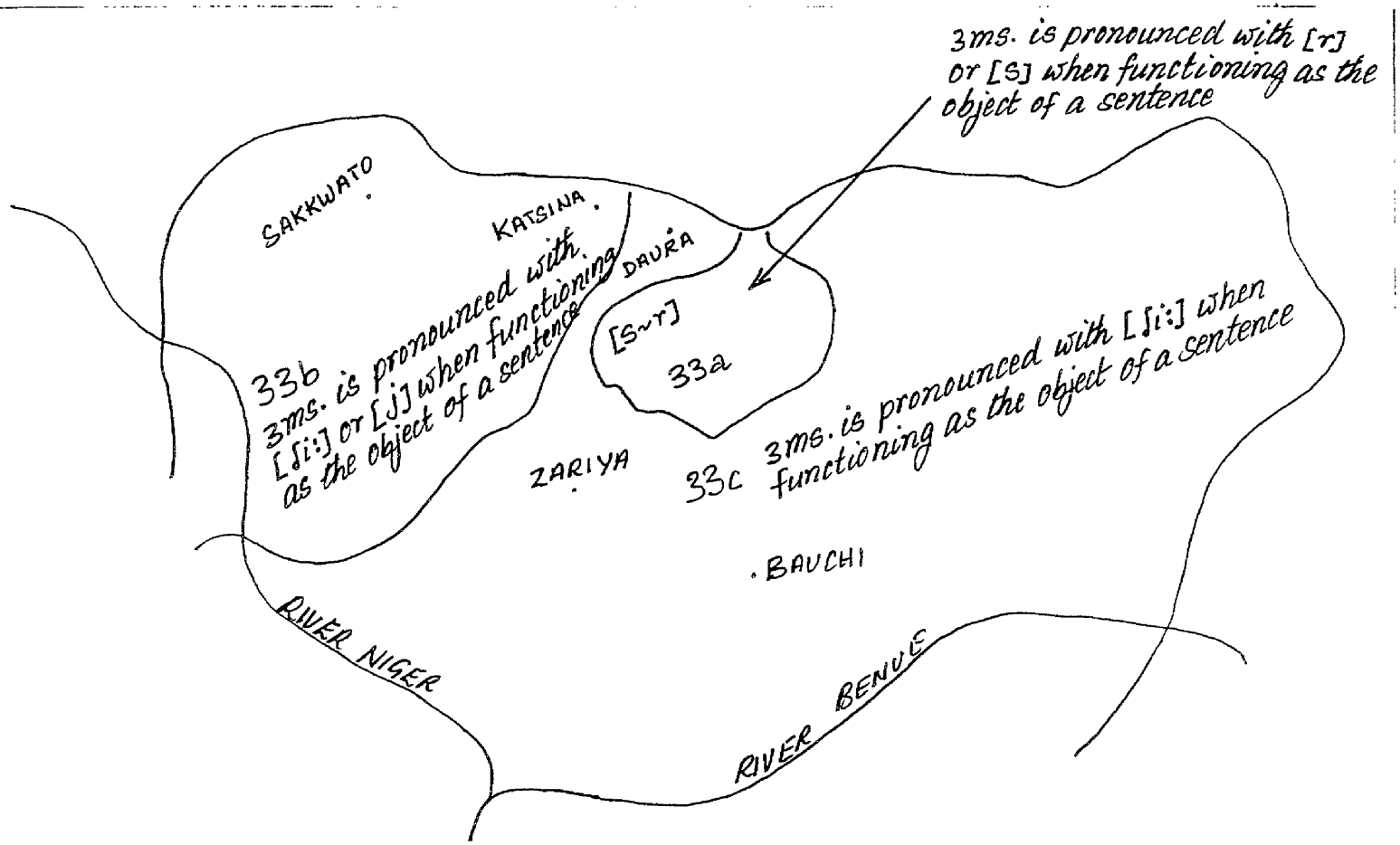
Map 30. Isogloss of regional variation 30.



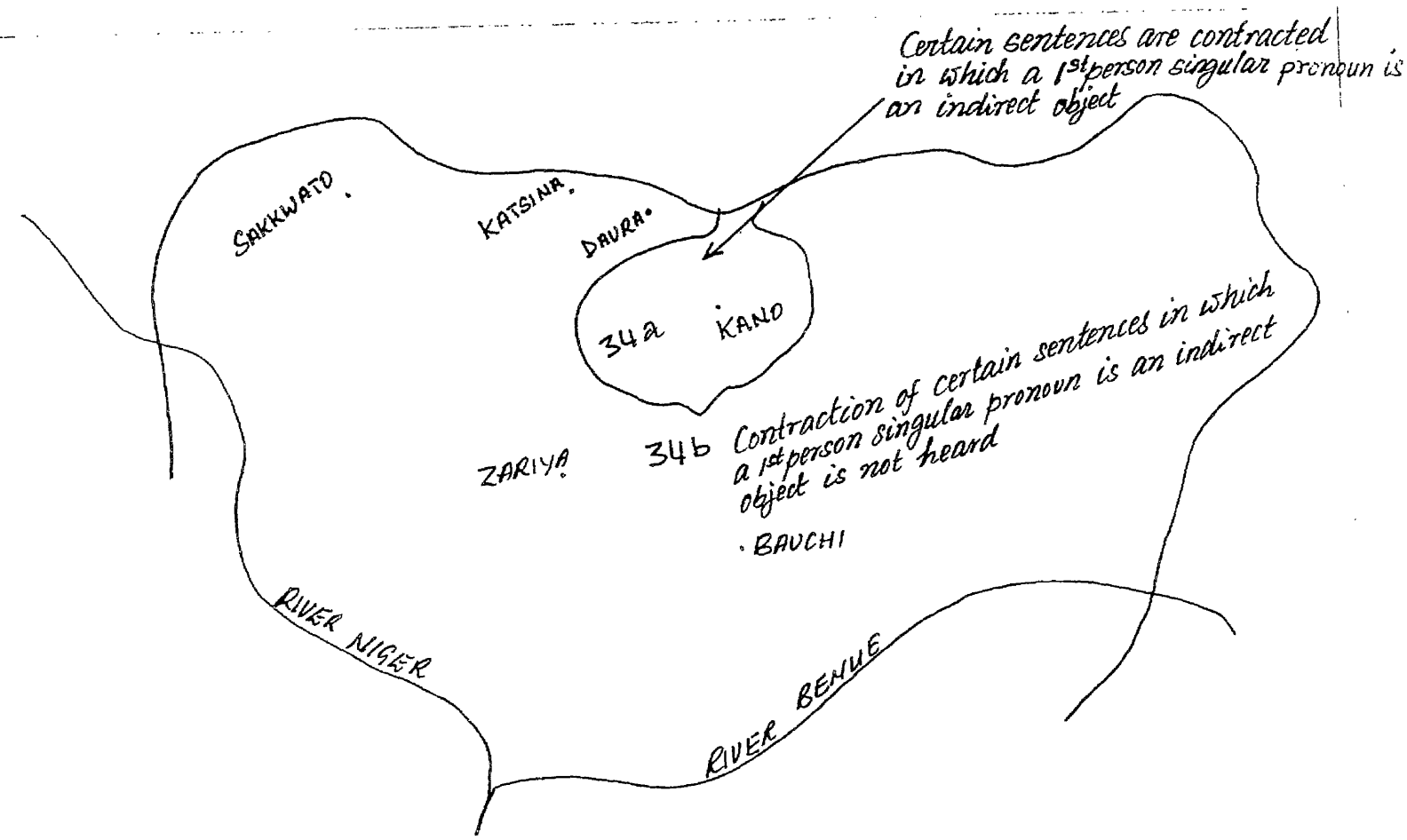
Map 31. Isogloss of regional variation 31.



Map 32. Isogloss of regional variation 32.

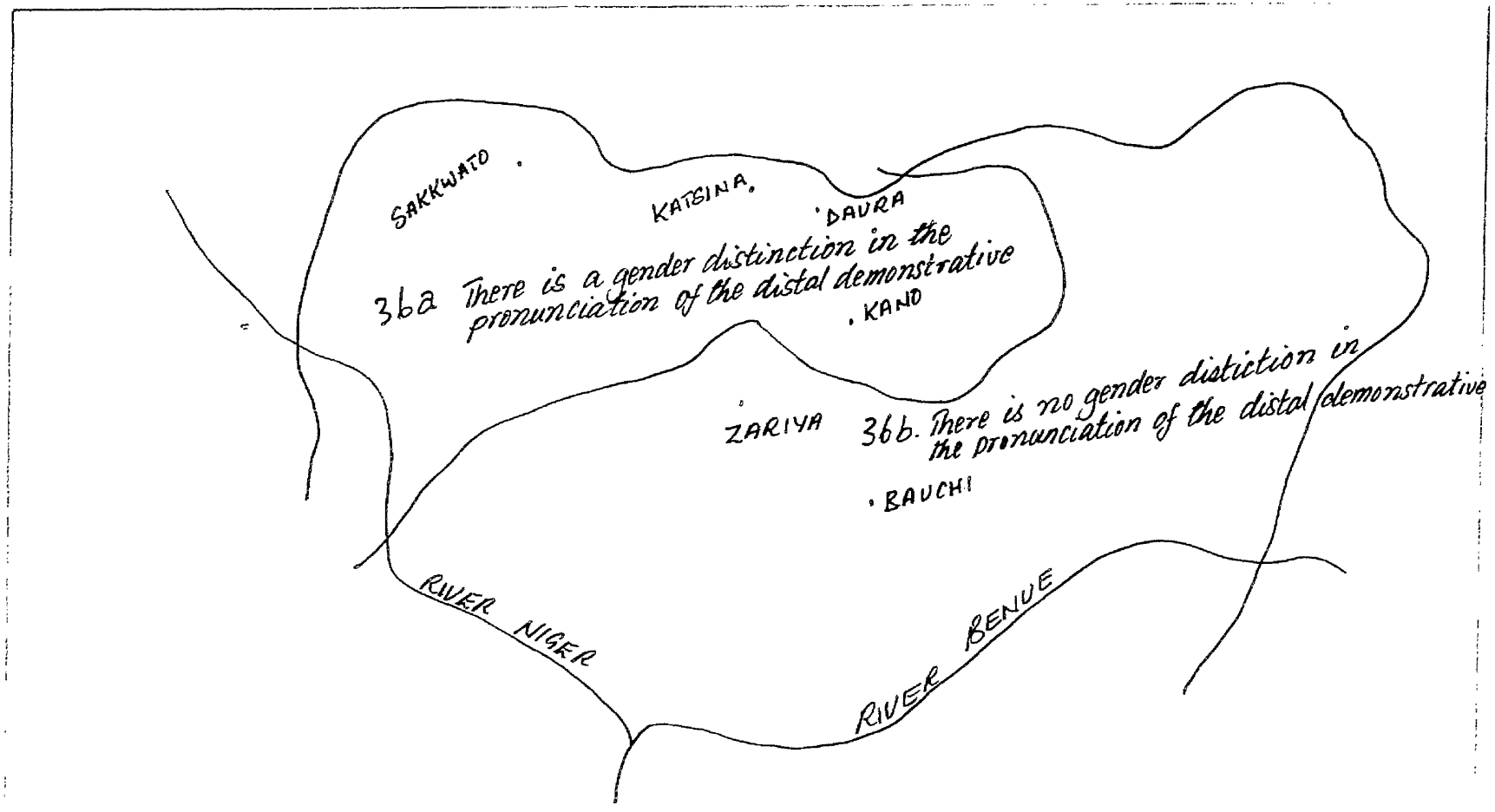


Map 33. Isogloss of regional variation 33.

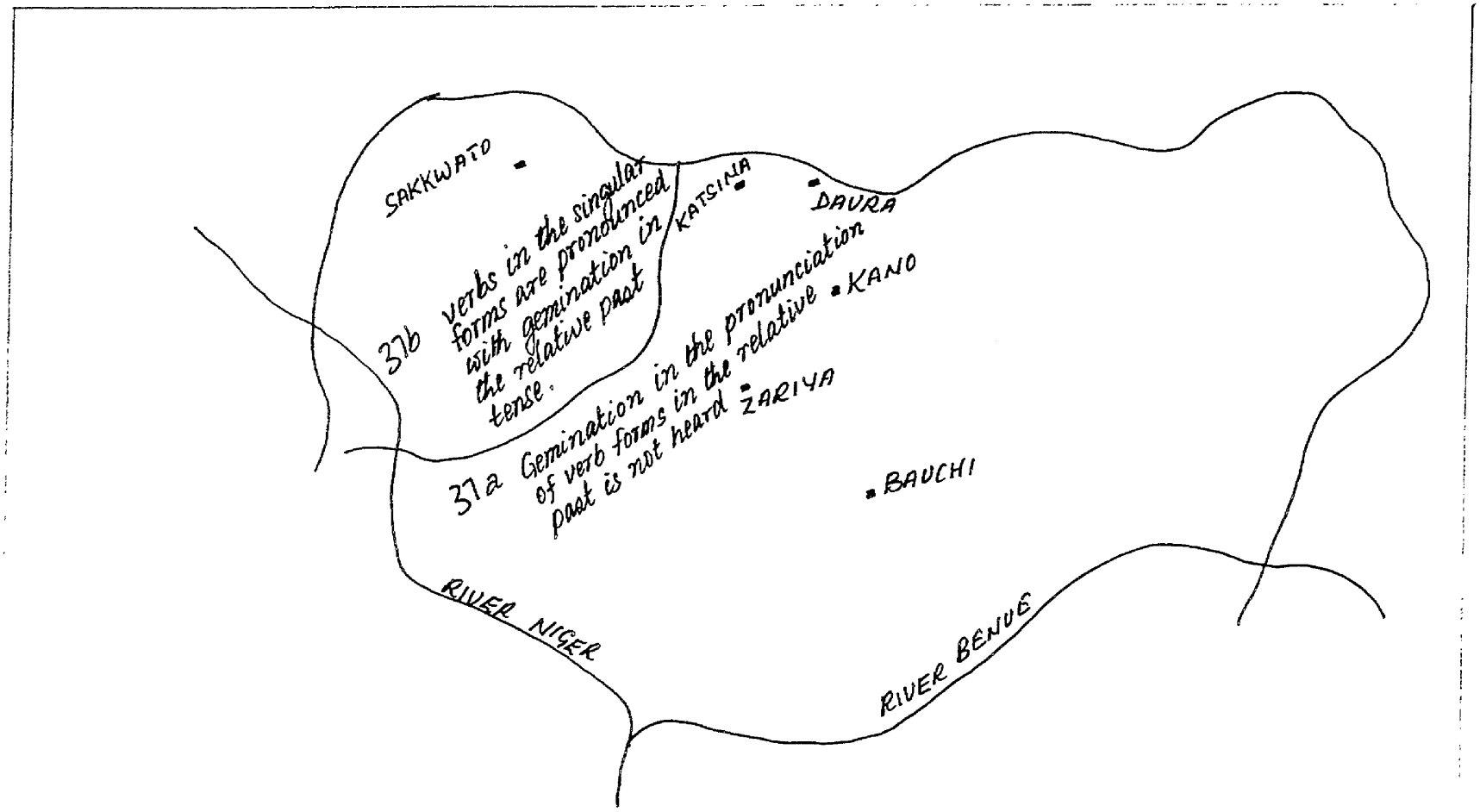


Map 34. Isogloss of regional variation 34.

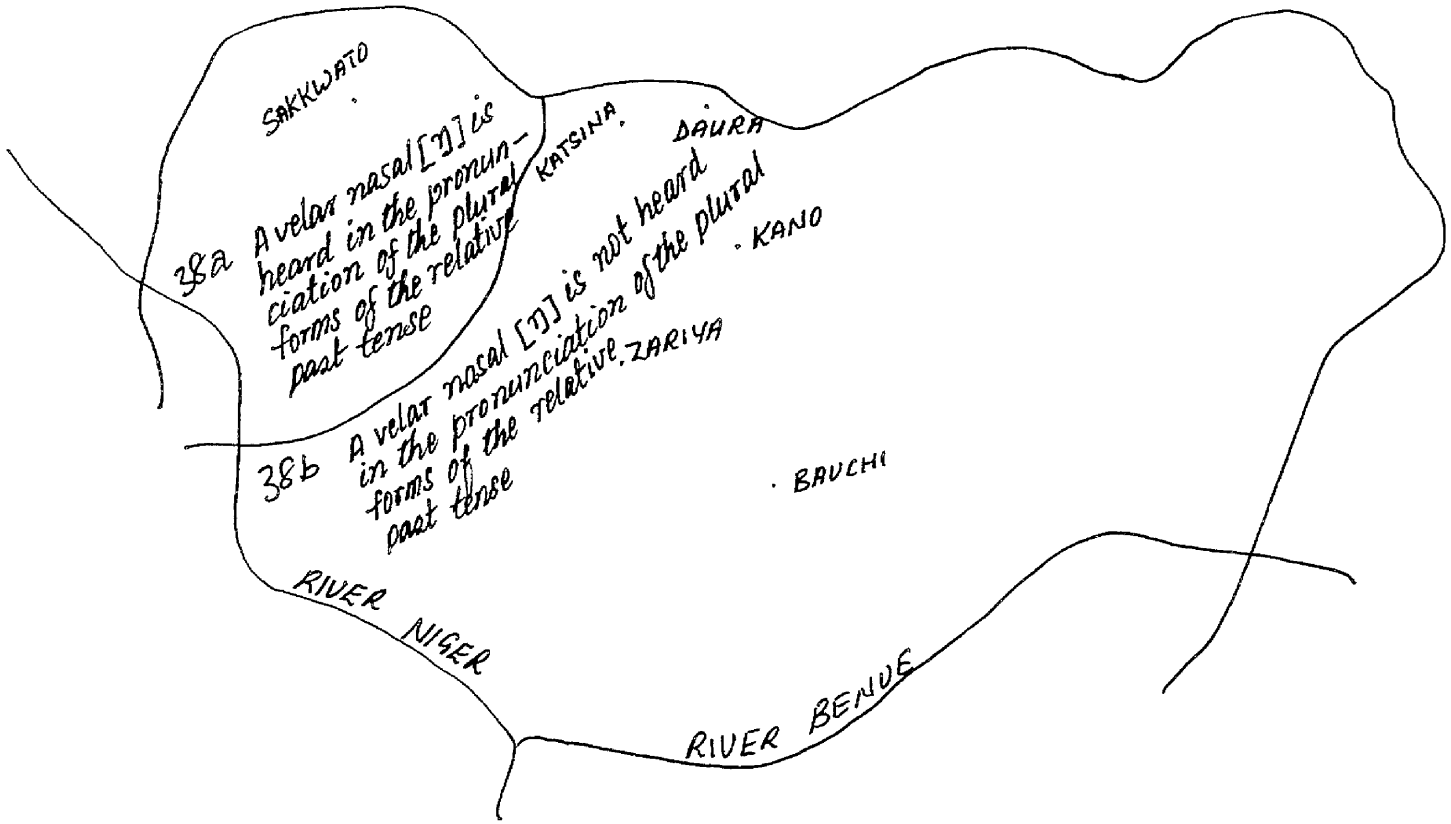
Map 35. Isogloss of regional variation 35.



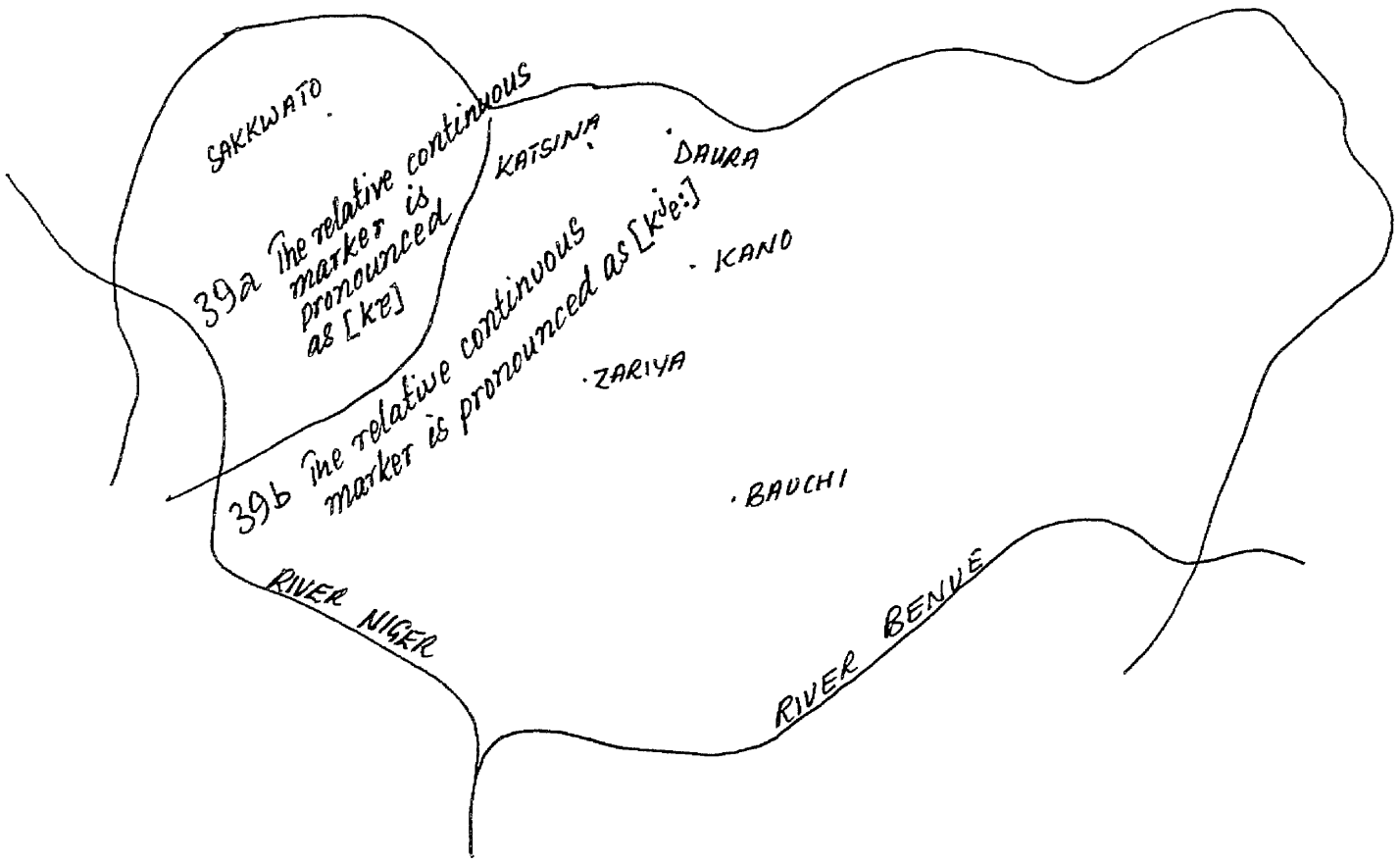
Map 36. Isogloss of regional variation 36.



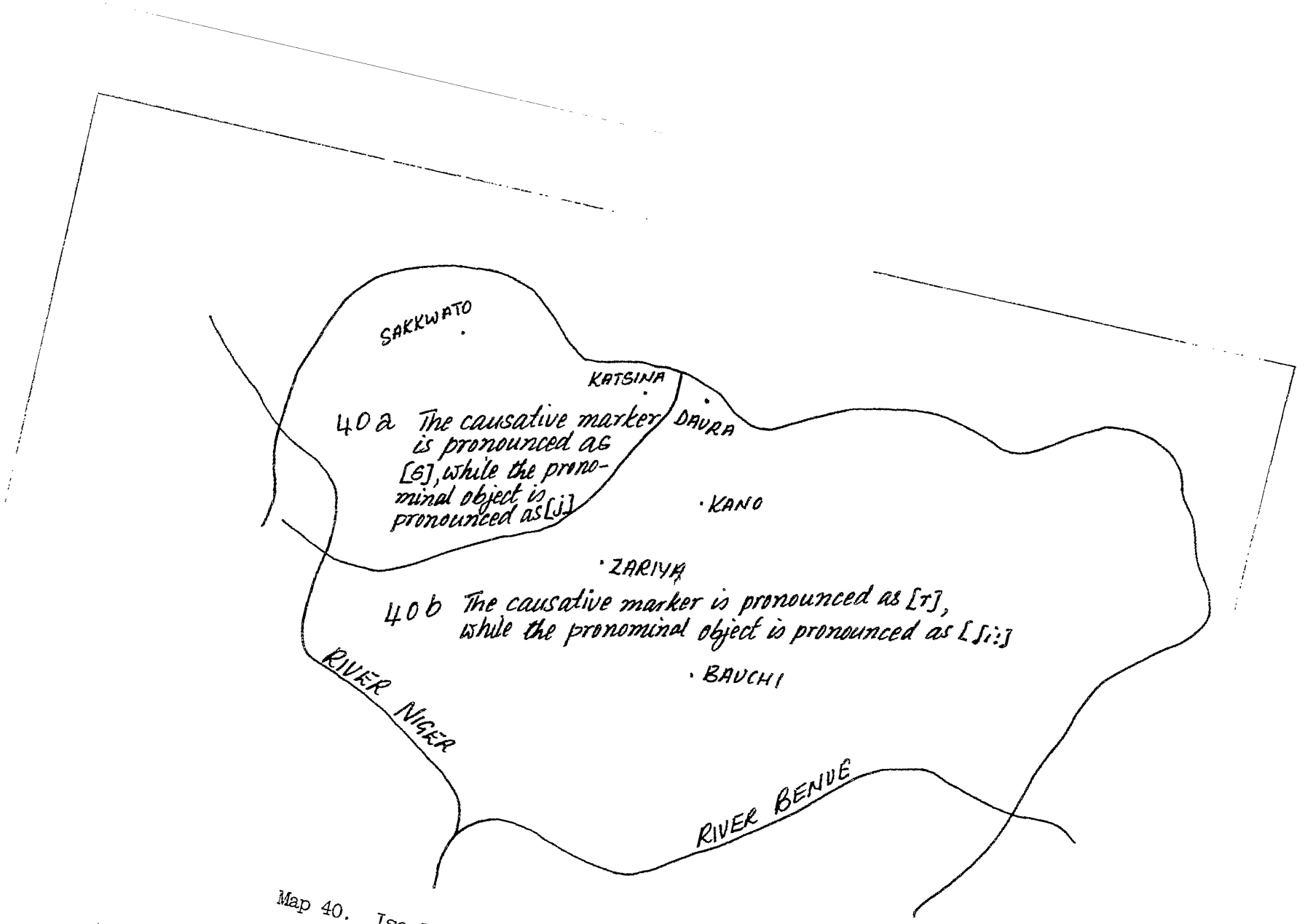
Map 37. Isogloss of regional variation 37.



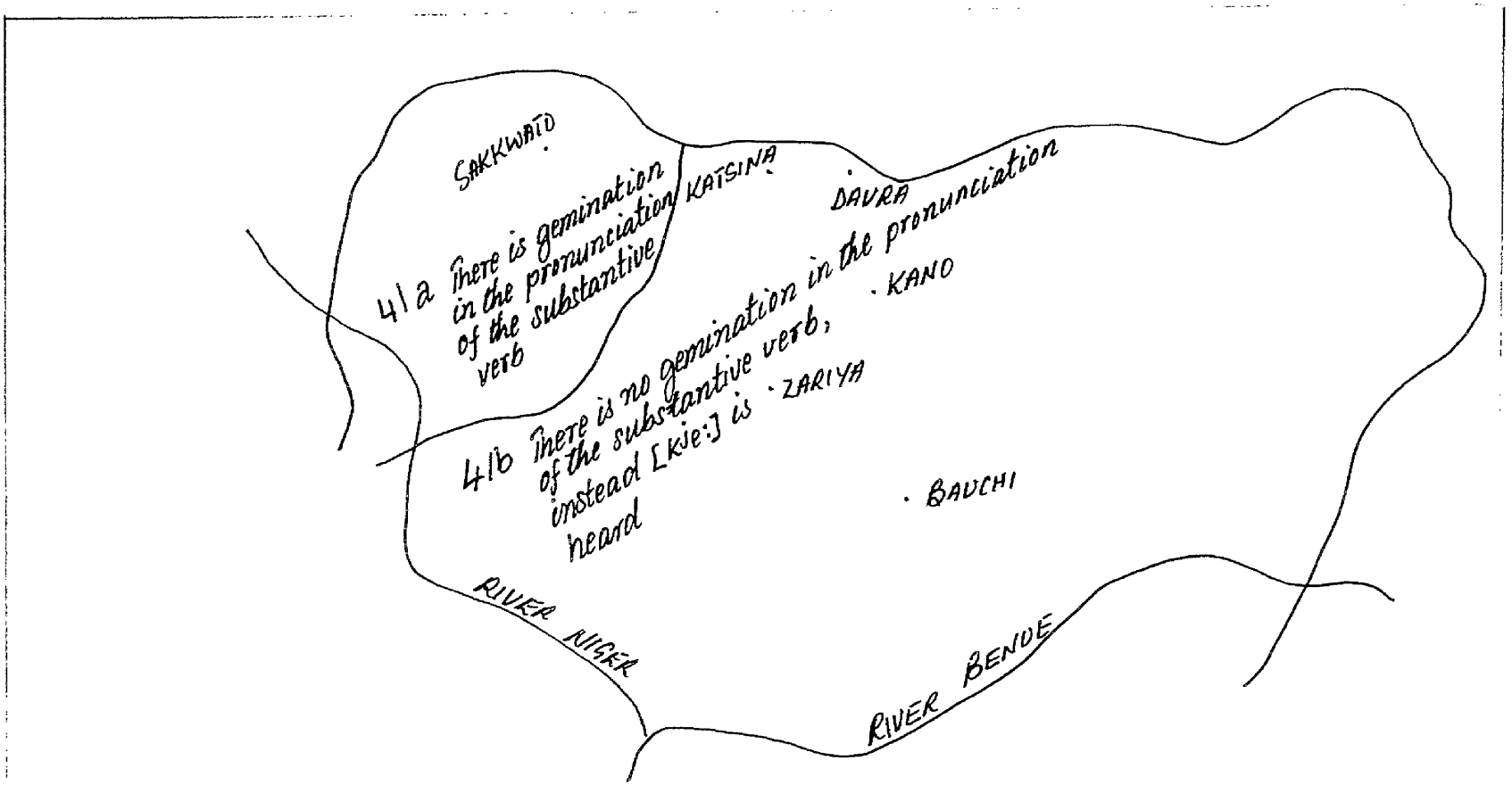
Map 38. Isogloss of regional variation 38.



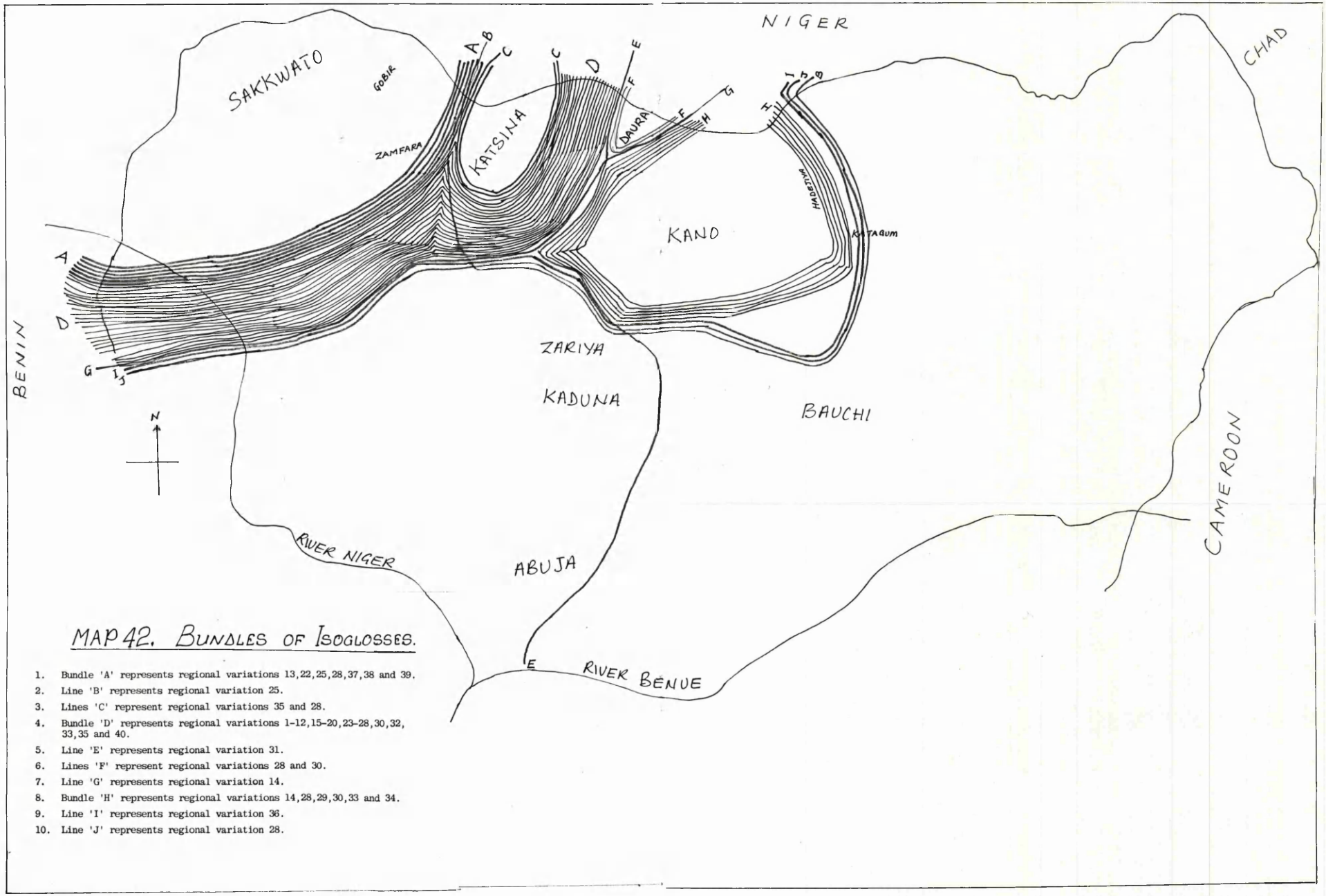
Map 39. Isogloss of regional variation 39.



Map 40. Isogloss of regional variation 40.



Map 41. Isogloss of regional variation 41.



MAP 42. BUNDLES OF ISOGLOSSES.

1. Bundle 'A' represents regional variations 13,22,25,28,37,38 and 39.
2. Line 'B' represents regional variation 25.
3. Lines 'C' represent regional variations 35 and 28.
4. Bundle 'D' represents regional variations 1-12,15-20,23-28,30,32, 33,35 and 40.
5. Line 'E' represents regional variation 31.
6. Lines 'F' represent regional variations 28 and 30.
7. Line 'G' represents regional variation 14.
8. Bundle 'H' represents regional variations 14,28,29,30,33 and 34.
9. Line 'I' represents regional variation 36.
10. Line 'J' represents regional variation 28.

Looking at these maps we find that twenty-six out of the forty-one isoglosses (see maps 1-12, 15-20, 23-28, 30, 32, 33, 35 and 40) all run along the same geographical (approximately) SE-NW line, i.e. they present "a significant 'bundling' effect" (see map 42).

On the basis of the distribution of the isoglosses it emerges that there is really one substantial linguistic division, namely, that separating the speech of people to the NW of the bundle from that of those living SE of it. Thus we conclude that there are two major dialects of Hausa. Although on a strictly geographical basis we might refer to these dialects as SE-Hausa and NW-Hausa, for simplicity we prefer to call them East-Hausa and West-Hausa (hence-forth EH and WH respectively.)

Though this classification is based on the number of commonly shared linguistic features, we take into account certain other idiosyncratic linguistic features which create further sub-divisions within each of the two main divisions.

2.2 Lexicostatistics

While phonological and morphological isoglosses provide main justification for dividing the Hausa language as spoken in Nigeria into two main groups, it is significant that a lexicostatistic analysis carried out during this survey supports this classification.

In applying the lexicostatistic analysis a list of 400 words was used which included a modified form of the original Swadesh 200-word list (cf. Swadesh, 1955). The primary purpose of this was not to find the length of time of separation of the dialects in question but simply to establish the degree of lexical relationship between the dialects (cf. Gudschinsky, 1955; Duitsman, Bertkau and Laesh, 1975; Hsieh, 1977).

It appears from the results obtained, based on the number of basic vocabulary (i.e. 198) items shared by these six Hausa varieties, that

Bauchi, Daura, Kano and Zariya are more closely related to one another than either are to Katsina or to Sakkwato. These results are set out in Table 1 as follows:

Bauchi	Daura	Kano	Katsina	Sakkwato	Zariya
178					
183	172				
169	170	169			
160	149	159	162		
180	174	181	173	158	

Table 1: Number of basic vocabulary items shared by six Hausa varieties.

The reliability of this sort of lexicostatistic analysis for purposes of dialect interpretation, where a difference of shared cognation is below twenty-per-cent, is extremely weak. This became apparent when a supplementary 202-word list of non-basic vocabulary items (bringing the total list up to 400 items) was examined. The supplementary list included words denoting items such as tools, domestic and wild animals, domestic fowls and wild birds, diseases, plants and reptiles. When these words were investigated the results showed that Sakkwato is set apart from the rest with a difference of 17% shared cognation, while others have cognate percentages all above 83%. See the tables below:

Bauchi	Daura	Kano	Katsina	Sakkwato	Zariya
191					
202	184				
183	174	180			
161	157	171	159		
189	177	189	175	160	

Table 2: Number of non-basic vocabulary items shared by six Hausa varieties.

Bauchi	Daura	Kano	Katsina	Sakkwato	Zariya
91					
96	89				
88	86	87			
80	79	83	80		
92	88	93	87	80	

Table 3: The average percentages of vocabulary items shared by six Hausa varieties.

Thus it seems that if we were to rely upon lexicostatistics to classify the dialects into larger groups we would not achieve nearly such a clear-cut classification as that yielded by our phonological and morphological isoglosses. Moreover, in a generative approach to dialect study where we aim primarily at accounting for dialect differences as phonetic surface differences of the same underlying forms such a lexico-statistic classification is of little importance. Nevertheless, it is significant that the lexicostatistic evidence, such as it is, does not contradict the conclusions about dialect classification reached on other grounds, but rather comes out in support of it.

Though we use the terms East-Hausa and West-Hausa as Bargery (1934) did, our terms differ from Bargery's Eastern Hausa and Western Hausa in the following ways: first, Bargery's Eastern Hausa comprises the Hausa spoken in Katagum and Hadejiya, while our Eastern Hausa is spoken throughout the entire Northern states except in the Katsina and Sakkwato (including Gobir and Zamfara) areas. Bargery's Western Hausa covers the entire Sakkwato state and Katsina so that our West-Hausa may be said to be similar to Bargery's. Secondly, Bargery's Eastern Hausa group seems to contain a variety of Hausa which is spoken by non-Hausas and which is characterized by the absence of a glottalized velar stop. The areas in

which this type of Hausa can be heard are Gaɗau, Yayu, Zindiwa and Mashema. These areas are not really Hausa speaking areas. The inhabitants are predominantly Kanuri, Fulani, Kare-Kare and Bade. The following words can be heard with a pronunciation as indicated below:

ƙoƙo	[ʔo:ʔo:]	small calabash
ƙaro	[ʔa:ɽo:]	gum
ƙwarya	[ʔ^{w}eɽja:]	big calabash

While these examples are typical of Hausa spoken in the Katagum area, one finds that in Hadejiya there are two main languages spoken, namely, Hausa and Manganci (a variety of Kanuri). The Hausa as spoken by non-native speakers of Hausa in this area is of two varieties, namely, Arewanci and Auyakanci.[1] What is peculiar to these varieties of Hausa is that subjunctive tenses are introduced with a peculiar particle 'nda' as in 'nda mu gani' 'let us see'. There is also the use of an intransitive copy pronoun. The latter peculiarity is not confined to them alone. It is also heard in certain villages in Kano.

What this means is that the absence of a glottalized velar stop from the speech of non-Hausas in Katagum area and the introduction of particle 'nda' in subjunctive tenses in Hadejiya do not constitute valid linguistic criteria as to consider them as varieties of Hausa. If at all they are to be classified they should at best be considered as 'pidgin' Hausa. The Hausa as spoken by the native Hausa speakers in these areas is to a large extent similar to that of Kano, Zariya etc. and thus it simply falls within East-Hausa.

Finally, we would like to emphasize that our East-Hausa and

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1. These terms are used by the people themselves. The concentration of Auyakawa (people who speak Auyakanci) is in Guri, Birniwa and Kirikwasamma.

West-Hausa terms are used here as cover-terms to refer to the types of Hausa spoken within the Northern states of Nigeria. The reason being that the Hausa spoken in each dialect area is not only mutually intelligible within its area but also in its phonology and morphology is in almost every respect the same. It should also be noted that this classification does not claim to represent the speech of every Hausa community, but rather that it is a representation of major phonological and morphological features which are signals to dialect variation and are easily recognizable by both native and non-native speakers.

Our primary aim in classifying these varieties of Hausa into larger groups was to enable us to formulate a statement of a general nature concerning commonly shared features when dealing with a particular group of varieties, as will be seen in the subsequent chapters.

CHAPTER 3

THE UNDERLYING CONSONANTS OF HAUSA

3.1.0 Introduction:

In chapter one different approaches to the study of dialects were discussed. After examining each approach it was decided that the present description of Hausa dialects would be handled within the framework of generative phonology. Chapter 2 of this thesis examined the major areas of dialect variation in Hausa. It will be recalled that EH and WH show differences in surface phonetic realizations of certain forms where certain classes phonetic sounds are present in one dialect but absent in the other; such as for example the labialized alveolars and palatalized and labialized glottal fricatives which are present in WH but are absent in EH. And, of course, the different realizations of certain 'grammatical' markers. For example, the feminine marker.

Based on the theory of generative phonology the present chapter and the next one aim at interpreting those differences by relating them to a common source. Initially we shall aim at establishing the underlying phonemic system for the language.

In order to be able to describe the Hausa dialects within the framework adopted here we shall begin by taking the full set of plain consonants together with all the corresponding labialized and palatalized ones. All these will be taken as representing underlying consonants of Hausa. The exception here, however, is [ʔ^{j}].

~~which is underlyingly /dĵ/~~). One reason why we adopt this course is that it is more economical to have a larger set of underlying segments since it will require less phonological constraints forbidding certain feature combinations. It is also more plausible to have a rule which will derive nonpalatalized/labialized segments from palatalized/labialized segments in the environment before a low vowel [a] than to derive palatalized/labialized segments from plain consonants in this type of environment. Such a rule is unnatural because there is no phonetic motivation present. Consider, for example, the following rules:

3.1.1. $\begin{bmatrix} +\text{ cons} \\ +\text{ round} \end{bmatrix} \longrightarrow [-\text{ round}] / \underline{\quad} \begin{bmatrix} +\text{ syll} \\ -\text{ round} \end{bmatrix}$

3.1.2. $\begin{bmatrix} +\text{ cons} \\ -\text{ round} \end{bmatrix} \longrightarrow [+\text{ round}] / \underline{\quad} \begin{bmatrix} +\text{ syll} \\ -\text{ round} \end{bmatrix}$

The first rule is natural, while the second rule is unnatural. Moreover in a diachronic linguistic analysis the reason could simply be expressed by saying that a merger is more likely to have happened than a split. This type of explanation implies that EH appears to have lost most of the original labialized consonants (except the velar ones which still exist) through merger, while WH seems to retain most of the original labialized consonants. Both dialects have palatalized segments.

These palatalized/labialized segments will be treated as /C^{Y}/, /C^{W}/.... meaning they are single phonemes not sequences of two consonants, i.e. a plain consonant plus a glide. One reason for this is

that when geminated they behave in the same way as plain consonant segments do (i.e. they occur as a sequence of identical consonants when geminated as in, for example, the formation of the intensive verb forms) e.g. /k^{w}asa/ 'to remove' has the intensive form [$k^{w}ɛ\,k^{w}$:a:sa:] (see 2.1.27 and 4.5.0). The second argument is that the morpheme structure of Hausa does not tolerate a tense (long) vowel followed by two consonants word-medially or by a single consonant word-finally, whereas these segments are preceded by tense vowel word-medially thus supporting our analyzing them as single phonemes. Moreover, from the phonetic point of view in articulating them 'the off glide [w] and [y] are simultaneous not sequential with the release of the stop' (cf. Pike, 1956: 131-35).

The following list of underlying consonants will therefore be adopted for the purpose of describing and comparing Hausa dialects:

Systematic Phonemic	Systematic phonetic realizations
/ɸ/	[ɸ], [h], [ɾ]
/$ɸ^{w}$/	[ɸ], [h^{w}]
/$ɸ^{j}$/	[$ɸ^{j}$], [h^{j}]
/b/	[b]
/ɓ/	[ɓ]
/m/	[ŋ], [m]
/w/	[j], [w]
/n/	[ŋ], [ɲ], [n]
/n^{w}/	[n], [n^{w}]
/l/	[l]
/l^{w}/	[l], [l^{w}]
/r/	[ɾ], [r]

Systematic Phonemic	Systematic phonetic realizations
/ɾ/	[r], [ɾ]
/t/	[r], [s], [l], [j], [t]
/t^w/	[t], [t^w]
/ts/	[t͡s'], [t͡ʃ']
/ts^w/	[t͡s'], [t͡$s^{w'}$]
/d/	[r], [d͡ʒ], [d]
/ɗ/	[r], [ɗ]
/d^w/	[d], [d^w]
/$ɗ^w$/	[ɗ], [$ɗ^w$]
/s/	[ɾ], [ʃ], [z], [s]
/s^w/	[s], [s^w]
/z/	[d͡ʒ], [z]
/z^w/	[z], [z^w]
/ʃ/	[ʃ]
/t͡ʃ/	[t͡ʃ]
/d͡ʒ/	[d͡ʒ]
/j/	[j]
/k/	[k^w], [k^j], [k]
/k^w/	[k^w]
/k^j/	[k^j]
/ƙ/	[$k^{w'}$], [$k^{j'}$], [k']
/$ƙ^w$/	[$k^{w'}$]
/$ƙ^j$/	[$k^{j'}$]
/g/	[g^w], [g^j], [g]
/g^w/	[g^w]
/g^j/	[g^j]
/ʔ/	[ʔ]
/h/	[h]

The above list provides us with the total sum of underlying non-syllabic phonemes of Hausa. Normally, the underlying consonants are considerably less numerous than the total list of phonetic consonants required for all dialects. What is more important about the list is that we can make the following generalizations about the dialects. That nonlabialized alveolar consonants are realized in the same way in both dialects in the environment before high vowels (/i, ɪ, u, ʊ /) and mid vowels (/e, o/) except in the case of the alveolar affricate ejective /ts/ which is realized as palato-alveolar ejective affricate ([ʧ']). The labialized counterparts, on the other hand, in EH are all realized as plain consonants in the environment before the low vowel ([a]) (except the velar ones), so that rounding is redundant except in this environment. For example, to account for /z^{w}/ becoming [z] in EH a delabialization rule of the form

3.1.3. $$\begin{bmatrix} +\text{ cons} \\ +\text{ ant} \\ +\text{ round} \end{bmatrix} \longrightarrow [-\text{ round}] \;/\; \underline{\quad} \begin{bmatrix} +\text{ syll} \\ +\text{ low} \\ -\text{ round} \end{bmatrix}$$

can be formulated. While the above rule reveals one important fact about the dialects i.e. as having a single underlying form but each having different rules.

The above delabialization rule could enable us to make the generalization that all labialized alveolar consonants in WH correspond to nonlabialized ones in EH.

The case is rather different with the underlying consonants /ʕ/, /ʕ^{w}/ and /ɸ^{j}/ in that these bilabial fricatives are realized as glottal fricatives (/h/, /h^{w}/ and /h^{j}/) in WH, while in EH they surface as bilabial

fricatives except that the delabialization rule operates on /ɸ^{w}/. Consider the following table

Systematic Phoneme	Surface Phonetic realizations	
	EH	WH
/ɸ/	[ɸ]	[h]
/ɸ^{w}/	[ɸ]	[h^{w}]
/ɸ^{j}/	[ɸ^{j}]	[h^{j}]
cf: /h/	[h]	[h]

Setting up bilabial fricatives as underlying segments is more economical in the sense that it avoids using diacritics to mark every word having an initial /h/; for example, we would not know to which /h/ the /h/ in /hiʔa/ and /hɪtɪla/ meaning 'to pass the night chatting' and 'lamp' respectively, belongs if we set up /h/ as underlying for both. Moreover, the rule whereby /ɸ/ → [h] is a natural one; the reverse is not. In order to account for these bilabials surfacing as glottal fricatives in WH we need the following rule:[1]

$$\begin{bmatrix} +\text{ ant} \\ -\text{ cor} \\ +\text{ cont} \\ -\text{ voice} \end{bmatrix} \longrightarrow [-\text{ ant}]$$

The above rule states that bilabial fricatives become glottal fricatives.

The next segmental variation to be discussed consists in [ʔ^{j}] and

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1. This is the type of process for which Lass (1976) has proposed 'bigestural matrices' and rules involving 'gesture shift'.

[ɗɪj]. It will be recalled that EH [ʔʲ] corresponds to WH [ɗɪj] (see 2.1.11). Consider the following examples:

EH	WH	
[ʔʲa:]	[ɗɪja:]	'daughter'
[ʔʲɐntʃi:]	[ɗɪjɐwtʃi:]	'freedom'

In order to account for the surface forms [ʔʲ] and [ɗɪj] in EH and WH respectively we would have either to set up /ɗɪj/ at the underlying level or /ɗʲ/. We might set up /ɗʲ/ at the underlying level to account for the EH [ʔʲ] and WH [ɗɪj]. This would require three rules altogether. The first rule would convert /ɗʲ/ to [ʔʲ] (i.e. from a palatalized alveolar implosive to a palatalized glottal stop) such as the following:

EH rule (obligatory).

$$\begin{bmatrix} +\text{cons} \\ -\text{syll} \\ +\text{cor} \\ +\text{ant} \\ -\text{cont} \\ -\text{bk} \\ +\text{pal} \\ +\text{glot} \\ +\text{voice} \end{bmatrix} \longrightarrow \begin{bmatrix} -\text{ant} \\ -\text{cor} \\ -\text{voice} \end{bmatrix}$$

The above rule asserts that glottalized alveolar implosive becomes a palatalized glottal stop.

The second rule would be a resegmenting rule (i.e. a rule creating

two segments from one). This rule would convert /ʤʲ/ into a sequence /ʤ/ and /j/ as two seperate segments, as follows:

WH resegmenting rule (obligatory):

$$\begin{bmatrix} +\text{cons} \\ -\text{syll} \\ +\text{cor} \\ +\text{ant} \\ +\text{pal} \\ -\text{bk} \\ -\text{cont} \\ +\text{glot} \\ +\text{voice} \end{bmatrix} \Rightarrow \begin{bmatrix} +\text{cons} \\ -\text{syll} \\ +\text{cor} \\ +\text{ant} \\ -\text{pal} \\ -\text{bk} \\ -\text{cont} \\ +\text{glot} \\ +\text{voice} \end{bmatrix} \begin{bmatrix} -\text{cons} \\ -\text{syll} \\ +\text{pal} \\ +\text{high} \\ -\text{cor} \\ -\text{ant} \\ +\text{voice} \\ +\text{cont} \\ -\text{glot} \end{bmatrix}$$

The above rule splits /ʤʲ/ into sequences /ʤ/ and /j/ as seperate segments. The next rule would be an epenthetic rule which would insert a vowel between these segments. This rule would be necessary because the Hausa morpheme structure prohibits sequences of two consonants in initial position, so that 'ʤja' would become 'ʤɪja'. All the above processes can be exemplified by presenting the derivations of the underlying /ʤʲa/ 'daughter' as follows:

EH:	/ʤʲa/	UR
	ʔʲa	gesture shift
	[ʔʲa:]	SR
WH:	/ʤʲa/	UR
	ʤja	resegmenting
	ʤɪja	epenthesis
	[ʤɪja:]	SR

The second alternative would be to set up /ʃɪj/ at the underlying level. To derive EH form [ʔʲa:] 'daughter' we would need (i) an (otherwise) unmotivated syncope rule which would delete /ɪ/ (ii) a rule which would reduce /ʃ/ to [ʔ] (iii) a segment fusion rule which would turn the sequence ʔj into a single complex segment ʔʲ. The above processes can be formulated as follows:

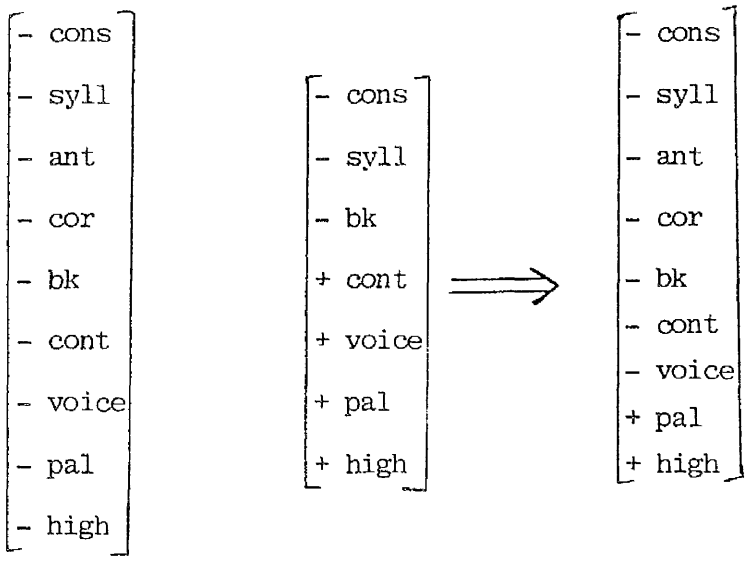
3.1.7 EH syncope rule

$$\begin{bmatrix} +\text{syll} \\ +\text{pal} \\ +\text{high} \\ -\text{tense} \end{bmatrix} \rightarrow \emptyset \;/\; \begin{bmatrix} +\text{cons} \\ -\text{syll} \\ +\text{cor} \\ +\text{ant} \\ -\text{bk} \\ -\text{cont} \\ +\text{glot} \\ +\text{voice} \end{bmatrix} \_\_ \begin{bmatrix} -\text{cons} \\ -\text{syll} \\ +\text{pal} \end{bmatrix}$$

3.1.8 EH rule

$$\begin{bmatrix} +\text{cons} \\ -\text{syll} \\ +\text{cor} \\ +\text{ant} \\ -\text{bk} \\ -\text{cont} \\ +\text{glot} \\ +\text{voice} \end{bmatrix} \rightarrow \begin{bmatrix} -\text{ant} \\ -\text{cor} \\ -\text{voice} \end{bmatrix}$$

EH Segment fusion



Rule 3.1.7 deletes /ɪ/ of /ɗɪj/, while rule 3.1.8 converts /ɗ/ into /ʔ/. Rule 3.1.9 turns ʔ and j into a palatalized glottal stop $ʔ^{j}$. Derivation of the underlying /ɗɪja/ can then proceed as follows:

EH:	/ɗɪja/	UR
	ɗja	syncope
	ʔja	gesture shift
	$ʔ^{j}a$	segment fusion
	[$ʔ^{j}$a:]	SR

Of these interpretations, we prefer the latter (i.e. the analysis which requires setting up /ɗɪj/ at the underlying level). The basis of our preference is that while it is only in EH that /ɗɪj/ does not surface as [ɗɪj] (except in [ɗɪja:ni:] meaning completely), /$ɗ^{j}$/ never surfaces as [$ɗ^{j}$] in either EH or WH. However, either /$ɗ^{j}$/ or /ɗɪj/ still requires us to posit complex phonological rules to reach the surface form [$ʔ^{j}$].

Another problematic pair of candidates are the two Rs i.e. the trilled 'r' and the flapped 'ɾ'. The majority of writers on Hausa

claim that there are some varieties of Hausa which lack the trilled 'r', such as WH (cf. Muhammad ., undated). It is true to say that at the surface level the 'r' does not exist, but it is wrong to assume that the segment does not exist at all. A careful comparative study of some words which contain the trilled 'r' in EH shows that to every trilled 'r' in EH there is a corresponding 'l' in WH, as follows:

EH	WH	Gloss
dɐrma	dɐlma	lead (substance)
gɐrma	gɐlma	plough
gɐrgɐdi	gɐlgɐdi	warning
tsɐrta	tsɐlta	spit
ɸɐrka	h^{w}ɐlka	awake
mɐɸɐrki	mɐh^{w}ɐlki	dream

These R^{S} cannot be predicted within a given lexical item (i.e. there is no particular environment in which one occurs to the exclusion of the other) but they are contrastive as in bɐɽa vs bɐra meaning 'servant' and 'begging' respectively; ɸɐri vs ɸɐɽi meaning 'ogling' and 'white' respectively. The only generalizations one can make about them are (i) that only flapped 'ɽ' exists in WH at the level of surface representation (ii) that the majority of loanwords beginning with an 'R' in EH begin with a trilled 'r' (iii) that in the formation of intensive verb forms all segments with the feature [- son, + cor] in their final stem consonants become trilled [r], [1] (iv) the trilled 'r'

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1. Abraham (1959b) and Newman (1980) make the same observation.

in simple forms preceding a consonant should be realized as [l] in WH and (v) all forms beginning with a trilled 'r' in EH are to be realized as [ɾ] in WH.

What is more intriguing about the R^S is that even within the same dialect they seem to be in free-variation in certain lexical items, e.g. mɐdɐra ~ mɐdɐɾa 'milk'.

In order to account for this variation we need the following rule:

3.1.9 WH rule (obligatory):

$$\begin{bmatrix} +\text{son} \\ +\text{vib} \end{bmatrix} \longrightarrow \begin{bmatrix} -\text{vib} \\ \langle +\text{lat} \rangle \end{bmatrix} \Big/ \underline{\quad} \; \langle [-\text{syll}] \rangle$$

The above rule asserts that a trilled /r/ becomes lateral [l] in the environment before nonsyllabic segment and devibrates elsewhere. This rule applies to WH. [1]

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1. The rule which converts /r/ to [l] operates in Daura as well.

3.2.1. VOWELS.

Definition: In simple, straight-forward words Sloat, Taylor and Hoard (1978:10) define vowels as 'speech sounds made by shaping the oral cavity while allowing free passage of air from lungs'.

In the preceding chapter we showed that vowels show very little dialect variation for essentially the dialects have the same vowels. In this section therefore we will look into different views held about them and finally establish what we believe are to be the underlying vowels of Hausa.

A number of writers on Hausa maintain that Hausa has a five vowel system each term of which can either be short or long. These writers seem to be carried away by the Hausa written form rather than the spoken form. However, there are few among them who recognize that the difference between long and short is not just of quantity but also of quality.

Schön (1862:1-7) one of the earliest and most prolific contributors to the study of Hausa, recognizes two categories of Hausa vowels, namely (i) Fundamental vowels and (ii) Subordinate vowels. According to him the fundamental vowels are as follows: i, a, u, while the subordinate vowels are ɛ̆, e, ĕ, i, ĭ, a̧, a, o, o'. He goes on to say that e and i when extremely short are represented as e and i; a or e as in sarki/serki 'king', dare or dere 'night', da yawa/de yawa 'alot, in abundance'. He remarks that these vowels are either short or long.

In another publication some years later, Schön (1877) revized his vowels as follows: a, ā, ă, e, ē, ĕ, i, ī, ĭ, o, ō, o̲, o̲, ŏ, u, ū, ŭ. He states 'we write five vowels in Hausa, but their appearance and form

is different; we write in this way: a, e, i, o, u; and ā, ē, e̲, ī, ō, o̲, ū; and a. ă, ĕ, ĭ, ŏ, ŭ. They are all the same, but their sound is different,' (p.5.).

This statement is contradictory. If they are different sounds then they are distinct phonemes unless there is some phonetic motivation making them otherwise, as for example, that seen which restricts one segment from occurring in a certain positions, such as /n/ and [ŋ] in Hausa - the latter being then interpreted as an allophone of the former. Schön does not say in what way they are the same. He fails to state the environments. Failure to provide environments is the major limitation of this analysis.

Taylor (1923: 1-14) identifies four vowels represented with capital letters which seems to imply that they are somehow either 'underlying' (morphophonemic) or 'archiphonemic'. According to him /A/ can be wide or narrow. He cites example of a wide /A/ as in 'passer' or 'Mann'; and provides tara 'nine' as a Hausa example. 'The narrow /A/ can be heard in pronouncing English 'but' or Hausa wannan 'this'. The vowel /E/ is heard at times a [ə]in 'and' and 'sir' but when in final position, it must not be prolonged into the diphthong 'EI'. He says, '/O/ is always a pure 'O' which is a rare sound in English, where it is almost always followed by lip movement, thus producing 'ou'' (op. cit. p.11).

Bargery (1934) recognizes five vowels. They are i, e, a, o, u. These same segment symbols are used both in his orthographic representations as well as in the phonetic transcriptions in which the author tries to indicate vowel quantity.

Abraham (1959 and 1973) has the same number of vowels and uses an

almost identical transcription to Bargery's (1934).

Carnochan (1952) recognizes five orthographic vowels, i, e, a, o, u and three syllabics. He maintains 'In the stem a five term vowel system operates', (op. cit. p.78). Carnochan's analysis provides us with a valuable insight into the problems of Hausa vowels. He shows that both laxness and tenseness are suprasegmental phenomenon. We find that Carnochan's five tense vowels are as follows: ɐ:, i:, e:, o:, u:, (with no corresponding short ones) and the following four lax ones: ʌ, ɪ, ɛ, ɑ (they have no corresponding long counterparts except [ɪ]. Consider the following examples (extracted from Carnochan, op. cit. pp. 88-90).

6.	Ya saye shi	He bought it
7.	I, ya saya	Yes, he has
8.	A'a. bai saya ba	No, he has not
9.	Rijiya ta cika	The well is full
10.	Ba ta cika ba	It is not full
11.	Ya cike tulu	He filled the pot right up.
14.	Ba ta cike ba	It has not
15.	Ya ciko tulu	He filled the pot and brought it
16.	A'a bai ciku ba	No, it has not

Transcription

6. [jɐ:sʌje:ʃɪʔ]
7. [jɐ:sʌjɐ:]
8. [bʌɪsʌjɐ:bɐ'ʔ]
9. [ɾi:dʒɪjɐ:'tɐ:ʧɪkɐ'ʔ]
10. [bʌtʌʧɪkʌbɐ'ʔ]

11. [jɐ:ʧɪkɛtu:lu:]

14. [bʌtʌʧɪke:bɐ'?]

15. [jɐ:ʧɪko:tu:lu:]

20. [bʌɪʧɪkʷbɐ'?]

The above transcription reveals the following information: that (orthographic) 'a' has two surface realizations [ɐ:] and [ʌ]; that 'e' surfaces both as [e:] and [ɛ]; that 'u' surfaces both as [i:] and [ɪ]; and that 'o' surfaces as [o:].

A careful examination of these sentences reveals the following important facts about the nature and number of these vowels. We see that [ɐ:] as in ya 'he' in examples 6, 7, 11 and 15, and as in ya in the words saya 'to buy', rijiya 'well'; and [ʌ]as in saye ba ta cika, bai; and [ɪ] as in bai rijiya (the 'i' preceding ya) and ciko are not phonetically determined variants and as a result do not surface differently despite the differences of their environments. What this means is that the environments in which these vowels occur neither change the quality nor the quantity of these vowels so that [ɐ:], [ʌ], [ɪ] are not allophones of /ā/, /a/, /i/ respectively but are simply distinct phonemes.

Hodge and Umar (1963 in Sloat, Taylor and Hoard (1978:137)) recognize the following surface representations of Hausa vowels: [i], [ɪ], [e], [a], [ɐ], [o], [ʊ], [u]. We find that the vowels [i], [e], [a], [o], [u] as in [yɐwa] 'many', [ʃudi] 'blue', [dabbobi] 'animals' and [dɐre] correspond exactly to the vowels commonly referred to as long vowels. On the other hand their vowels [i], [ɐ] and [ʊ] as in [mɐgɐna] 'speech', [girma] 'largeness', [kasuwa] 'market' correspond to the short vowels. [1]

1. These vowels are given in the authors' transcription. In the present transcription they would appear thus [jɐwa:], [ʃu:di:], [dɐb:o:bi:], [dɐʃe:], [mɐgɐna:], [gɦɪma:], [ka:sʊwa:] respectively.

This transcription provides strong grounds to deduce that the authors might have set up /i/, /e/, /a/, /o/, /u/, /ɪ/, /ɐ/ and /ʊ/ underlyingly.

Hoffman & Schachter (1969:72-84) present a very good chart which seems to represent the Hausa vowels adequately. The (trapezoid) diagram contains ten vowels which are phonetically different. They could be interpreted as follows: /i/, /ɪ/, /e/, /ɛ/, /a/, /ɐ/, /o/, /ɔ/, /ʊ/, /u/. Their five long vowels occupy the positions of i, e, a, o and u, while the short vowels occupy the positions of ɪ, ɛ, ɐ, ɔ and ʊ. One observes that the chart is more accurate, in the sense that the vowels are well plotted and seem to represent the Hausa vowels more accurately than the accompanying notes on the vowels. Some of the points expressed are either misleading or too general. For example, the authors state, ' /i/ contrasts with /u/ only in final position. After palatalized velars /i/ occurs to the exclusion of /u/. After labialized velars /u/ occurs to the exclusion of /i/. Elsewhere /i/ and /u/ alternate with one another, and after a sound between the - [i] - is heard, e.g. [te:bir] or [te:bir] 'table',' (op. cit. p.78).

The claim is not completely true; hence too general and misleading. Consider, for example, the following words:

guda	'one'	versus	gida 'house'
ruga	'camp'	"	riga 'precede'
guna	'melon'	"	gina 'build'
guri	'place'	"	giri 'bluff'
busa	'flute'	"	bisa 'height'
buta	'kettle'	"	bita 'study'
buri	'wish'	"	biri 'monkey'

guna 'annoy' versus gina 'ant'

tsufa 'old-age' " tsifa 'combing'

Kraft and Kirk-Greene (1973: 9-12), like some of the Hausa investigators, have five vowels for Hausa they maintain that 'short vowels are quantitatively shorter in duration than the long vowels and very often differ in quality as well... . The fact that a given vowel is shorter rather than long may also be signalled (especially in closed syllable).by the fact that the short vowel sounds different from its long counterpart. Thus, the difference between tafi 'go away' and tafi 'palm of the hand', is signalled both by the differences in the actual length of the two a's and by the fact that they 'sound' different (i.e. have a different phonetic quality', (op. Cit. p.11).

In another publication Kraft and Kraft (1973) maintain that '.. . 'a' sounds much like the vowel in English, 'but' whereas 'a' sounds more like the vowel in 'hot' (p. 27).

If Kraft and Kraft maintain that the difference between /a/ and /a/ in Hausa is similar to that which exists between /but/ and /hot/ then the difference is one of quality rather than of quantity. This is because /ʌ/ and /ɒ/ are distinct vowels in English and the difference is of quality. For example, cod vs. cud; crotch vs. crutch; coddle vs. cuddle.

From the different analyses so far examined for Hausa vowels we are able to deduce that there are more than five underlying vowels in Hausa. Consider the following words:

duka 'all'

duka	'flogging'
fito	'whistling'
fito	'ferrying across'
riga	'gown'
riga	'precede'
ruga	'Fulani camp'
ruga	'run away'
fari	'white'
fari	'ogling'

No phonetician or phonologist, after listening to these words from a native Hausa speaker, could say that the difference between every word in a pair consists only in the quantity of the vowels of the words. What this means is that what the majority of Hausa writers would call the short counterparts of the corresponding long ones are not really identical phonemes for the simple reason that there is no phonetic justification for treating them so. Both phonemes (long and short vowels) contrast in identical environments. So that the difference between the vowels is basically one of quality and that is what matters to us here.

The Underlying vowels: Now we conclude that the dichotomy drawn between long and short vowels is not the principle difference making such vowels contrastive but rather that it is the vowel quality. This is the same as the difference between the vowels e.g. between /i/ and /e/ which contrast only in quality. We establish the following vowels as the underlying vowels for Hausa: /i/, /e/, /a/, /o/, /u/ which are tense and long. /ɪ/, /ɐ/, /ʊ/ which are lax and short. Tense vowels are always

long, while lax vowels are always short. Tenseness or laxness of a vowel are not predictable features (except in closed syllables in which case the vowel must be lax). Moreover tone does not play any role in the tense/lax opposition. However, across morpheme boundaries we may find that tense vowels become [-tense], for example, /keke# n/ 'the bicycle' becomes [$k^{j}e{:}k^{j}\varepsilon\eta$] or [$k^{j}e{:}k^{j}ɐ\eta$]; /baƙo# n/ 'the stranger' surfaces as [$ba{:}k^{w'}o\eta$] or [$ba{:}k^{w'}ɐ\ \eta$]. [ɛ] and [ɔ] in these examples would have to be interpreted as surface realizations of /e/ and /o/ respectively, since there are no lax mid-vowels phonemes, [1] (see laxing rule, 3.6.11). So that an overall picture of Hausa vowels under various possible environments may proceed as follows:

(i) In open syllables (CVCV) the following vowels are possible:

[i:], [e:], [a:], [o:], [u:], [ɐ], [ɪ], [ʊ].

(ii) In closed syllables within a morpheme there are the following:

[ɪ], [ɐ], [ʊ].

(iii) In final open syllables which undergo syllable closure by means of a consonantal suffix there are [ɪ], [ɛ], [ɐ], [ɔ], [ʊ], [ʉ].

These surface representations will be interpreted as follows: [ɪ] as surface representation of /i/ or /ɪ/; [ɐ] as surface representation of /ɐ/, /a/, /e/ or /o/; [ʊ] as surface representation of /ʊ/ or /u/; [ɛ] as surface representation of /e/; /ɔ/ as surface representation of /o/ and [ʉ] as surface representation of either /i/ or /u/.

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1. Carnochan (1951) argues essentially for this.

In order to differentiate the 'long' vowels from the 'short' ones within the distinctive feature theory we need the feature [tense]. The following table is presented to show the use of the feature [tense], along with the tongue body features and the feature [round] for distinguishing Hausa underlying vowels:

	i	ɪ	e	a	ɐ	o	ʊ	u
high	+	+	–	–	–	–	+	+
low	–	–	–	+	+	–	–	–
back	–	–	–	+	+	+	+	+
round	–	–	–	–	–	+	+	+
tense	+	–	+	+	–	+	–	+

NB. The feature [round] is redundant is specifying vowels (see 5.5)

Our argument is that vowel quantity in Hausa is not phonemic for the simple reason that there is no single case (as far as we are aware) in the language where a long vowel contrasts with a corresponding short one of the same quality. The difference in vowel quantity in Hausa, to put in Sloat's words, 'is a concomitant of the tense/lax distinction', (Sloat, Taylor and Hoard, 1978:91). [1] It is therefore wrong to assume

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1. Sloat, Taylor and Hoard (op. cit. p.9) provide an example in which lexical items contrast by vowel quantity without affecting the tenseness feature of either segment, for example, '...the high back vowels of the Finnish words unni [unːi] 'over' and uni [uni] 'sheep' are both tense'. This is not the case in Hausa. Consider also the following pairs (extracted from Jones, 1950):

French:	bette	[bɛt]	
	bete	[bɛː t]	
German:	trenne	[trɛne]	
	trane	[trɛːne]	
Japanese:		[toke:]	'clock'
		[to:ke:]	'statistics'
Kikuyu:		[a:re]	'daughters'
		[are]	'he has'

that the primary distinction between the short and long vowels is their quantity.

The present analysis is similar to that of Hodge and Umar (1963) in that both analyses recognize the same number of vowels in Hausa, namely five tense ones and three lax ones.

We would finally like to draw attention to the fact that this analysis does not claim that vowel quantity has no role to play in Hausa phonology but rather it wishes to show that vowel quantity is not relevant within the framework adopted here.

3.2.2. Diphthongs: Donegan (1968: 106) defines a diphthong as 'a two-part vocalism that constitute a single syllabic peak... since, in a diphthong, two vowels are mapped onto a single syllable, one of them must be nonsyllabic'. According to her 'diphthongs originate in segments that already exist, as when two vowels become adjacent and one loses syllabicity, when a consonant adjacent to a vowel vocalizes, or when one 'half' of a single vowel undergoes a change in quality so that the two halves are no longer identical', (op. cit. p.112). Anderson (1972) maintains that in a diachronic phonology it is a phonetic change of segments which at one stage we/ɾɐ/ realized as monophthongs and at a later stage come to be realized as diphthongs.

3.2.2.1 Various analyses of the Hausa diphthongs:

A glance at any Hausa literature, grammar books, dictionaries, newspapers etc. etc. will reveal to us that there is a need for re-examining the Hausa diphthongs. This is because there is uncertainty as to how many phonetic diphthongs there are in Hausa. It appears that

every writer has a different interpretation.

Schön (1862) recognizes four diphthongs. They are ai, au, ei and oi. In another place the same author recognizes yet another diphthong making a total number of five diphthongs. They are as follows (extracted from Schon, 1877: 3):

ai as in kai 'you'; sai 'until'
au " " dauda 'filth'; dauka 'take'
ei " " kadai 'only'; deina 'stop'
oi " " kwoi 'egg'; bokoi 'seven'
ui " " guiwa 'knee';

Bargery (1934) recognizes three diphthongs. They are ai, au and ei.

Abraham (1973) recognizes four diphthongs, namely ai, au, ei and ui. A glance through Abraham's dictionary (i.e. Dictionary of the Hausa Language) reveals to us that the author was either uncertain of what should be the diphthongs or unable to distinguish between long 'e' and 'ai'. The author treats them as variants, for example, he provides two different spellings for the word 'sea' as teiku and taiku; 'gift' as tukuici and tukwici (this is a small gift given to bearer of a bigger gift).

The Hausa language Board (1966) which was the body responsible for standardizing Hausa orthography recognizes two diphthongs, namely

ai and au. But ironically, when it comes to writing words such as 'goat', 'knee' or 'reed' one finds that there is a lot of confusion and inconsistency. The words are spelt differently as akuya or akwiya 'goat', guiwa or gwiwa 'knee', kuiwa or kwiwa 'reed'. Thus confusing phonemic transcription, phonetic transcription and conventional (orthographic) spelling. [1]

In this section therefore we will show that there are three underlying vowel-plus-glide sequences in Hausa which surface as phonetic diphthongs. They are /ɐw/, /ɐj/ and /ʊj/. We will justify it on the basis of (i) a phonotactic constraint (ii) the regular correspondences of /ʊ/: /m/ or /b/ between the dialects (iii) the behaviour of non-syllabic sonorants and stridents and (iv) the metathesis rule.

The Phonotactic Constraint: There is a unanimous agreement among the Hausaists that Hausa phonology does not tolerate a cluster of vowels or consonants within a syllable. The following syllable structures CV, CV and CVC have generally been proposed, so that when there is a sequence of two vowels as a result of a morphological process the sequence must be broken by inserting a glide or by deleting one of the vowels. This therefore denies any possibility of Hausa diphthongs originating from two vowels (see truncation and epenthesis rules, 4.6.0).

The next point supporting the analysis is seen in the regular correspondences of / u/ in EH to / m/ or / b/ in WH. It has been observed

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1. Schuh (1973), though holds the two-diphthong view (i.e. ai and au) he indicates various surface representations of /ai/. Hoffman (1969) also identifies different surface realizations of ai and au.

that in certain forms where EH has au as in sauro 'mosquito' and kauri 'thickness' WH has samro and kabri respectively. This suggests that the underlying sequence is a vowel plus a consonant, otherwise there seems to be no plausible way to account for / u/ becoming [m], [b] or / m/ and / b/ surfacing as [u]. Treating it as a vowel plus a consonant the 'au' in sauro and kauri will become 'aw' and simply account for the /w/: /m/ and /b/ by hardening or softening rule. We prefer the latter (see weakening rule 3.6.8).

The third point is that when one looks at the consonants which freely precede any consonant other than an identical consonant one finds that these consonants form two natural classes, namely (i) sonorants and (ii) stridents (though the former are more frequent). Because of this natural grouping it is easier and more economical to treat the ai and au as ay and aw respectively so that there are no absentees from the set of sonorants, consider, for example, the following two analyses:

A	B	
sauro	sawro	'mosquito'
guiwa	gujwa	'knee'
danko	danko	'rubber, gum'
kulki	kulki	'club'
sarki	sarki	'king'
tambaya	tambaya	'question'

Analysis 'A' has a 'gap' in the first and second words, while group 'B' presents a natural class, namely the nonsyllabic sonorants, thus 'w', 'j', 'n', 't', 'r' and 'm'.

The last point in support of the vowel-plus-consonant analysis consists in the application of the metathesis rule. We will provide some examples from EH and WH written both according to the current orthographic practice and according to the proposed analysis.

A(i) According to the current orthographic practice:

EH	WH	
baiwa	bauya	'slave-girl'
maiwa	mauya	'a type of cereal'
saiwa	sauya	'root'

A(ii) According to the present analysis:

EH	WH
bɐjwa	bɐwja
mɐjwa	mɐwja
sɐjwa	sɐwja

Consider the following also

B(i) According to the current orthographic practice:

EH		WH	
aure	arme [1]	amre	'marriage'
ɗaure	ɗarme	ɗamre	'to tie'
sauri	sarmi	samri	'haste'
saurayi	sarmayi	samrayi	'youth'
kyauro	kyarmo	kyamro	'an arrow-shaft'
dauro	darmo	damro [2]	'a type of cereal'

1. The second column under EH is typical of Daura pronunciation.
2. In Sakkwato town and nearby areas /mɐjwa/ is more frequent.

B(ii) According to the present analysis:

EH		WH
ʔɐwɾe	ʔɐɾme	ʔɐmɾe
ʤɐwɾe	ʤɐɾme	ʤɐmɾe
sɐwɾi	sɐɾmi	sɐmɾi
sɐwɾɐji	sɐɾmɐji	sɐmɾɐji
$k^{j}_{ɐ}$wɾo	$k^{j}_{ɐ}$ɾmo	$k^{j}_{ɐ}$mɾo
dɐwɾo	dɐɾmo	dɐmɾo

C(i) According to the current orthographic practice

EH	WH	
gauraya	garwaya	'mix'
ʤauraya	ʤarwaya	'wash, rinse'
kauraya	karwaya	'walk about'

C(ii) According to the present analysis

gɐwɾɐja	gɐɾwɐja
ʤɐwɾɐja	ʤɐɾwɐja
kɐwɾɐja	kɐwɾɐja

It will be seen that the metathesized segments in the present analysis are /i/:/u/; /u/:/m/ /u/:/r/ and /r/:/m/. There is no phonetic motivation responsible for changing /i/ to [u] or vice versa or /r/ to [u] or vice versa and the only way possible to understand the phenomenon is in terms of a metathesis rule. Moreover, indeed, a metathesis rule cannot be stated if one of the input segments is vowel. Because the metathesis rule involves rearrangement of segments, the inputs of which must consist of two symbols rather than one and the output to the input consists of the same two symbols as in the input,

but in reverse order (cf. Sloat, Taylor and Hoard, 1977). The next thing is to go for the proposed analysis. We need the following rules to account for the metathesis:

3.2.2.1 jw → wj / --- $\begin{bmatrix} +\text{syll} \\ +\text{ low} \end{bmatrix}$

3.2.2.2 m → m / [+syll] --- [+syll]

3.2.2.3 ɾw → wɾ / [+syll] --- [+syll]

Our arguments for the rules to work this way are as follows: Regarding rule 3.2.2.1 it has been observed that in all our data there is not any single instance where we have a sequence /w/ + C in a WH form which corresponds to something else in EH so that whenever there is /w/ + C in WH there is a corresponding /w/ + C in EH, while the converse is not true. EH / w/ + C may correspond to any of these in WH: / w/ + C, / m/ + C or / b/ + C. Consider also the following example:

/sɐjwa/ : /sɐwja/ 'root'

/sɐjwowi/ : /sɐjju/ 'roots'

If we were to treat the direction of the metathesis the other way we would have difficulty in accounting for the plural forms.

The evidence for rule 3.2.2.2 can be seen in the plural forms of certain nouns. While EH differs from WH in the singular form of the word 'youth' thus 'sɐwɾɐji', 'sɐɾmɐji' and 'sɐmɾɐji, they both have 'sɐmaɾi' as the plural form. The same is true for the following words:

	EH	WH	BOTH
	kʲɛwɽe	kʲɛmɽe 'door'	kʲɛmaɽe 'doors'
	kʲɛɽme		
	ʔɛwɽe	ʔɛmɽe 'marriage'	ʔɛmaɽe 'brides'
	ʔɛɽme		
Cf.	ʔɛmɛɽja	ʔɛmɛɽja 'bride'	
	ʃɛwɽi	ʃɛmɽi 'tie'	
	ʃɛɽmi		
Cf.	ʃɛmɛɽa	ʃɛmɛɽa 'belt'	ʃɛmɛɽu 'belts'

Rule 3.2.2.3 can be justified on basis of regular correspondences which apart from the cases under discussion are maintained, namely that to every EH / w/ there should be a corresponding WH / m/ or / b/ which means if we were to set up /wɽ/ as the underlying we would expect to find the following forms */gɛmɽɛja/ or */gɛbɽɛja/ - but as the asterisks indicate, these are unacceptable.

Analyzing diphthong as a vowel - plus- glide does not only provide us with a straight forward framework within which we can handle all our phonetic diphthongs but also with a means to account for the dialect differences and certain phonotactic constraints. It also provides a solution to the age-old problem of inconsistency in the way Hausa is written and of inability of Hausa analysts to distinguish between phonemic transcription, phonetic transcription and orthographic spelling. Based on this analysis the following distinctions could be drawn between systematic phonemic and systematic phonetic:

Orthographic	Systematic phonemic	Systematic phonetic	Gloss
aiki	/ʔɐjki/	[ʔɐjk^{j}i:]	work
taiki	/tɐjki/	[tɐjk^{j}i:]	skin-bag
taimako	/tɐjmɐko/	[tɐjmɐk^{w}o:]	help
hausa	/hɐwsa/	[hɐwsa:]	Hausa
hauka	/hɐwka/	[hɐwka:]	madness
haure	/hɐwɽe/	[hɐwɽe:]	tooth, tusk
tukuici	/tʊkʊjʧi/	[tʊk^{w}ʊjʧi:]	gift
tukwici			
guiwa	/gʊjwa/	[g^{w}ʊjwa:]	knee
gwiwa			
kuiɓi	/kʊjɓi/	[k^{w}ʊjɓi:]	side of the body
kwiɓi			
lukui	/lʊkʊj/	[lʊk$^{w'}$ʊj]	very soft
lukwi			

Finally, how the 'perfectionists' decide to write their language is up to them, but surely, unless lines of demarcation are drawn between the phonemic transcription, the phonetic transcription and the orthographic (conventional) spelling there will remain no explanation for why they have tayaku pl. of taiki 'skin bag', or ayyuka pl. of aiki. And it will remain a mystery to them as to whether to write tukuici or tukwici; guiwa or gwiwa.

3.3.0 Length in Consonants.

Both the traditionalists as well as the generativists have represented long consonants (and vowels) in two ways: (i) as a single segment specified [+long] or as a sequence of two identical segments. Although both representations are necessary for a proper statement of phonological rules the choice of one over the other or the choice of both in describing a single language depends upon the language and the number of varieties of the language to be examined. One variety may use one representation and the other variety uses another. Or one language may prefer to use one interpretation to the other (cf. Kenstowicz and Kisseberth, 1979: 377-79).

The generally accepted criterion for preferring one representation to the other is that where long segments (geminates) behave the same as short segments (nongeminates) then the geminates are treated as single segments with the feature specification[+long]. Where geminates behave as do two nonidentical segments they are treated as sequences of identical segments (cf. Saib, 1977: 299-316).

In the present description of Hausa length in nonsyllabic segments will be treated as a sequence of two identical segments. The decision to treat it in this way is based on the fact that geminates in Hausa behave as sequences of nonidentical segments behave, as seen in one of the Hausa MSCs. An MSC which prohibits the occurrence of a sequence of two nonsyllabic segments initially and finally applies both to geminates as well as nongeminates (see 3.5.1.6). Another MSC, which prohibits the occurrence of a tense vowel before a sequence of two nonsyllabic segments does so regardless of whether the sequence consists of two identical segments or consists of two nonidentical segments (see

3.5.1.4). There is no rule which applies to geminates and does not apply to a sequence of two nonidentical segments.

3.4. Distinctive features.

The basis for the system to be adopted here is that of SPE, with some modifications. The authors of SPE use the following features to describe variations in place and manner of articulation: coronal vs. noncoronal; anterior vs. nonanterior; high vs. nonhigh, low vs. nonlow; rounded vs. nonrounded; nasal vs. nonnasal; continuant vs. noncontinuant; delayed release vs. strident; lateral vs. nonlateral.

SPE features have two functions: (i) to capture phonological contrasts in languages and (ii) to describe the phonetic content of segments derived by phonological rules as well as those of underlying segments. These features will be looked into with a view to their employment for the description of Hausa.

The features high, low and back which refer to the position of the body of the tongue were originally proposed for the vowels and later extended to consonants to distinguish and further specify the -Anterior consonants (SPE:305). We shall take first the feature [low], which has been proposed in SPE to distinguish, among other segments, glottal stop [ʔ] from velar stops and could be relevant for Hausa to distinguish the same segments. However the feature has been criticized as being irrelevant in the production of glottal stop. Tongue-height plays no part in the course of articulating the sound [ʔ]. Lass (1976: 145-67) argues that any segment articulated outside the oral cavity cannot involve a tongue-body feature.

The feature continuant can be used to distinguish the alveolar stop /t/ from the alveolar fricative /s/; and /ʔ/ from /h/. The feature 'strident' will distinguish /s/ and /z/ from /ɸ/. 'Lateral' will distinguish /l/ from /r/ and /ɽ/, and 'coronal' will distinguish /m/ from /n/, while 'round' will distinguish all plain consonants from their labialized counterparts, thus /k/ from /k^w/; /g/ from /g^w/; /t/ from /t^w/; /d/ from /d^w/, /ɗ/ from /$ɗ^w$/; /s/ from /s^w/; /z/ from /z^w/; /ts/ from /ts^w/. 'Voice' will distinguish /t/ from /d/; /s/ from /z/; /k/ from /g/; /ʧ/ from /ʤ/; /k^w/ from /g^w/ and /s^w/ from /z^w/.

The feature [+vibrant] will distinguish /r/ from /ɽ/. [+palatal] will distinguish front vowels from back vowels and thus enable us to combine /i/ and /e/ when accounting for palatalization of velar consonants where the feature value for 'back' cannot undergo change (cf Fromkin, 1970).

The substitution of the feature 'syllabic' for Jacobson's (1956) feature vocalic is based on plausible arguments, though these are not really crucial for Hausa since liquids and nasals, (which may constitute syllabic peaks in English) are never syllabic in Hausa. Only vowels are [+syllabic], all other segments being [-syllabic]. The features [-high, -low] which are feature specifications for mid-vowels and uvulars apply only to the vowels in Hausa since there are no uvulars in the language. The feature 'delayed release' is relevant and will be used in accounting for the affrication of [+coronal, -strid, -sonorant] in the environment before palatal vowels.

In the SPE epilogue [suction] has been proposed for the velaric airstream sounds. They suggest in fact two distinct suction features,

one to be associated with the velaric airstream mechanism (i.e. for the 'click' feature) and the other to be used in conjunction with glottal closure, (i.e. for the 'implosive' feature). The 'implosive' feature would refer to segments such as the Hausa /ɓ/ and /ɗ/.

The feature [pressure] is like [suction] in the sense that it involves velar or glottal motion, except that the latter is an upward movement, while the former a downward movement. There are two 'pressure' features, a 'velar pressure' and a 'glottal pressure'. The latter is traditionally known as 'ejection'.

While clicks and glottalized sounds have been assigned these features, Sim (1977) argues that in the case of glottalized sounds the features [suction] and [pressure] should be rejected and replaced by the feature [glottal]. He defines the feature [glottal] 'as referring to the modification of the airstream mechanism when the glottis is completely closed, and either raised or lowered to alter the balance of air pressure on its two sides. [-glottal] refers to the absence of this modification', (p.34). He points out that ejectives can be [+glott, -voice] and implosives [+glott, +voice] and concludes by saying that the substitution of the feature [+glottal] for the features [+suction], [+pressure] 'lies firstly in the more economic use of features, and secondly, the indeterminacy of what is implied by [-pressure] and [-suction]', (op. cit. p.3).

For the description of Hausa phonology Sim's feature [glottal] is preferred to the SPE features [pressure] and [suction]. The reason being that if a segment has the features [+glottal, +voice] than it must be implosive. And if [+glottal, -voice] then it must be ejective.

There are no voiceless implosives in Hausa, neither are there voiced ejectives. [1]

If the features [+suction, +voice] were assigned to the glottalized voiced stops (/ɓ/ and /ɗ/) and [+pressure, -voice] to the ejectives (/k̓/, /ts/ etc.) one would find it difficult to distinguish /ɓ/, /ɗ/ from /b/, /d/ because they could not be [-suction, +voice] because [-suction] might possibly imply [+pressure] unless we include both 'pressure' and 'suction' so that /b/, /d/ would have to have the features [-suction, -pressure, +voice] which would be uneconomical.

Though the feature [glottal] is accepted for the purposes of the present analysis we would have to modify Sim's definition so as to include [ʔ]. The definition will then be: The feature [+glottal] requires the glottis to be completely closed so that it has the potential for altering the balance of air pressure on either side.

While in SPE both [ʔ] and [h] have been assigned features [-cons, +son], Lass (1976) argues that this is 'erroneous' and unjustifiable. He cites several examples to show that these segments are more related to other stop segments than to glides. According to him they should be assigned features [+cons, -son]. This 'consonant-behaviour' of these segments is also seen in Hausa, where they exhibit alternation behaviour with other stop consonants and with each other. Treating these segments as [+cons, -son] has also been favoured by some other linguists among whom are Ladefoged (1974), Brown (1972), Hyman (1975) and Sloat, Taylor & Hoard (1978). For the purposes of the present

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1. There is no language (at least to our knowledge which has both ejectives and implosives and where such segments contrast in voicedness- a voiced ejective would seem to be physiologically impossible anyway!

analysis we would analyze them similarly, i.e. [+cons, -son]. So that [ʔ] will be assigned [+cons, -son, -cont], while [h] will be assigned [+cons, -son, +cont].

The feature [labial] will combine [m, b, w]. These segments constitute a natural class in Hausa (cf. Hyman, 1975: 53-54).

DISTINCTIVE FEATURE MATRIX IN HAUSA

	b	ɓ	ɸ	$ɸ^w$	$ɸ^j$	m	w	t	t^w	d	d^w	ɗ	$ɗ^w$	s	z	s^w	z^w	n	n^w	l	l^w	r	ɾ	ts	ts^w	ʧ	ʤ
cons	+	+	+	+	+	+	–	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
syll	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
son	–	–	–	–	–	+	+	–	–	–	–	–	–	–	–	–	–	+	+	+	+	+	+	–	–	–	–
high	–	–	–	–	–	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	+	–	–	+	+
back	–	–	–	–	–	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
low	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ant	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	–	–
cor	–	–	–	–	–	–	–	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
voice	+	+	–	–	–	+	+	–	–	+	+	+	+	–	+	–	+	+	+	+	+	+	+	–	–	–	+
cont	–	–	+	+	+	+	+	–	–	–	–	–	–	+	+	+	+	+	+	+	+	+	+	–	–	–	–
nasal	–	–	–	–	–	+	–	–	–	–	–	–	–	–	–	–	–	+	+	–	–	–	–	–	–	–	–
glot	–	+	–	–	–	–	–	–	–	–	–	+	+	–	–	–	–	–	–	–	–	–	–	+	+	–	–
round	–	–	–	+	–	–	–	–	+	–	+	–	+	–	–	+	+	–	+	–	+	–	–	–	+	–	–
pal	–	–	–	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	+	+
lat	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	+	+	–	–	–	–	–	–
lab	+	+	+	+	+	+	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
strid	–	–	–	–	–	–	–	–	–	–	–	–	–	+	+	+	+	–	–	–	–	–	–	+	+	+	+
del.rel	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	+	+	+	+
tense																											
vib	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	+	–	–	–	–	–

DISTINCTIVE FEATURE MATRIX IN HAUSA (CONT)

	ʃ	j	k^j	$ƙ^j$	g^j	ƙ	k	g	$ƙ^w$	k^w	g^w	ʔ	h	i	ɪ	e	a		o	ʊ	u
cons	+	−	+	+	+	+	+	+	+	+	+	+	+	−	−	−	−	−	−	−	−
syll	−	−	−	−	−	−	−	−	−	−	−	−	−	+	+	+	+	+	+	+	+
son	−	+	−	−	−	−	−	−	−	−	−	−	−	+	+	+	+	+	+	+	+
high	+	+	+	+	+	+	+	+	+	+	+	−	−	+	+	−	−	−	−	+	+
back	−	−	+	+	+	+	+	+	+	+	+	−	−	−	−	−	+	+	+	+	+
low	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	+	+	−	−	−
ant	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−
cor	+	+	−	−	−	−	−	−	−	−	−	−	−								
voice	−	+	−	−	+	−	−	+	−	−	+	−	−	+	+	+	+	+	+	+	+
cont	+	+	−	−	−	−	−	−	−	−	−	−	+	+	+	+	+	+	+	+	+
nasal	−	−	−	−	−	−	−	−		−	−	−	−	−	−	−	−	−	−	−	−
glot	−	−	−	+	−	+	−	−	+	−	−	+	−	−	−	−	−	−	−	−	−
round	−	−	−	−	−	−	−	−	+	+	+	−	−	−	−	−	−	−	+	+	+
pal	+	+	+	+	+	−	−	−	−	−	−	−	−	+	+	+	−	−	−	−	−
lat	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−
lab	−	−	−	−	−	−	−	−	+	+	+	−	−	−	−	−	−	−	−	−	−
strid	+	−	−	−	−	−	−	−	−	−	−	−	−								
del. rel	−	−	−	−	−	−	−	−	−	−	−	−	−								
tense														+	−	+	+	−	+	−	+
vib	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−

3.5.0 Morpheme Structure Conditions.

The term morpheme structure conditions was first introduced by Stanley (1967). It's function is to state redundancies at the systematic phonemic level. There are two types of MSCs, namely (i) segment structure conditions and (ii) sequence structure conditions. Segment Structure Conditions state those features of segments which are redundant regardless of their environments. Sequence structure conditions state the phonotactic constraints. These are statements concerning the concatenational relationship between segments. An MSC rule may also appear as a phonological rule, for example, the palatalization and labialization of velar segments in Hausa. These MSCs are expressed as 'If-Then' conditional rules. The MSCs of Hausa may proceed as follows:

3.5.1.0 Sequence Structure Conditions.

3.5.1.1 If: $\begin{bmatrix} [+\ \text{cons}] \\ \left\{ \begin{matrix} [+\ \text{round}] \\ [+\ \text{pal}] \end{matrix} \right\} \end{bmatrix}$ $[+\ \text{syll}] \Downarrow$

Then: $[+\ \text{low}]$

If a palatalized or labialized segment is followed by a vowel, the vowel must be a low vowel.

3.5.1.2 If: $\begin{bmatrix} +\ \text{cons} \\ +\ \text{bk} \\ -\ \text{round} \end{bmatrix}$ $\begin{bmatrix} +\ \text{syll} \\ +\ \text{round} \end{bmatrix}$

$\Downarrow$

Then: $[+\ \text{round}]$

All velar consonants preceding a rounded vowel are redundantly marked [+ round].

3.5.1.3 If: $\begin{bmatrix} + \text{cons} \\ + \text{bk} \\ - \text{round} \end{bmatrix}$ $\begin{bmatrix} + \text{syll} \\ + \text{pal} \end{bmatrix}$

Then: [+ pal]

All velar consonants are palatalized before palatal vowels.

3.5.1.4 If: [+ syll] [+ cons] $\left\{ \begin{matrix} [+ \text{cons}] \\ \# \end{matrix} \right\}$

Then: [- tense]

When a syllabic segment is followed by a sequence of two consonants word-medially or by a consonant word-finally the segment is redundantly [- tense].

3.5.1.5 If: [- syll] [- syll]

Then: $\left[\begin{matrix} [\alpha \text{ F}] \\ \left\{ \begin{bmatrix} [+ \text{son}] \\ [+ \text{strid}] \end{bmatrix} \right\} \end{matrix} \right]$ [α F]

In a sequence of nonsyllabic segments both segments must either be identical or the first segment must be sonorant or *strident*.

3.5.1.6 If: ## [- syll] [ ], [ ] [- syll] ##

Then: [+ syll] [+ syll]

There are no nonsyllabic clusters initially or finally.

3.5.1.7 If: [ ] [+ syll] [ ]

Then: [- syll] [- syll]

Any segment to the left or right of a vowel must be nonsyllabic, i.e. vowel sequences do not occur.

3.5.1.8 If: [ ] [-syll] [-syll] [ ]

Then: [+ syll] [+ syll]

There are no medial nonsyllabic clusters comprising more than two segments.

3.5.1.9 If:

$$\begin{bmatrix} + \text{ syll} \\ + \text{ high} \\ \alpha \text{ bk} \end{bmatrix} \quad \begin{bmatrix} - \text{ syll} \\ - \text{ cons} \\ -\alpha \text{ pal} \end{bmatrix}$$

Then: [- tense]

High vowels when followed by their homorganic glides are redundantly [-tense].

3.5.1.0 If:

$$\begin{bmatrix} + \text{ syll} \\ - \text{ high} \\ - \text{ low} \end{bmatrix}$$

Then: [+ tense]

All mid-vowels are redundantly [+ tense].

3.5.2.0 Segment Structure Conditions.

3.5.2.1 If:

$$\begin{bmatrix} + \text{ syll} \\ - \text{ low} \\ \alpha \text{ bk} \end{bmatrix}$$

Then: [α round]

The feature round is predictable in vowels - a nonlow vowel agrees in its values for [round] and [back].

3.5.2.2 If: [+ son]

Then: [+ voice]

There are no voiceless sonorants.

3.5.2.3 If: $\begin{bmatrix} + \text{ syll} \\ \alpha \text{ bk} \end{bmatrix}$

Then: [- αpal]

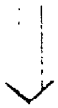
All back vowels are redundantly marked [- pal]. Thus, all vowels with the feature [- back] are [+ pal].

3.5.2.4 If: $\left\{ \begin{bmatrix} + \text{ cons} \\ + \text{ pal} \end{bmatrix}, \begin{bmatrix} + \text{ cons} \\ + \text{ bk} \end{bmatrix} \right\}$

Then: [+ high]

All back consonants and palatal ones are redundantly marked [+ high], i.e. there are no uvulars or pharyngeals.

3.5.2.5 If: $\begin{bmatrix} + \text{ cons} \\ + \text{ del. rel.} \end{bmatrix}$



Then: [+ cor]

All affricates are coronals.

3.5.2.6 If : $\begin{bmatrix}+\text{nas} \\ +\text{cor}\end{bmatrix}$ $\begin{bmatrix}\alpha\text{ant} \\ \beta\text{cor}\end{bmatrix}$

$\Downarrow$

Then : $\begin{bmatrix}\alpha\text{ant} \\ \beta\text{cor}\end{bmatrix}$

A coronal nasal is homorganic to a following consonant.

3.5.2.7 If : $\begin{bmatrix}+\text{cons} \\ -\text{cor} \\ +\text{glot} \\ \alpha\text{bk}\end{bmatrix}$

$\Downarrow$

Then $[-\ \alpha\text{voice}]$

The feature [voice] is redundant in noncoronal glottalized consonants. That is all noncoronal glottalized velars are voiceless and all noncoronal glottalized bilabials are voiced.

3.5.2.8 If : $\begin{bmatrix}+\text{cons} \\ +\text{pal} \\ +\text{voice}\end{bmatrix}$

$\Downarrow$

Then : [+del. rel]

All palatal voiced consonants are redundantly marked [+ del. rel.].

3.6.0 Phonological rules.

Phonological rules are a set of rules which (optionally or obligatorily) convert phonological representations into phonetic surface representations. The domain of these rules is a morpheme 'as it is situated in a particular string of words', (cf. Kenstowicz and Kisseberth, 1979: 427). The rules perform different kinds of operations such as (i) changing the phonetic features of segments, e.g. to account for /ts/ becoming [ʧ'] in WH in the environment of palatal vowels (ii) deleting of segments (iii) inserting of segments to maintain the surface phonotactic constraints and (iv) metathesizing the segments, e.g. to account for the two different pronunciations of the word 'to tie' [dəɾme:] : [demɾe:], (cf. Hyman, 1975: 12-15).

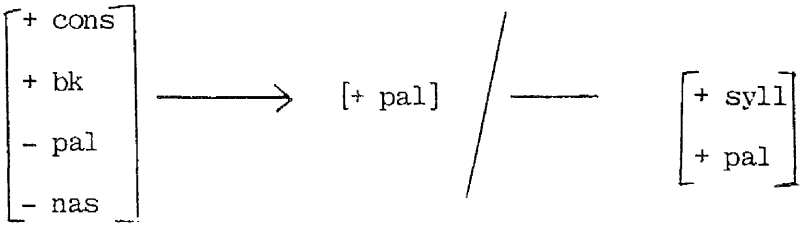
3.6.1. Labialization rule.

$$\begin{bmatrix} +\text{ cons} \\ +\text{ bk} \\ -\text{ round} \\ -\text{ nasal} \end{bmatrix} \longrightarrow [+\text{ round}] \;/\; \underline{\quad} \begin{bmatrix} +\text{ syll} \\ +\text{ round} \end{bmatrix}$$

The above rule operates in all varieties of Hausa. The rule asserts that all velar consonants are realized as labialized consonants in the environment before rounded vowels, as exemplified below:

/koko/	⟶	[k^{W}o:k^{W}o:]	'pup'
/kota/	⟶	[$k^{W'}$o:ta:]	'handle'
/goɾa/	⟶	[g^{W}o:ɾa:]	'gourd'

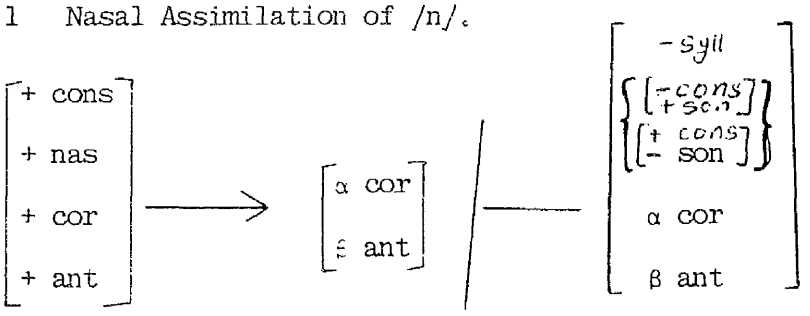
3.6.2 Palatalization rule



Like p - rule 1, rule 2 applies to all varieties of Hausa. The rule states that velar segments are palatalized before palatal vowels. Examples:

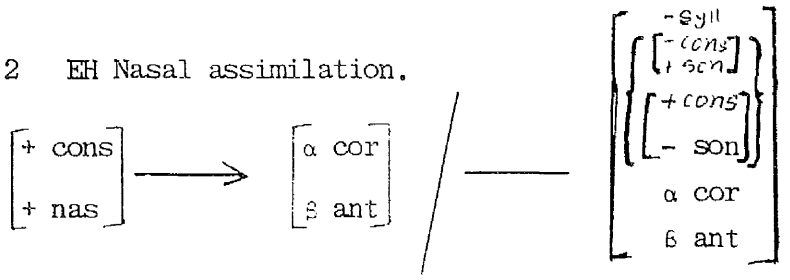
/keke/	---	[k^{j}e:k^{j}e:]	'bicyle'
/geɽo/	---	[g^{j}e:ɽo:]	'millet'
/kɪɽa/	---	[k^{j}ɪɽa:]	'call'

3.6.3.1 Nasal Assimilation of /n/.



The above rule asserts that nasal '/n/' is homorganic with following nonsyllabics. This rule is obligatory in all varieties of Hausa.

3.6.3.2 EH Nasal assimilation.



The above rule asserts that nasal consonants are homorganic with following nonsyllabics. This rule is obligatory in EH. The rule can be viewed as an expanded (simplified) version of rule 3.6.3.1 in the

sense that it includes /m/ as well and employs less features in the input to the rule. Consider the following examples:

UR	SR		Gloss
	EH	WH	
/bɐngo/	[bɐŋg^{w}o:]	[bɐŋg^{w}o:]	wall
/dɐnko/	[dɐŋk$^{w'}$o:]	[dɐŋk$^{w'}$o:]	rubber, gum
/dɐnbe/	[dɐmbe:]	[dɐmbe:]	punch
/dɐnbu/	[dɐmbu:]	[dɐmbu:]	a type of food
/hɐnja/	[hɐɲja:]	[hɐɲja:]	path, road, way
/dɐnja/	[dɐɲja:]	[dɐɲja:]	a type of tree
/dʊnhu/	[dʊŋhu:]	[dʊŋhu:]	a calabash
/kɐnwa/	[kɐŋwa:]	[kɐŋwa:]	potash
But			
/dɐmka/	[dɐŋk'a:]	[dɐmk'a:]	grip
/dɐmʃi/	[dɐn̂ʃi:]	[dɐmʃi:]	moisture
/gɐmʤi/	[gɐn̂ʤi:]	[gɐmʤi:]	guttapercha tree
/hɐmzɐɽi/	[hɐnzɐɽi:]	[hɐmzɐɽi:]	haste

3.6.4. Nasal backing rule

$$\begin{bmatrix} +\text{ nasal} \\ +\text{ ant} \\ (-\text{cor})\ * \end{bmatrix} \longrightarrow [+\text{ bk}] \;/\; \text{——} \#\#$$

*If [-cor]rule is optional.

The above rule states that nasal consonants acquire the feature specification [+bk] word-finally, as exemplified below:

/nɐn/	→	[nɐŋ]	'here'
/ʧɐn/	→	[ʧɐŋ]	'there'
/mʊtʊm/	→	[mʊtʊŋ] ~ [mʊtʊm]	'man'
/dʊngʊm/	→	[dʊŋg^{W}ʊŋ] ~ [dʊŋg^{W}ʊm]	'all'
/kʊɽʊm/	→	[k^{W}ʊɽʊŋ] ~ [k^{W}ʊɽʊm]	'only'

3.6.5. Affricate-palatalization (oblig. in WH).

$$\begin{bmatrix} +\text{ cons} \\ +\text{ cor} \\ -\text{ round} \\ +\text{ glot} \\ +\text{ del. rel} \end{bmatrix} \longrightarrow [+\text{ pal}] \,/\, \underline{\quad} \begin{bmatrix} +\text{ syll} \\ +\text{ pal} \end{bmatrix}$$

This rule palatalizes alveolar affricate ejective (/ts/) in the environment before front vowels. The rule is obligatory in WH. e.g.

	EH	WH	
/kɐtsɪna/	[kɐts'ɪna:]	[kɐʧ'ɪna:]	Katsina town
/tsɪja/	[ts'ɪja:]	[ʧ'ɪja:]	poverty
/tsegʊmi/	[ts'e:g^{W}ʊmi:]	[ʧ'e:gʊmi:]	gossiping

3.6.6. Voicing rule (optional).

$$\begin{bmatrix} +\text{ cor} \\ -\text{ round} \\ +\text{ strid} \\ -\text{ voice} \end{bmatrix} \longrightarrow [+\text{ voice}] \,/\, \underline{\quad} \begin{bmatrix} +\text{ cons} \\ +\text{ bk} \\ +\text{ voice} \end{bmatrix}$$

The above rule applies optionally in all varieties of Hausa. The rule asserts that the alveolar voiceless fricative becomes voiced in the environment before back segments, e.g.

/ɸɪsga/	[ɸɪzga:]	[ɸɪsga:]	:	[hɪzga:] ~ [hɪsga:]	'snatch'
/gɐɓɐsga/	[gɐɓɐzga:]	[gɐɓɐsga:]	:	[gɐɓɐsga:] ~[gɐɓɐzga:]	'forced levey of food'
/kɐsgɐnja/	[kɐzgɐɲja:]	[kɐsgɐnja:]	:	[kɐsgɐɲja:] ~[kɐzgɐɲja:]	'a young animal'

The reason for treating /s/ as the underlying segment, rather than [z] is that it is phonetically natural for a voiceless segment to become voiced in the environment of a voiced segment, but the converse is not natural. One observes that there are other forms in which /s/ precedes a voiceless velar segment such as /kɐsko/ [kɐsk^{w}o:] 'open pot' and /kɐska/ [kɐska:] 'tick'. This means if it were /z/ we might have expected to find both [kɐsko:] and [kɐzk^{w}o:]. This interpretation can be seen in Bargery (1934), for example, he gives fisga as a variant of fizga, gabasga as a variant of gabazga; gisga as a variant of gizga; gisgabu as a variant of gizgabu; gisgaya as a variant of gizgaya. But there are no variants of /kɐsko/ or /kɐska/.

3.6.7 EH - Hardening rule

$$\begin{bmatrix} +\text{ ant} \\ -\text{ cor} \\ +\text{ cont} \\ -\text{ voice} \end{bmatrix} \longrightarrow [\,-\text{cont}] \,/\, \begin{bmatrix} +\text{ nas} \\ +\text{ cor} \end{bmatrix} \_\_\_\_$$

The above rule asserts that the bilabial fricative /ɸ^{w}/ becomes a bilabial stop [p] in the environment after the nasal /n/, as exemplified below:

/ʔɐnɸ^{w}ani/	[ʔɐmpa:ni:]	usefulness
/ʔɐtɐ nɸ^{w}a/	[ʔɐtɐmpa:]	a kind of cloth
/dɐnɸ^{w}ɐ ɾa/	[dɐmpɐɾa:]	cheat

/ɗɛnɸ^{W}ɛɾa/	[ɗɛmpɛɾa:]	accuse
/ɾʊnɸ^{W}a/	[ɾʊmpa:]	shade
/kʊnɸ^{W}a/	[k^{W}ʊmpa:]	lather
/kɛnɸ^{W}ɛni/	[kɛmpɛni:]	company

In WH the above forms would be realized as follows:

[ʔɛŋh^{W}a:ni:]	usefulness
[ʔɛtɛŋh^{W}a:]	a kind of cloth
[ɗɛŋh^{W}ɛ ɾa:]	cheat
[ɗɛŋh^{W}ɛ ɾa:]	accuse
[ɾʊŋh^{W}a:]	shade
[k^{W}ʊŋh^{W}a:]	lather
[kɛŋh^{W}ɛ ni:]	company

3.6.8. EH - Weakening rule

$$\begin{bmatrix} -\text{ syll} \\ +\text{ cons} \\ +\text{ labial} \\ +\text{ voice} \\ -\text{ glot} \end{bmatrix} \longrightarrow [-\text{cons}] \;/\; \begin{bmatrix} +\text{ syll} \\ +\text{ low} \end{bmatrix} \_\_\_ \begin{bmatrix} +\text{ cons} \\ +\text{ cont} \end{bmatrix}$$

This rule operates only in EH. The rule states that bilabial stops (/m/, /b/) become [w] in the environment after syllabics before nonsyllabic continuants. Consider the following examples:

	EH	WH	
/sɐbɾo/	[sɐwɾo:]	[sɐbɾo:]	mosquito
/sɐmɾɐji/	[sɐwɾɐji:]	[sɐmɾɐji:]	youth
/lɐbsʊɾ/	[lɐwsʊɾ]	[lɐbsʊɾ]	garden cress
/zɐmna/	[zɐwna:]	[zɐmna:]	sit

/tʁbʃi/	[tʁwʃi:]	[tʁbʃi:]	softness
/kʲʁmɽe/	[kʲʲʁ wɽe:]	[kʲʲʁ mɽe:]	door

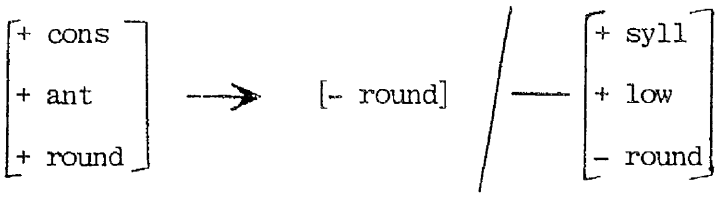
Our reason for basing the underlying forms on the WH forms is because both dialects behave similarly i.e. where the segment occurs before a vowel in the plural forms of certain EH words containing [w]: /m, b/ such as [kʲʲʁ ma:ɽe:] plural of /kʲʁ mɽe/ 'door'. On the other hand if we were to start with the underlying forms based on EH, we would run into problems. The first problem concerns the type of rule we would need to derive the plural forms where we would always have to state whether the /w/ is to be related to an [m] or a [b], that is, /kʲʁwɽe/ would have to be marked [+m]. The second problem is that such a rule would be very difficult to formulate because it would require considerable morphological information.

The same analysis has been proposed by Schuh (1972) on the basis of historical evidence. This is seen in Schuh's interpretation of a rule inversion. But this is largely based on the assumption that what is known as 'Kingenheben's law' is true and valid historically for Chadic languages, and Hausa in particular. Schuh shows that given underlying forms such as /dʒɪbdʒi/ 'rubbish heap' and /sʁmɽʁji/ 'youth', then the singular forms can be predicted by a rule which he calls 'syllable-final weakening', having the form

$$\begin{bmatrix} + \text{ labial} \\ C \end{bmatrix} \longrightarrow w \; / \; \text{---} \; \$$$

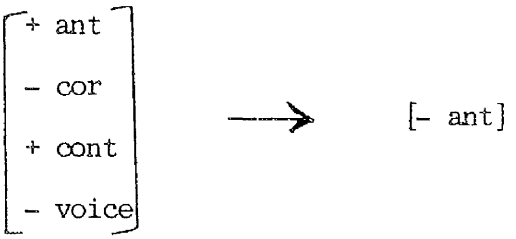
Although Schuh's rule is over-simplistic it supports our analysis.

3.6.9 Delabialization rule



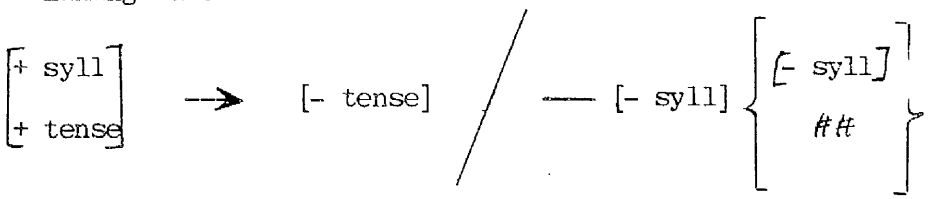
The above rule states that all labialized coronals are delabialized before low vowels. The rule operates only in EH.

3.6.10



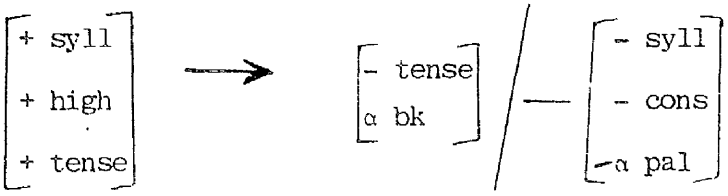
The above rule changes bilabial fricatives to glottal fricatives.

3.6.11 Laxing rule



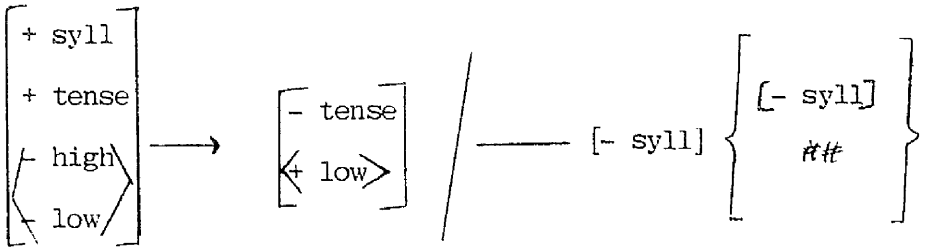
The above rule asserts that all tense vowels become [- tense] in the environment before a sequence of two consonants word-medially or before a single consonant word-finally.

3.6.12



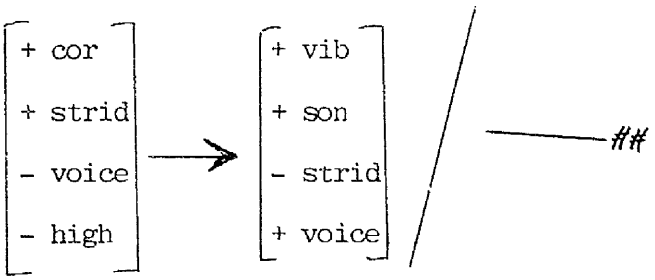
This rule asserts that all tense high vowels become [- tense] when followed by their homorganic glides.

3.6.13 Kano laxing rule



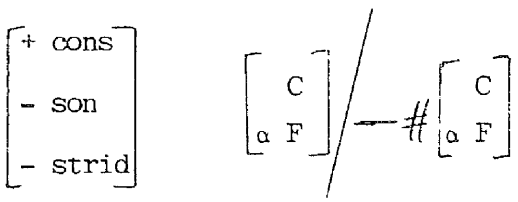
The above rule states that all tense vowels are laxed before a sequence of two nonsyllabic segments word-medially or before a single consonant word-finally. Mid-vowels become [ɐ] in these environments.

3.6.14 Kano-rhotacization rule



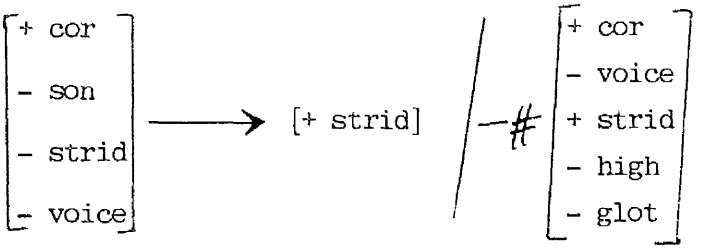
This rule asserts that /s/ is realized as [r] in word-final position.

3.6.15 Total assimilation rule



A nonsyllabic segment with the features [-son, - strid] when followed by a nonsyllabic segment acquires all its features.

3.6.16 Kano-sibilant assimilation rule

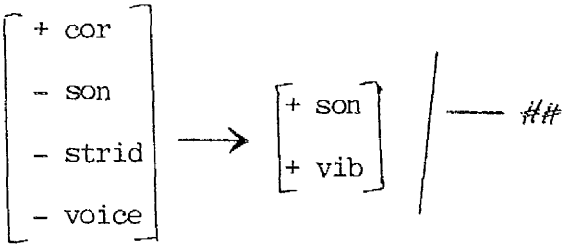


The above rule says that /t/ assimilates totally to a following [s] across morpheme boundary.

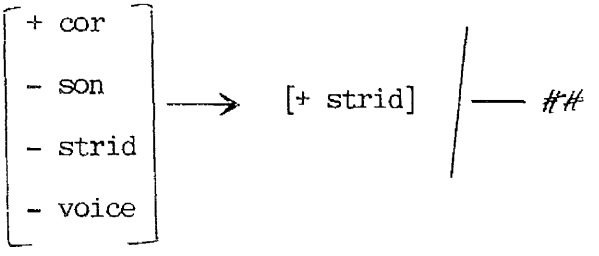
3.6.17.0 Softening rules

3.6.17.1 Kano-specific

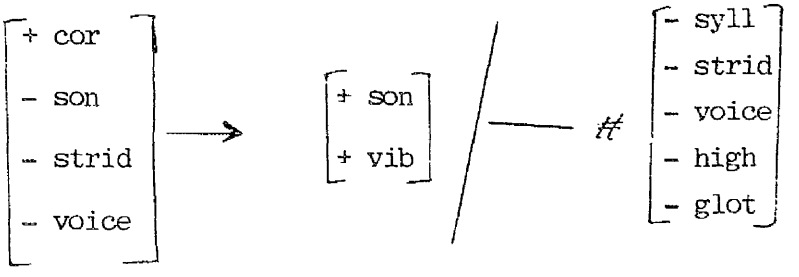
3.6.17.1.1



3.6.17.12

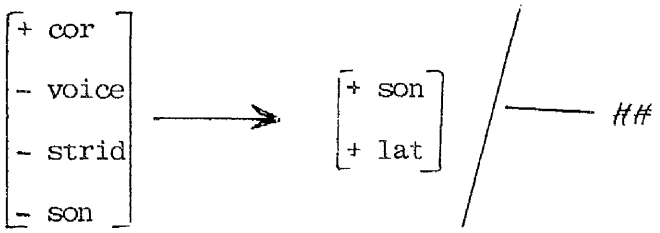


3.6.17.1.3



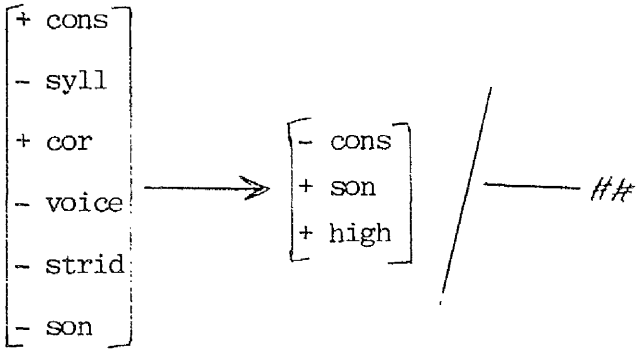
Rule 3.6.17.1.1 states that the underlying /t/ is realised as [r] word-finally. This rule is an alternant of the second rule (3.6.7.1.2) which changes the /t/ to an [s] word-finally. Rule 3.6.17.1.3 asserts that the underlying /t/ surfaces as [r] in the environment before any nonsyllabic segment across morpheme boundary.

3.6.17.2 Daura specific



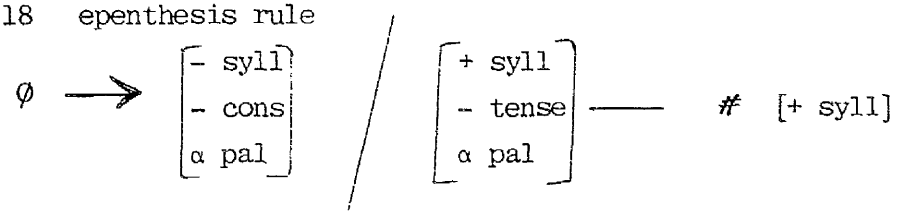
The above rule states that /t/ is realized as [l] word-finally.

3.6.17.3 Katsina specific



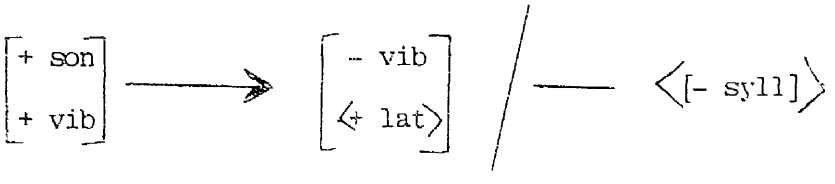
The above rule changes /t/ to [j] word-finally.

3.6.18 epenthesis rule



The preceding rule asserts that an epenthetic glide is inserted after a lax vowel followed by a another vowel across morpheme boundary. The glide to be inserted is homorganic with the preceding vowel.

3.6.19 WH - Lateralization rule



The above rule states that a trilled /r/ becomes lateral [l] in

the environment before nonsyllabic segment and devibrates elsewhere.

3.6.20.0 Metathesis rule

Processes involving metathesis rule require a different format from the majority of phonological rules. This is because a metathesis rule affects more than a single segment. In order to handle these situations a more powerful rule for the grammar is needed and this has the form of a 'transformational rule'. This is expressed as follows:

3.6.20.1 WH - Metathesis

SD	[- cons - syll + pal]	[- cons - syll - pal]	[+ syll]
SI	1	2	3
SC	2	1	3

The structural change of this rule states that the segment indexed as 2 (namely, /w/) comes to precede the segment indexed as 1 (namely, glide /j/) in the output, even though in the original structure the order was the reverse.

3.6.20.2 EH - Metathesis

SD	[+ son + cor - lat - vib - nas]	[- cons - syll - pal]	[+ syll]
SI	1	2	3
SC	2	1	3

The structural change of the above rule asserts that the segment /w/ precedes /ɾ/ in the output in the environment before a syllabic.

3.6.20.3 Daura Metathesis

SD	[+ syll]	[+ cons, + nas, - cor]	[+ son, + cor, - nas, - lat, - vib]	[+ syll]	
SI	1	2	3	4	
SC	1	3	2	4	

The above structural change says that the segment /ɾ/ precedes /m/ intervocalically.

CHAPTER 4

4.1.0 Introduction:

In chapter five we discussed some aspects of Hausa phonology and phonetics with a view to accounting for the differences exhibited by the dialects. The aim of this chapter therefore is to account for the dialect variation shown up in the morphology of the language. These differences will be discussed under the headings of various rules which are observed to operate in the morphology.

We shall begin with the discussion of the palatalization rule which is observed to operate in certain morphological contexts and which converts the underlying coronal obstruents /t, d, s, z/ into [tʃ, dʒ, ʃ] and the underlying /w/ into [j].

Although the dialects do not exhibit any variation regarding the application of this rule we would have to appeal to the rule because it appears in a number of morphological contexts in which dialect variation is observed, such as the causative marker (which we argue is underlyingly /s/, though phonetically [ʃ] (see 4.4.0)) and also in the formation of nouns designating ethnicity (see 4.6.0).

4.2.0 Palatalization rules:

It has been observed that palatalization operates in certain plural forms, 'mutable' verbs and patronymics. Consonants in these classes of forms have been observed to undergo palatalization when the form contains a front vowel. Though the environment in which the palatalization takes place is phonetically natural the palatalization in this

case is not an automatic consequence of the environment, for it operates only in certain morphological contexts.

One observes that the plural forms in which this palatalization operates include those plurals which are formed (i) by duplicating the final consonant of the singular form, (ii) by reduplicating the singular form completely, (iii) by adding a plural suffix /-i/ to the stem of the singular form.

In the case of mutable verbs the palatalization operates in the verbs of grades two, three and four. Consider, for example, the following:

1. Plural formation by reduplicating the final consonant and suffixing /-i/. This effectively /-$\overset{1}{C}$e/ or /-C^1i/ is added to the stem of singular, where C^1 copies the stem-final nonsyllabic. There is also a rounding/nonrounding vowel harmony which affects the penultimate vowel where the back nonhigh vowel is rounded or otherwise according to the value for this feature of the right most preceding nonsyllabic rounded nonconsonantal segment. Consider the following:

(a) Coronal obstruents:

SINGULAR	PLURAL		Gloss
UR	UR	SR	
ɬota	ɬotati	[ɬ$^{w'}$o:to:ʧi:]	handle
buta	butati	[bu:to:ʧi:]	kettle
gɪda	gɪdade	[g^{j}ɪda:ʤe:]	house
gɐdo	gɐdode	[gɐda:ʤe:]	bed
ɬusa	ɬusasi	[ɬ$^{w'}$u:so:ʃi:]	nail
ɬɐsa	ɬɐsase	[ɬ$^{'}$ɐsa:ʃe:]	land
mɐza	mɐzaze	[mɐza:ʤe:]	men

(b) glides:

SINGULAR	PLURAL		Gloss
UR	UR	SR	
dawa	dawawi	[ɗa:wo:ji:]	corn
kʲᵍnwa	kʲᵍnwawi	[kʲᵍŋwo:ji:]	cat
kʊɽwa	kʊɽwawi	[kʷʊɽwo:ji:]	spirit

2. Plural formations by complete reduplication of the singular form and suffixation of /-e/. The final stem vowel of the singular is deleted by truncation (see 4.6), examples:

SINGULAR	PLURAL	
UR	UR	SR
sata	sata + e # # sata + e	[ʂa:ʧe sa:ʧe:]
lasa	lasa + e # # lasa + e	[ɭa:ʃe la:ʃe:]
ʧizo	ʧizo + e # # ʧizo + e	[ʧiʤe ʧi:ʤe:]
gado	gado + e # # gado + e	[ga:ʤe ga:ʤe:]
ɽɐwa	ɽɐwa + e # # ɽɐwa + e	[ɽɐje ɽɐje:]
hɐwa	hɐwa + e # # hɐwa + e	[hɐje hɐje:]

meaning 'theft', 'licking', 'biting', 'inheritance', 'dance' and 'riding'.

3. Plural formation by suffixation of /-i/ only. Here after a plural /-i/ suffix is added to the stem of the singular form the stem vowel of the singular will be deleted by the truncation rule (see 4.6.0). E.g.

SINGULAR	PLURAL		Gloss
UR	UR	SR	
ɓɐɽawo	ɓɐɽawo + i	[ɓɐɽa:ji:]	thief

SINGULAR	PLURAL		Gloss
UR	UR	SR	
ɗoɽɐwa	ɗoɽɐwa + i	[ɗo:ɽɐji:]	locust bean tree
ʧɪjawa	ʧɪjawa + i	[ʧɪja:ji:]	grass
kɐbewa	kɐbewa + i	[kɐbe:ji:]	pumpkin
kaza	kaza + i	[ka:ʤi:]	hen

4. The 'mutable' verbs: The feature mutable is used here to refer to a certain class of verbs which undergo suffixal changes. This class of verb forms includes forms 'B' and 'C' of the grade II verbs, certain grade III verbs and the completive grade IV verbs.

The choice of which form to use in a sentence is phonosyntactically determined. For example, the forms ending in '-a' (which are the citation forms), and having the appropriate tonal pattern, are used in sentences whose objects are not expressed. In order to be able to include an object we would have to add to the verb suffixes '-e' or '-i'; which we use depends on whether the object is a noun or pronoun object. If it is a noun object we may only add '-i' to the form, whereas an '-e' suffix is attached to verb forms whose objects are either pronouns or nouns, i.e. the verb undergoes a change of grade. However syntactic analysis, though relevant, is not within the scope of this thesis; hence we shall not develop a consideration of these factors. Consider, for example, the following:

ʧiza	ʧiza + i	[ʧi:ʤi:]	bite
	ʧiza + e	[ʧi:ʤe:]	
sata	sata + i	[sa:ʧi:]	steal
	sata + e	[sa:ʧe:]	

gada	gada + i	[ga:ʤi:]	inherit
	gada + e	[ga:ʤe:]	
lasa	lasa + i	[la:ʃi:]	lick
	lasa + e	[la:ʃe:]	

cf.

Musa ya lasa	'Moses licked'
Musa ya lashi zuma	'Moses licked some honey'
Musa ya lashe ta	'Moses licked it'
Musa ya lashe zuma	'Moses licked up the honey'

5. Patronymics.

bɛsɛkʷʷkʷʷɛ to + e	[bɛsɛkʷ:ɛ ʧe:]	Sakkwato man
bɛhɛwsa + e	[bɛhɛwʃe:]	Hausa man
bɛΦɛɾɛnsa + e	[bɛΦɛɾɛnʃe:]	French man

In order to account for the palatalization of these nonsonorant coronals and /w/ we need the following rules:

4.2.1 Palatalization rule

$$\begin{bmatrix} -\text{son} \\ +\text{cor} \\ \langle \{ -\text{cont} \\ +\text{voice} \} \rangle \end{bmatrix} \rightarrow \begin{bmatrix} +\text{pal} \\ \langle +\text{del} \rangle \end{bmatrix} / \_\_ \begin{bmatrix} +\text{syll} \\ +\text{pal} \end{bmatrix} \begin{Bmatrix} [+\text{plur}] \\ [+\text{mutable}] \\ [+\text{patronymics}] \end{Bmatrix}$$

4.2.2 Palatalization rule

$$\begin{bmatrix} -\text{ syll} \\ -\text{ cons} \\ +\text{ round} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{ pal} \\ -\text{ round} \end{bmatrix} / \text{—} \quad \begin{bmatrix} +\text{ syll} \\ +\text{ pal} \end{bmatrix} \begin{Bmatrix} [+\text{ plur}] \\ [+\text{ mutable}] \\ [+\text{ patronymics}] \end{Bmatrix}$$

Rule 4.2.1 palatalizes any coronal obstruent. In the event of a coronal obstruent being either a stop ([- continuant]) or voiced (or both a stop and voiced) it will also acquire a positive value for the feature delayed release , i.e. resulting in an affricate. Rule 4.2.2 converts /w/ to [j].

One observes that there is an overlapping in the phonetic realization of /d/ and /z/, both surfacing as [ʤ] [1] when palatalized, which signifies a gap in the paradigm thus

t	ʧ
d	ʤ
s	ʃ
z	*ʒ

This overlapping is thought by some other linguists to be a result of a sound change which might have taken place in the language (cf. Gregersen, 1967). Dihoff (1971) feels that 'both /ǰ/ and /ž/ [2] existed as seperate phonemes. Later these two merged into one, but the distinction was retained in the plurals where an original /ž/ was heard as /z/, and an original /ǰ/ was heard as [d]'.

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1. It has been observed that in the extreme north of WH [ʤ] and [ʒ] are in free-variation.
2. /ǰ/ equals /ʤ/ and /ž/ equals /ʒ/.

Alternatively, both /ǰ/ and /ž/ may have been allophones of the same phoneme, conditioned by an environment no longer evident in the interesting situation of becoming phonemically distinct after the sound change brought about by the /-back/ vowel', (p.21).

4.3.0 Rhotacization rule

We have seen in chapter 2(2.1.40) that there exists dialect variation in the causative marker. It is observed that the differences consist in what the traditional grammarians call 'long' and 'short (special)' forms of the causative. In the long form of the causative the difference is basically that of /-r/ as in EH versus /-s/ in WH; while in the short (special) form the difference concerns the pronominal object of a sentence and, of course, the rules involved in forming these. In EH /ʃi/ 'him' is used as the pronoun object, while in WH /-j/ 'him' is employed.

Before we set up a common underlying causative marker we should like to make the following points clear:

(a) that all verbs capable of taking a causative marker underlyingly have an /a/ vowel terminally. This means we regard causative verbs as being formed from the stems of simple verbs, rather than from their roots; pace Hodge (1947), Bagari (1977). This stem-based interpretation is independently motivated as it can be claimed as operating not only in verbs but also in certain categories of derivative nouns, such as feminine forms and plural forms. The plausibility of this interpretation is its economy and the generalization which it enables us to make for all Hausa dialects. Any analysis contrary to the one proposed here (i.e. Stem-based interpretation) will miss a generalization, thus making

it impossible to predict a grade of a given verb or a marker of a masculine singular of a given noun, since a masculine noun may end in any of the vowels.

(b) that the causative form like a simple verb form can acquire the marker of a further grade. Here the causative marker is capable of taking a 'grade IV' suffix /-e/, thus making it look more like a 'compound' grade. And indeed here it is claimed that the 'short' causative is in fact a causative grade form which has been further extended by means of a grade IV (i.e. completive grade) suffix. This fact can be seen in the features of tonality and meaning. Since the form is basically a causative one the tone pattern remains high all the way through. Regarding the meaning, the form has two meanings: one of causativity and the other denoting completeness or thoroughness of an action. The meaning of causitivity is one of the characteristic features of a grade V verb, while the features of completeness and thoroughness is one of the features of a grade IV verb.

It is interesting to note that the /e/ suffix is attached to the causative marker. This is necessary because suffixing it to a verb would mean a changing of the grade and, of course, a necessary deletion of the causative marker.

(c) that the so-called Hausa monosyllabic verbs operating with causative marker are not underlyingly monosyllabic but rather disyllabic. Therefore words such as sha 'drink' ba 'give', Ci 'eat' are underlyingly /ʃənja/, /baja/ and /ʧənja/ respectively. The same claim is made concerning monosyllabic verbs ending in a glide e.g. hau 'climb, mount, ride', kau 'remove', which are underlyingly /həwa/ and /kəwa/ respectively.

(d) that for the purpose of present discussion we shall substitute the term 'simple causative' for 'long causative' and 'completive causative' for 'short (special) causative'. The simple causative can have its object either expressed or unexpressed. When the object (which may be a full noun phrase or simply a pronoun) is expressed it is augmented with the particle /dɐ/ immediately following it, as in / # ja # # sɐja + s # # dɐ # # mota # / 'he sold a car' or 'he caused a car to sell' or / ja # # sɐja + s # / 'he sold (it)' or 'he caused (it) to sell'.

Perhaps the strongest argument in support of the claim made in (b) is that a completive causative will not be found for a verb unless there is a simple causative for that verb. 'Completive' is used here with the same sense as it has when used by Parsons to designate the 'completive' grade IV. The difference is that the completive causative has a high tone pattern all the way through, like the simple causative, and the /-e/ suffix is attached to the causative marker rather than to the simple verb-stem. A completive causative verb may only have a pronoun as an object; cp. above.

The underlying causative marker: We are here setting up /-s/ as the underlying causative marker. This is in agreement with Bagari (1973). Parsons (1971 and 1972) has a rather different view.

In order to account for a clause such as <u>fisshe</u> 'caused to go out' we would need the following rules:

<u>Fisshe</u>

EH /ɸɪta + s + e/ UR

ɸɪta -ʃ - e palatalization

ɸɪt - ʃ - e	apocope
ɸɪʃ - ʃ - e	assimilation
[ɸɪʃ:e:]	SR

When the third person masculine pronoun is introduced as an object of a sentence such as the preceding, we observe that there is a dialect difference (it may be recalled that EH employs /ʃi/ 'him', while WH employs /-j/ (see 2.1.4.0). Consider for example, the following:

EH

/ #ɸɪta + s + e # # ʃi # /	UR
ɸɪta - ʃ - e - ʃi	palatalization
ɸɪt - ʃ - e - ʃi	apocope
ɸɪʃ - ʃ - e - ʃi	assimilation
[ɸɪʃ :e:ʃɪʔ]	SR

WH

/ # ɸɪta + s + e # # j # /	UR
hɪt - s - e - j	apocope
hɪt - s - ɐ - j	closed syllable lowering
hɪs - s - ɐ - j	assimilation
[hɪs:ɐj]	SR

In the simple causative when the object is not expressed the underlying /-s/ is converted to [r] in EH (cf. the behaviour of FGSE /t/4.4.0); while in WH both the underlying and surface representations are identical as in the following:

	EH	WH	
UR	SR	SR	
/ # ja # # sɐja + s # /	[ja:sɐjɐr]	[ja:sɐjɐs]	'he sold (it)'

While the dialects differ in sentences with unexpressed objects, we find that in sentences with expressed objects they behave similarly, as exemplified below:

/ # musa # # ja # # sɐja + s # # dɐ # # mota # /	UR
musa - ja - sɐjɐ - s - dɐ - mota	laxing
musa - ja - sɐjɐd - dɐ - mota	assimilation
[mu:sɐja:sɐjɐd:ɐmo:ta:]	SR

OR

/ # musa # # ja # # sɐja + s # # dɐ # # mota # /	UR
musa - ja - sɐj - s - dɐ - mota	apocope
musa - ja - sɐj ∅ - dɐ - mota	causative deletion
[mu:sɐja:sɐjdɐmo:ta:]	SR

meaning: 'Moses sold a car' or 'Moses caused a car to sell'

We may summarise by saying the basic difference between EH and WH consists in two things: (i) the causative marker, which is 'r' in EH and 's' in WH. We set up the latter as the underlying marker, (ii) the choice of pronoun which in EH /ʃi/ 'him', while in WH it is /-j/.

Having argued that the underlying causative marker is /s/, we can account for the EH [r] (which surfaces in the simple causative form) by the following rule of rhotacization:

4.3.1 Rhotacization rule

$$\begin{bmatrix} +\text{ cor} \\ +\text{ strid} \\ -\text{ voice} \\ -\text{ high} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{ son} \\ -\text{ strid} \\ +\text{ voice} \\ +\text{ vib} \end{bmatrix} \; / \; \_\_ \; \#\#$$

The above rule asserts that the underlying /s/ becomes [ɾ] word finally. This rule of rhotacization is a productive one and it is also a characteristic feature of many morphologically complex forms in EH. This process of rhotacization can also be seen elsewhere in the language, such as the FGSE (see 4.5.0), dative apocope (4.10) and in certain forms of the intensive verbs, e.g. [ɸɐɾɸɐsa:] intensive of /ɸɐsa/ 'to break' and [gɐɾgɐsa:] intensive of /gɐsa/ 'to smoke'.

Cf. [k^{w}ʊɾk^{w}ʊsa:] intensive of /kʊsa/ 'near'
[k^{w}ʊsɐk^{w}ʊsa:]

Note: The majority of verbs that are completive causatives have a sonorant segment in their syllable (this fact was noted by Parsons (1971) and Bagari (1973)). Consider the following examples:

UR	SR	Gloss
/sɐja + s + e/	[sɛjʃe:]	cause to sell
/baja + s + e/	[bɐjʃe:]	cause to give
/mɐja + s + e/	[mɐjʃe:]	cause to return
/kɐwa + s + e/	[kɐwʃe:]	cause to remove
/hɐwa + s + e/	[hɐwʃe:]	cause to climb, ride, mount
/tsɐɾa + s + e/	[tsʲɐɾʃe:]	cause to protect
/gɐʤɪja + s + e/	[gɐʤi:ʃe:]	cause to be tired

/gɛma + s + e/	[gɛmʃe:]	cause to satisfy
/wɛhɛla + s + e/	[wɛhɛlʃe:]	cause to suffer

Cf. * watsa + s + e 'cause to disperse, spread, sprinkle'

* gʊsa + s + e 'cause to move'

* gɛbata + s + e 'cause to precede, introduce'

What the significance of this correlation is is unclear, if indeed any significance is to be attached to it at all.

4.4.0 Sibilant assimilation and softening rules.

There are basically two things we aim at in this section, namely (i) to establish the fact that the underlying feminine marker in certain grammatical categories is /t/ and (ii) to show how certain rules of sibilant assimilation and softening can be employed to account for the dialect differences shown in the various allomorphs of this underlying /t/.

In the preceding chapter (2.1.28) we showed that the East and West Hausa dialects differ in the way the 'genitival link' and 'referential' are expressed. We observed that the terms 'genitival' and 'referential' are names given by the Hausa traditional grammarians to one element in order to refer to the kinds of functions it performs. The functions include the following:

(a) a possessive function

(b) a demonstrative function

(c) a referential function

It was also shown that the element could be short or long. The

genders of possessed nouns (in possessive function) or nouns which have been referred to previously in discourse (i.e. referential function) are distinguished by selecting the appropriate element, thus a 't' element occurs in all markers of feminine gender, e.g. my gown' may appear as /ɽigata/ or /ɽiga tawa/ or even /ɽiga tɐw/ (depending on the dialect). An 'n' element is used to mark masculine and plural noun forms.

We observe that there is one marker which is common to all dialects (except the Bauchi and Zariya varieties) and that is the feminine marker /t/ as seen in the preceding example.

In the present analysis of Hausa dialects we will call this element the 'Gender Sensitive Element' (GSE henceforth). So that the 't' element would be FGSE (Feminine Gender Sensitive Element), while the 'n' element would be MGSE (Masculine Gender Sensitive Element). In this section we are concerned with the FGSE only because it is in it that we observe dialect variation.

Looking at the referential function of the FGSE we find that the following allomorphs occur: [s], [ɾ], [l], [t] and [j](depending on the dialect and environment). Examples:

EH		WH		Gloss
KANO	DAURA	SAKKWATO	KATSINA	
ɽiga-s ɽiga-r	ɽiga-l	ɽiga-t	ɽiga-j	the gown

Functioning as a possessive marker the following allomorphs occur: [t], [r], [s], as well as a consonant segment which exhibits totally identical features to those of any following consonant, as

shown in the following examples:

EH	WH	Gloss
ɽiga-r bɐla	ɽiga-b bɐla	Bala's gown
ɽiga-r wawa	ɽiga-w wawa	fools' gown
ɽiga-r zubɐjɽu	ɽiga-z zubɐjɽu	Zubairu's gown
gona-t-a	gona-t-a	my farm
gona-r-ka	gona-k-ka	your(masc) farm
gona-r-ki	gona-k-ki	your(fem) farm
gona-r-sa(~s-sa)	gona-s-sa (~ ʃ-ʃi)	his farm
gona-r-ta	gona-t-ta	her farm
gona-r-mu	gona-n-mu	our farm
gona-r-su (~s-su)	gona-s-su	their farm

While functioning as a demonstrative element we find the allomorphs [ɽ], [ɻ] as well as a consonant which exhibits identity with a following consonant. Examples:

	'THIS ONE'		'THAT ONE'	
	Masc	Fem.	Masc.	Fem.
EH:	wa-n-nɐn	wa-n-nɐn	wa-n-ʧɐ n	wa-ʧ-ʧɐ n
WH sk	wa-n-ga	wa-g-ga	wa-n-ʧɐ n	wa-ʧ-ʧɐ n
WH Zamf	wa-n-ga	wa-l-ga		
		wa-r-ga		
WH Kt	wa-n-ʔɪn	wa-ʔ-ʔɪn	wa-n-ʧɐ n	wa-ʧ-ʧɐ n

EH	WH	Gloss
jaɽɪnja-n-nɐn	jaɽɪnja-g-ga	this girl
jaɽo-n-nɐn	jaɽo-n-ga	this boy

EH	WH	Gloss
jaɾɪnja-ʧ-ʧɐ n	jaɾɪnja-ʧ-ʧɐ n	that girl
jaɾo-n-ʧɐ n	jaɾo-n-ʧɐ n	that boy

Let us consider the distribution of various forms of the FGSE in referential function. We find that in EH (Kano variety in particular) there is 's' which alternates with [ɾ] as in 'ɾigɐs' or 'ɾigɐr' meaning 'the gown (we talked about).' In the Daura variety of Hausa there is [l] as in 'ɾigɐl' the gown' whereas in WH (Sakkwato variety in particular) there is [t]; and in the Katsina variety of WH we always find a glide.

In the possessive function we find that there is [s] before another [s] in EH and [ɾ] before any other consonant.

In the case of the demonstrative function of the FGSE we find that there are assimilations of consonants in both proximal and distal feminine particles except in the case of the Zamfara variety of Hausa where [ɾ] alternates with [l] in the proximal particle.

In order to account for these variations we propose to posit a common underlying marker. The segment which is the most likely candidate for this underlying marker must be one which would tend to assimilate to a following consonant. We are setting up /t/ as the underlying FGSE for the following reasons:

(a) that a /t/ surfaces in all the dialects in the 1st person singular possessive.

(b) that there is a phonotactic constraint in the language which would prohibit the occurrence of /t/ before another consonant; hence there is

surface phonotactic motivation for the assimilation phenomenon in WH. [1]

(c) that this same phonotactic constraint would explain the changing of /t/ to [ɾ], [s] and [l] in EH; as well as assimilations to the initial consonants of the proximal and distal particles.

The various forms of the FGSE then are accounted for by means of the following rules:

4.4.1 Softening rules: to account for the final l, j, r and s found in the referential forms in Daura, Katsina and Kano.

4.4.1.1 Daura:

$$\begin{bmatrix} +\text{cor} \\ -\text{voice} \\ -\text{strid} \\ -\text{son} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{son} \\ +\text{lat} \\ +\text{voice} \end{bmatrix} / \_\_ \#\#$$

4.4.1.2 Katsina:

$$\begin{bmatrix} +\text{cor} \\ -\text{voice} \\ -\text{strid} \\ -\text{son} \end{bmatrix} \rightarrow \begin{bmatrix} -\text{cons} \\ +\text{son} \\ +\text{voice} \\ +\text{pal} \end{bmatrix} / \_\_ \#\#$$

4.4.1.3.1 Kano:

$$\begin{bmatrix} +\text{cor} \\ -\text{son} \\ -\text{strid} \\ -\text{voice} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{son} \\ +\text{voice} \\ +\text{vib} \end{bmatrix} / \_\_ \#\#$$

1. The same phonotactic constraint which is responsible for the total assimilation and softening behaviour of the underlying FGSE (/t/) can be seen to operate in the intensive forms of verbs the final stem of which is /t/ (see 6.5).

4.4.1.3.2

$$\sim \begin{bmatrix} + \text{cor} \\ - \text{son} \\ - \text{strid} \\ - \text{voice} \end{bmatrix} \rightarrow [+ \text{strid}] / \text{——} \; \#\#$$

4.4.2 Sibilant assimilation: to account for the /t/ assimilation to [s] as found in Kano.

$$\begin{bmatrix} + \text{cor} \\ - \text{voice} \\ - \text{son} \\ - \text{strid} \end{bmatrix} \rightarrow [+ \text{strid}] / \text{——} \begin{bmatrix} + \text{cor} \\ - \text{voice} \\ + \text{strid} \\ - \text{high} \\ - \text{glot} \end{bmatrix}$$

3. $$\begin{bmatrix} + \text{cor} \\ - \text{voice} \\ - \text{strid} \\ - \text{son} \end{bmatrix} \rightarrow \begin{bmatrix} + \text{son} \\ + \text{vib} \end{bmatrix} / \text{——} \; [- \text{syll}]^{*}$$

* Condition: [-syll] ≠ /s/.

4.4.3 To account for the total assimilation process found in the possessive and demonstrative functions in WH we would need the following rule:

Total assimilation rule:

$$\begin{bmatrix} + \text{cor} \\ - \text{voice} \\ - \text{strid} \\ - \text{son} \end{bmatrix} \rightarrow \begin{matrix} \text{C} \\ [\alpha F] \end{matrix} / \text{——} \begin{matrix} \text{C} \\ [\alpha F] \end{matrix}$$

This means that the underlying /t/ acquires all the features of

the following segment (i.e. it assimilates totally to it).

4.4.4 Zamfara: To account for the 'l' and 'r' found in the proximal demonstrative particle in Zamfara the following rule is needed:

4.4.4.1 $\begin{bmatrix} + \text{cor} \\ - \text{voice} \\ - \text{strid} \\ - \text{son} \end{bmatrix} \begin{bmatrix} + \text{son} \\ + \text{voice} \\ + \text{vib} \end{bmatrix} / \_\_ \quad [\text{Prox. Dem. Part.}]$

4.4.4.2 $\begin{bmatrix} + \text{cor} \\ - \text{voice} \\ - \text{strid} \\ - \text{son} \end{bmatrix} \begin{bmatrix} + \text{son} \\ + \text{lat} \\ + \text{voice} \end{bmatrix} / \_\_ \quad [\text{Prox. Dem. Part.}]$

Concerning the long FGSE expressing possession as seen in the 1st person singular there is a problem as to what would be the underlying pronoun. There are three possible solutions.

The first solution is to set up /tɐ#na/ as the underlying form and apply a rule of syncope to the pronoun /na/, tense (prolong) the lax vowel to /a/ then insert a glide /w/ by the rule of expenthesis. So that the derivation would proceed as follows:

/# tɐ # #na#/	UR
ta - na	vowel tensing
ta - a	syncope
tawa	glide epenthesis
[ta:waʔ]	SR

Positing /na/ as the underlying form of the 1st singular fits very well into the pronoun paradigms, as shown below:

ta-na 'mine'

ta-ka 'yours (masc)'

ta-ki 'yours (fem)'

ta-sa his

ta-ta hers

ta-mu ours

ta-ku yours (pl)

ta-su theirs

Cf.

na tɐΦi 'I went'

ka tɐΦi 'You (masc) went'

Assuming that the above analysis holds we would account for the dialect variation by simply applying apocope after the glide epenthesis to get WH derivation of the underlying form. There is one important objection to this analysis, and this is as to why there should be a syncope in the first place. There is no real reason for invoking a rule such as syncope to handle these data, since such a rule is otherwise unmotivated.

A second solution would be to posit / # tɐ # # wa # / as the underlying form and simply derive the WH [tɐw] by the apocope rule. The question in this case would be where this /wa/ comes from. There certainly isn't any other case in the language where /wa/ functions as a 1st person singular pronoun.

The last analysis would be to say that it is the impersonal pronoun /ʔa/ which is employed here, perhaps as a polite usage, instead

of using the 1st person singular. [1] Assuming that the analysis is correct the underlying / # tɐ # # ʔa # / would have the following derivation:

EH:	/ # tɐ # # ʔa # /	UR
	ta - ʔa	vowel tensing
	ta - a	glottal deletion
	tawa	glide epenthesis
	[ta:waʔ]	SR
WH:	/ # tɐ # # ʔa # /	UR
	ta - ʔa	vowel tensing
	ta - a	glottal deletion
	tawa	glide epenthesis
	taw	apocope
	tɐw	laxing
	[tɐw]	SR

We have so far discussed the three possible approaches to accounting for the surface realization of the long FGSE in possessive function in the 1st person singular. We have seen that the first and the third approaches are more likely to be favoured over the second approach for the simple reason that /na/ and /ʔa/ are both pronouns, while /wa/ is not. While this is true we also see that the invocation of a glide epenthesis rule to handle these forms is independantly motivated as it would operate in certain categories of nouns to derive forms designating ethnicity, (see Truncation and Apenthesis rules, 4.6).

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1. This would not be peculiar to Hausa alone, English uses 'one' to refer to 'oneself' in a polite way.

4.5.0 Sonorant assimilation

It will be recalled that only verbs whose final-stem consonants are /m/, /w/, /j/, /ɾ/, /n/; /t/, /d/, /ɗ/, /s/, /z/, /ts/ can have alternative intensive forms provided that the initial and final stem consonants are not identical or near identical sonorants, or the initial consonant of the stem is not the strident /s/; in which cases only one form of the intensive verb form is possible. Verbs whose final stem consonants are /b/, /ɓ/, /ɕ/, /g/, /k/ have only one form of the intensive verb in the case of EH. In WH only one form of the intensive verb form exists anyway. Consider the following examples: (The examples of chapter 2 (item 2.1.27) are repeated here for convenience).

A.	Intensive verb		Simple verb	Gloss
	EH	WH		
	kɐnkama		kama	to catch
	kɐkkama	kɐkkama		
	zɐnzana		zana	to draw
	zɐzzana	zɐzzana		
	tɐjtɐja		tɐja	to help
	tɐttɐja	tɐttɐja		
	hɐwhɐwa		hɐwa	to rise
	hɐhhɐwa	hɐhhɐwa		
	tɐrtaɽa		taɽa	to collect
	tɐttaɽa	tɐttaɽa		
But	nunnuna	nunnuna	nuna	to ripe
	mɐnmɐnna	mɐnmɐnna	mɐnna	to stick
	lulluɽa	lulluɽa	luɽa	to look after

	EH	WH		
B.	kɐrkɐsa		kɐsa	to pile in heaps
	kɐkkɐsa	kɐkkɐsa		
	ʔɐrʔɐza		ʔɐza	to place
	ʔɐʔʔɐza	ʔɐʔʔɐza		
	hɐrhɐɗa		hɐɗa	to join
	hɐhhɐɗa	hɐhhɐɗa		
	mɐrmɐtsa		mɐtsa	to move
	mɐmmɐtsa	mɐmmɐtsa		
	gɐrgada		gada	to inherit
	gɐggada	gɐggada		
	ΦɪrΦɪta		Φɪta	to go out
	ΦɪΦΦɪta	hɪhhɪta		

But there are exceptions:

sɐssata	sɐssata	sata	to steal
sɐssada	sɐssada	sada	to introduce
sʊssʊɗa	sʊssʊɗa	sʊɗa	to finish up the remaining food

C.	EH	WH		
	zɐzzaɓa	zɐzzaɓa	zaɓa	to choose
	ɾɪɾɾɪka	ɾɪɾɾɪka	ɾɪka	to get hold of
	ɾɐɾɾɐba	ɾɐɾɾɐba	ɾɐba	to distribute
	bʊbbʊga	bʊbbʊga	bʊga	to beat
	dɐddɐΦa	dɐddɐph^{w}a	dɐΦ^{w}a	to cook

In order to explain the processes involved we would like to suggest that all intensive (verb) forms are underlyingly fully-reduplicated, and through the rule of apocope, at least in the case of verbs with a CVCV

structure, the final vowel is deleted. [1] So that the derivations of the underlying / #kama# #kama# / and / #zaba# #zaba# / may proceed as follows:

EH:	/ #kama# #kama# /	UR
	kɐm - kama	apocope
	kɐŋkama	nasal assimilation (3.3.1.3)
	[kɐk:a:ma:]	SR

EH & WH:

	/ #kama# #kama# /	UR
	kɐm - kama	apocope
	kɐkkama	total assimilation
	[kɐk:a:ma:]	SR
	/ #zaba# #zaba# /	UR
	zab - zaba	apocope
	zazzaba	total assimilation
	zɐzzaba	laxing
	[zɐz:aba:]	SR

In the case of forms with a structure longer than CVCV after the apocope rule has applied the segment or segments between the initial CV and the consonant preceding the apocopated vowel will be deleted, as in the derivation of the underlying / #zɐwna# #zɐwna# / 'to sit':

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1. However, there are a few forms of adverbs which surface both fully and partically reduplicated, e.g. / #mɐza# #mɐza# / and / #kusa# #kusa# / surfacing [mɐzɐmɐza:] and [k^{w}usɐk^{w}usa:] respectively, or [mɐrmɐza:]: [mɐm:ɐza:] and [k^{w}urk^{w}usa:] : [k^{w}uk:^{w}usa:] 'very quick' and 'very near' respectively.

EH:	/ #zɐwna# #zɐwna# /	UR
	zɐwn - zɐwna	apocope
	zɐnzɐwna	syncope
	[zɐnzɐwna:]	SR

EH & WH:

/ #zɐwna# #zɐwna# /	UR
zɐwn - zɐwna	apocope
zɐnzɐwna	syncope
zɐzzɐwna	total assimilation
[zɐz:ɐwna:]	SR

One observes that the final consonant of those verbs which have alternative intensive verb forms form natural classes, namely those having the feature [+ son] and those with the features, [+ cor, - son]. And the ones without alternative intensive verb forms constitute another class i.e. [-cor, -son] (the 'old' [+grave] obstruents). It is also observed that in the case of forms with an initial segment /s/ and a final-stem consonant with the features [+ cor, - son] the segment does not become [ɾ] but assimilates totally to the following /s/ (see exceptions under 'B'). In the case of forms whose initial segments and stem-final consonants are identical or near identical sonorants there is either assimilation or gemination, as seen in exceptions under 'B' where /n/ and /ɾ/ assimilate to [m] and [l] respectively. But the /n/ in /nuna/ is a case of gemination.

The basic differences between EH and WH can therefore be seen as consisting in three things, namely (i) the optional application of a rule of total assimilation of sonorants to a following segment (after the application of the apocope rule) (ii) the softening of segments

with the features [± cor, - son] so as to surface as [ɾ] before any consonant other than /s/ and (iii) the obligatory assimilation of certain consonants in EH and of any segment in WH.

In order to account for these processes we provide the following rules:

4.5.1 WH:

$$[-\text{syll}] \rightarrow [\alpha F] \Big/ \ \# \ [-\text{syll}] \ [+\text{syll}] \text{——} \begin{bmatrix} -\text{syll} \\ \alpha F \end{bmatrix} \quad [\text{Intensive}]$$

4.5.2 EH;

$$\begin{bmatrix} +\text{cor} \\ -\text{son} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{son} \\ +\text{vib} \end{bmatrix} \Big/ \ \# \ [-\text{syll}] \quad [+\text{syll}] \text{——} [-\text{syll}]^{*} \quad [\text{Intensive}]$$

* Condition: [-syll] ≠ /s/.

4.5.3 $$\begin{bmatrix} -\text{syll} \\ \left\{ \begin{bmatrix} -\text{cor} \\ -\text{son} \end{bmatrix} \\ [+\text{son}] \right\} \end{bmatrix} \rightarrow \alpha F \Big/ \# \ [-\text{syll}] \ [+\text{syll}] \text{——} \begin{bmatrix} -\text{syll} \\ \alpha F \end{bmatrix} \quad [\text{Intensive}]$$

Rule 4.5.1 asserts that any nonsyllabic segment acquires all the features of a following consonant in the intensive verb. This rule operates in WH obligatorily. Rule 4.5.2 converts all segments with the feature specifications [± cor, - son] into [ɾ] before any segment (except /s/) in the intensive verb. This rule operates in EH optionally. The rule is similar to our softening rule which converts FGSE /t/ into [ɾ] before any consonant except /s/ (see 4.5). The last rule (4.5.3) has two expansions: the first expansion asserts that segments with the feature specifications [- cor, - son] assimilate to a following consonant in the intensive verb. The second expansion states that the

final sonorant of the reduplicated part of the stem assimilate totally to the segment immediately following it in the intensive verb. The rule applies optionally in EH.

4.6.0 Truncation, epenthesis and raising rules.

Certain feminine forms in Hausa are basically derived either by glide epenthesis or by truncation depending on the categories of forms concerned and dialects concerned.

The motivation for the development of a glide rests upon the fact that the morpheme structure condition of Hausa does not allow a sequence of two different vowels or a sequence of more than two identical vowels. (The same, of course, is true of consonants.) So whenever such a sequence occurs as the result of a morphological process there must be either a glide epenthesis or truncation.

The choice of which glide to insert depends entirely upon the first vowel of the sequence. If the vowel has the feature specification [-pal] the glide would also be expected to have the feature specification [-pal]. If on the other hand it has the feature [+pal], the glide would also be [+pal].

It has been shown in chapter 2 (2.1.23) that EH and WH differ from each other in the derivation of feminine forms of nouns designating ethnicity and also in the derivation of feminine participles. We shall show in the following paragraphs that these differences can be accounted for by rules of truncation, epenthesis and raising. In order to show how these rules operate in the dialects we would like to make the following claims:

(i) that certain feminine nouns are derived from their corresponding cognate masculine forms.[1] Taylor (1923) argues for this essentially.
(ii) that the underlying feminine marker in Hausa is /a/. That this is fairly obviously the case is realized when we look at the normal Hausa feminine forms (i.e. for those nominal lexemes that have both masculine and feminine counterparts.[2])
(iii) that participles, like intensive verbs, (see 4.5) are underlyingly fully-reduplicated. The difference is that the rules operate in different places in the reduplicated form, and the total assimilation is obligatory regardless of the dialect under discussion or of whether the segment has the feature specifications [- cor, - son] or not.

In order to illustrate these points we provide the following examples:

	FEM		Gloss
masc.	EH	WH	
bɐhɐwʃe	bɐhɐwʃɪja	bɐhɐwsa	a Hausa woman
bɐbɐɽbɐɽe	bɐbɐɽbɐɽɪja	bɐbɐɽbɐɽa	a Kanuri woman
bɐʤahuni	bɐʤahuna	bɐʤahuna	a Jahun woman
bɐgobɪɽi	bɐgobɪɽa	bɐgobɪɽa	a Gobir woman
bɐzɐgzɐgi	bɐzɐzzɐga	bɐzɐzzɐga	a Zazzau woman
bugɐgge	bugɐggɪja	bugɐggɪja	a woman drunkard
nɪkɐƙke	nɪkɐƙkɪja	nɪkɐƙka	a ground one (f)
wɐnkɐkke	wɐnkɐkkɪja	wɐnkɐkka	a washed one (f)

1. It may be recalled that in the previous section under the heading 'Rhotacization' we argued that only the 'stem-method' can be used to account for certain Hausa derivatives.
2. Names of towns and rivers, for example, carry feminine gender markers regardless of their endings.

According to the present analysis the above feminine forms can underlyingly be represented as follows:

/ #bɐhɐwsa+e+a# /

/ #bɐbɐɽbɐɽ+e+a# /

/ #bɐʤahʊn+i+a# /

/ #bɐgobɪɽ+i+a# /

/ #bɐzɐzzɐg+i+a# /

/ #bʊga# #bʊga+e+a# /

/ #nɪka# #nɪka+e+a# /

/ #wɐnka# #wɐnka+e+a// /

In these examples we can see that WH employs fewer rules than EH. We find that EH applies syncope, truncation, glide epenthesis, raising, assimilation and laxing to particples, while in the patrynomics only truncation, glide epenthesis, raising and palatalization apply (depending on the final stem consonant).

A clear picture showing which rules operate in which dialect may be presented as follows:

EH:	/bɐhɐwsa+e+a /	UR
	bɐhɐws -e-a	Truncation
	bɐhɐwʃe - a	palatalization
	bɐhɐwʃeja	glide epenthesis
	bɐhɐwʃɪja	raising
	[bɐhɐwʃɪja:]	SR
WH:	/bɐhɐwsa+e+a /	UR
	bɐhɐwsa - a	masc. marker deletion
	bɐhɐwsa	Truncation
	[bɐhɐwsa:]	SR

Cf. bɐsɐkʷkʷɐ̀ to+e+a which is realized as [bɐsɐkʷ:ɐ ʧɪja] in EH but [bɐsɐkʷ:ɐta:] in WH.

EH:	/buga/# /#buga+e+a/	UR
	bugabga - e - a	syncope
	bugabge - a	truncation
	bugabgeja	glide epenthesis
	bugɐbgeja	laxing
	bugɐbgɪja	raising
	bugɐggɪja	assimilation
	[bugɐg̀:ɪja:]	SR
WH:	/buga/# /#buga+e+a/	UR
	bugabga - e - a	syncope
	bugabga - a	masc. marker deletion
	bugɐbga - a	laxing
	bugɐgga - a	assimilation
	bugɐgga	truncation
	[bugɐg:a:]	SR

One observes that the rules of epenthesis, truncation and raising are independantly motivated for Hausa in general and can be seen to operate in certain forms other than the categories under discussion (i.e. the patronymics and particles). We find that j-epenthesis operates in feminine derivatives of masculine noun forms ending in /-e/,[1] and in the feminine counterparts of nouns of agent terminating

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1. There are a few exceptions such as /kuɽe/ 'hyena' which becomes /kuɽa/ by truncation.

in 'ʧi' (egs. bɛbe/bɛbɪja and mɛkɛɾjɛʧi/ mɛkɛɾjɛʧija 'dumb' and 'liar'.

In order to account for the processes involving the glide epenthesis, truncation and raising we provide the following rules:

4.6.1 Truncation rule:

$$[+\text{ syll}] \rightarrow \emptyset \;/\; \text{——} \; + [\text{syll}]$$

4.6.2 Epenthesis rule:

$$\emptyset \rightarrow \begin{bmatrix} - \text{ cons} \\ - \text{ syll} \\ \alpha \text{ pal} \end{bmatrix} \;/\; \begin{bmatrix} + \text{ syll} \\ \alpha \text{ pal} \end{bmatrix} \text{——} + [+ \text{ syll}]$$

4.6.3 Raising rule:

$$\begin{bmatrix} + \text{ syll} \\ - \text{ low} \end{bmatrix} \rightarrow [+ \text{ high}] \;/\; \text{——} \; \begin{bmatrix} - \text{ syll} \\ - \text{ cons} \end{bmatrix}$$

Rule 4.6.1 asserts that a vowel is deleted in the environment before another vowel across a morpheme boundary. Rule 4.6.2 states that a glide is inserted in the environment after a vowel and before another vowel across morpheme boundary, its quality being determined by that of the preceding vowel. Rule 4.6.3 raises all nonlow vowels in the environment before a glide.

4.7.0 Laxing, centralizing and lowering rules.

It is observed that in all the varieties of Hausa when the derivational suffix /-nʧi/ 'the language of...' or 'the act of...' is suffixed to a noun form the preceding vowel is reduced (it will be recalled that Hausa does not tolerate a tense vowel preceding two consonants word-medially and nor by a consonant word-finally). Here all

nonhigh vowels are reduced to [ɐ], as in the following examples:

UR	SR	Gloss
/kɐno+n ʧi/	[kɐnɐ̀ʧi:]	Kano speech
/sɐkʷkʷɐto+n ʧi/	[sɐkʷ:ɐtɐ̀ʧi:]	Sakkwato speech
/kɐtsɪna+n ʧi/	[kɐt͡s'ɪnɐ̀ʧi:] : [kɐʧ'ɪnɐ̀ʧi:]	Katsina speech
/nʊpe + n ʧi/	[nʊpɐ̀ʧi:] : [nʊhʷɐ̀ ʧi:]	Nupe language
/ɾɐgo + n ʧi/	[ɾɐgʷɐ̀ ʧi:]	cowardice

While this indicates the behaviour of Hausa in general, the Kano variety behaves rather differently from the other varieties of Hausa. In the Kano variety one observes that the reduction and laxing of nonhigh vowels to [ɐ] is not restricted to the morpheme /-n ʧi/, as it can be seen operating elsewhere in the language. For example, when MGSE /n/ is suffixed to these vowels both reduction and laxing take place, while in other varieties only laxing applies, as exemplified below:

Kano specific

UR	SR	
kɐɾe + n	[kɐɾɐŋ]	the dog (we talked about)
jaɾo + n	[ja:ɾɐŋ]	the boy " " "
bebe + n	[be:bɐŋ]	the deaf " " "
sabo + n	[sa:bɐŋ]	the new " " "

Other varieties

UR	SR
kɐɾe + n	[kɐɾɛŋ]
jaɾo + n	[ja:ɾɔŋ]
bebe + n	[be:bɛŋ]
sabo + n	[sa:bɔŋ]

On the other hand if the MGSE is attached to the high vowels (/i/ and /u/) in Kano the vowels are reduced to [ɘ] after the segments with feature specifications [± ant, + cor], while in the other varieties they are simply laxed to [ɪ] and [ʊ] respectively. e.g.

Kano specific

UR	SR	
gaɽu + n	[ga:ɽɘŋ]	the wall (we talked about)
bɪɽi + n	[ɓɪɽɘŋ]	the monkey " " "
ʔɐlli + n	[ʔɐl:ɘŋ]	the chalk " " "
ʔɐk^{w}ati + n	[ʔɐk^{w}a:tɘŋ]	the box " " "

Other varieties

UR	SR	Gloss
gaɽu + n	[ga:ɽʊŋ]	the wall (we talked about)
bɪɽi + n	[ɓɪɽɪŋ]	the monkey " " "
ʔɐlli + n	[ʔɐl:ɪŋ]	the chalk " " "
ʔɐk^{w}ati + n	[ʔɐk^{w}a:tɪŋ]	the box " " "

In the case of the mid-vowels if the initial segment of the final syllable is a velar one the variety exhibits some kind of 'phonemicization' phenomenon, thus:

Kano specific

UR	SR	Gloss
keke + n	[k^{j}e:k^{j}ɐŋ]	the bicycle (we talked about)
ɽago + n	[ɽa:g^{w}ɐŋ]	the ram " " "
mage + n	[ma:g^{j}ɐŋ]	the cat " " "

Other varieties

UR	SR	Gloss
keke + n	[ɮʲe:kʲɛŋ]	the bicycle (we talked about)
ɽago + n	[ɽa:gʷɔŋ]	the ram " " "
mage + n	[ma:gʲɛŋ]	the cat " " "

What this means is as follows: In Hausa in general the palatalized and labialized back phonemes are followed immediately only by a low vowel, e.g. /kʷa/, /gʷa/, /kʲa/, /gʲa/ as in /kʷɐndo/, /gʷɐnda/, /kʲɐnwa/, /gʲɐɗa/ 'basket' pawpaw', 'cat' and 'peanut' respectively, but phonemically we do not have */kʷo/, */gʷo/, */kʲe/, */gʲe/. In the case of the plain counterparts of these phonemes they can be followed by any vowel, e.g. /k/ as in /kɐɽe/ 'dog', /koko/ 'pup', /kuɽa/ 'hyena' and /keta/ 'to tear' with the following surface representations:

UR	SR
/kɐɽe/	[ɮɐɽe:]
/koko/	[kʷo:kʷo:]
/kuɽa/	[ɮʷu:ɽa:]
/keta/	[kʲe:taˑʔ]

When a suffix '-n' is attached to one of the plain consonants in the Kano variety we find, for example, that /koko + n/ surfaces as [kʷo:kʷɐŋ], not as [ɮʷo:kʷɔŋ], so that /kʷakʷa + n/ 'the coconut ' and /koko + n/ 'the pup' surface as [kʷa:kʷɐŋ] and [kʷo:kʷɐŋ] respectively so that /ko + n/ and /kʷa + n/ have an identical surface realization, viz. [kʷɐŋ]. The point is that within the theoretical stand adopted by classical phonemicists the second instance of [kʷ] in [ɮʷo:kʷɐŋ] would have to be regarded as phonemically distinct from the first in-

stance of [k^w]. Of course within the approach adopted here neither of these segments is phonemically /k^w/, both are derived.

In order to account for the dialect differences we provide the following rules:

Laxing rule (obligatory in all varieties of Hausa):

4.7.1 $$\begin{bmatrix} + \text{ syll} \\ + \text{ tense} \end{bmatrix} \longrightarrow [-\text{ tense}] \Big/ \text{—} \, C \begin{Bmatrix} \# \\ C \end{Bmatrix}$$

lowering rule (obligatory in all varieties of Hausa):

4.7.2 $$\begin{bmatrix} + \text{ syll} \\ - \text{ high} \\ - \text{ low} \end{bmatrix} \longrightarrow [+ \text{ low}] \Big/ \text{——} \; + \text{ntʃi}$$

Kano specific lowering

4.7.3 $$\begin{bmatrix} + \text{ syll} \\ - \text{ high} \\ - \text{ low} \end{bmatrix} \longrightarrow [+ \text{ low}] \Big/ \text{—} \; C \begin{Bmatrix} \# \\ C \end{Bmatrix}$$

Kano specific centralizing

4.7.4 $$\begin{bmatrix} + \text{ syll} \\ + \text{ high} \end{bmatrix} \longrightarrow \begin{bmatrix} - \text{ back} \\ - \text{ round} \\ - \text{ pal} \end{bmatrix} \Big/ \begin{bmatrix} + \text{ cons} \\ + \text{ cor} \\ + \text{ ant} \\ - \text{ pal} \\ - \text{ round} \end{bmatrix} \text{—} \; C \begin{Bmatrix} \# \\ C \end{Bmatrix}$$

The first two rules are general rules operating throughout Hausa. The first rule (4.7.1) asserts that all tense (long) vowels become non-tense (short) word-medially or before a consonant word-finally. The second rule (4.7.2) lowers all mid-vowels to [ɛ] in the environment before a derivational suffix '-ntʃi'.

While rule 4.7.2 is restricted to the environment before the derivational suffix 'n ʧi' (in certain varieties of Hausa) the Kano lowering rule (4.7.3) states that all mid-vowels are lowered to [ɐ] in the environment before CC word-medially or a consonant word-finally and does not restrict it just to '-n ʧi' as does rule 6.7.2.

Rule 4.7.4 asserts that all tense high vowels are centralized in the environment before nonsyllabic segments with the feature specifications [+ ant, + cor, - round, - pal].

4.8.0 Contraction rule

This involves the deletion of certain segments and it occurs within a morpheme. This contraction has been observed to operate in disyllabic forms which have a sequence of a glide plus a vowel finally. Here the vowel is optionally deleted, as shown in the following examples:

UR	SR	SR	Gloss
/ƙoji/	[kʼʷɐ j]	[kʼʷo:ji:]	egg
/ɗoji/	[ɗʷɐj]	[ɗʷo:ji:]	odour
/maji/	[mɐj]	[ma:ji:]	oil, butter
/ʈaji/	[ʈɐj]	[ʈa:ji:]	life
/kaji/	[kɐj]	[ka:ji:]	head
/jawu/	[jɐw]	[ja:wu:]	saliva
/sawu/	[sɐw]	[sa:wu:]	foot-print
/kʲawu/	[kʲɐw]	[kʲa:wu:]	beaty
/baji/	[bɐj]	[ba:ji:]	slaves

We also observe that when an MGSE /n/ is attached to these forms both the vowel and the glide may be deleted. Consider, for example, the following:

UR	SR	
/ƙoji # n/	[ƙ$^{w'}$ɐ ŋ]	[k$^{w'}$o:jɪŋ] [1]
/ɗoji # n/	[ɗ^{w}ɐŋ]	[ɡ^{w}o:jɪŋ]
/maji # n/	[mɐŋ]	[ma:jɪŋ]
/ɽaji # n/	[ɽɐŋ]	[ɽa:jɪŋ]
/kaji # n/	[kɐŋ]	[ka:jɪŋ]
/jawu # n/	[jɐŋ]	[ja:wʊŋ]
/sawu # n/	[sɐŋ]	[sa:wʊŋ]
/k^{j}awu # n/	[ƙ^{j}ɐ ŋ]	[k^{j}a:wʊŋ]
/baji # n/	[bɐŋ]	[ba:jɪŋ]

In order to account for both these contractions we would need a rule of the form:

4.8.1 Contraction rule (optional):

$$X \left\langle \begin{bmatrix} -\text{syll} \\ -\text{cons} \end{bmatrix} \right\rangle \; [+\text{syll}] \rightarrow \emptyset \Big/ \#[-\text{syll}\,][+\text{syll}] \text{———} \#\left\langle\left\langle \begin{matrix} n \\ [\text{MGSE}] \end{matrix} \right\rangle\right\rangle$$

condition: where x exceeds more than two syllables the rule ceases to be optional).

The rule therefore asserts that when a glide (/j/ or /w/) is immediately followed any vowel both the glide and the vowel may optionally be deleted if they are followed by an MGSE. If, however, the MGSE is not present only the vowel but not the glide is deleted. So that the derivations of the underlying /ƙoji/ 'egg' and /ƙoji#n/ 'the egg (we talked about)' may proceed as follows:

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1. The two different surface realizations of these forms cannot be assigned to a particular dialect because their distribution is more a matter of urban versus rural varieties of Hausa. The contracted forms belonging to the urban variety. Except in the cases of [k^{w}ɐ j] and [d^{w}ɐj] which would be pronounced as [k^{w}ɔj] and [d^{w}ɔj] in varieties other than the Kano variety. The latter is typical of the Sakkwato variety.

/ɦoji# n/	UR	/ɦoji/	UR
ɦ^{w}oji-n	labialization	ɦ^{w}oji	labialization
ɦ^{w}on	contraction	ɦ^{w}oj	contraction
ɦ^{w}ɛn	lowering	ɦ^{w}ɛj	lowering
[k$^{w'}$ɛ ŋ]	SR	[k$^{w'}$ɛ j]	SR

While this rule of contraction can be seen as operating in a certain class of masculine noun forms whose final syllables contain glides (cf. ɦojin → ɦ^{w}ɛ n), the Kano variety exhibits an idiosyncracy in having a type of contraction different from the above. But it applies only to two lexical items whose final syllables do not contain glides. The contraction takes place only when the GSE is attached to these items. These nouns are /ɦoΦa/ 'door' and /sɐɽki/ 'emir'. So that when the GSE is attached to them thus /koΦa#t/ is realized as [k$^{w'}$o:Φɛr] or [k$^{w'}$ɛ r]; the former being a slow speech form while the latter is a rapid speech form. And /sɐɽki#n/ is realized as [sɐɽk^{j}ɪŋ] or [sɛŋ]. [k$^{w'}$o:Φɐr] and [sɐɽk^{j}ɪŋ] are heard in all varieties (with some variation in the former) of Hausa, while [k$^{w'}$ɛ r] and [sɐŋ] are idiosyncratic as they are only heard in Kano. [sɐŋ] is exclusively used to refer to the emir of Kano. Though [k$^{w'}$ɛ r] and [sɐŋ] could be perhaps be interpreted as surface representations of /koΦa#t/ and /sɐɽki#n/ we would nonetheless treat them as having different underlying forms from these ones so that [sɛŋ] has /sɐn/ as its underlying form, while [k$^{w'}$ɛ r] has /ɦ^{w}ɛr/ as its underlying form.

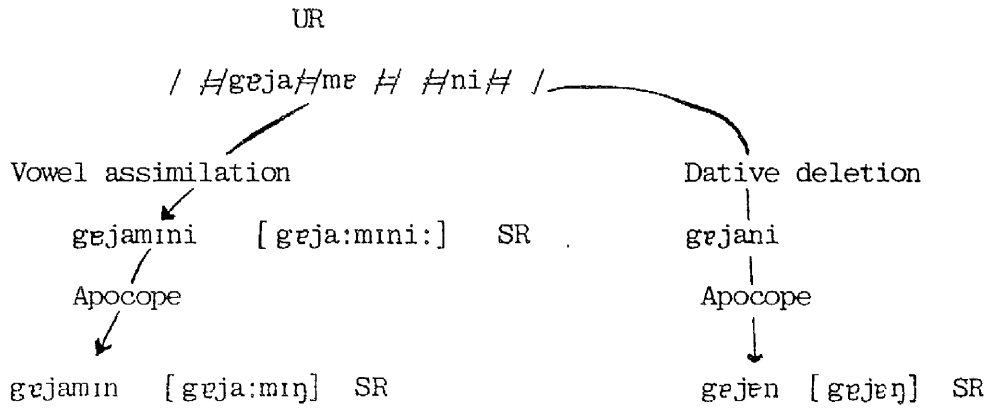
The decision to treat them in this way is based on two things (i) economy and (ii) productivity. Economically to formulate a rule for

just two lexical items is not worthwhile. While it is uneconomical to formulate such a rule, the rule itself would also be unproductive (and of course unpredictive) since there are other lexical items with the same structure which do not undergo the rule, such as the following:

/kɐΦa#t/	[kˈɐΦɐr]	*[kˈɐr]	leg
/toΦa#t/	[to:Φɐr]	*[tɐr]	type of grass
/sɐwki#n/	[sɐwkʲˈɪ ŋ]	*[sɐŋ]	healing

4.9.0 'Dative deletion'

What may be termed 'Dative deletion' has been observed to operate in sentences with 1st person singular as an indirect object. Here the verbs are followed by a particle /mɐ/ 'to, for' and the indirect object /ni/ 'me'. In this type of construction two independent processes are involved, namely (i) the deletion of the 'i' of the indirect object /ni/ and (ii) the deletion of the dative particle /mɐ/. Consider, for example, the surface realizations of /gɐja#mɐ# #ni/ '... told me, tell me' which may appear as [gɐja:mɪni:], [gɐja:mɪŋ] or [gɐjɐŋ]:



The above diagram provides an explanation for all the three different surface realizations of the underlying /gɐja//mɐ# #ni# / as heard in EH in the following ways: (a) by vowel assimilation to get [gɐja:mɪni:] (b) by applying both vowel assimilation and apocope to obtain [gɐja:mɪŋ] or (c) by applying the rule of dative deletion and the apocope to get [gɐjɐŋ]. While cases (a) and (b) have been observed to operate in EH generally, the derivation invoking dative deletion and apocope is typical of the Kano variety. In WH and other varieties of EH dative deletion does not operate. Moreover no vowel assimilation occurs in WH.

In order to account for the loss of 'i' of the 1st person singular and the loss of dative /mɐ/ we would need the following rules:

4.9.1 Dative apocope rule

(i) $i \rightarrow \emptyset \,/\, [\text{dative particle}] \quad \begin{matrix} n \text{——} \\ [\text{1sg}\ ] \end{matrix}$

(ii) [Dative Particle] $\rightarrow \emptyset \,/$ ——— [1sg]

These rules are optional and the second rule is conditional upon the first rule (i.e. dative particle cannot be deleted unless the vowel deletion also occurs).

It has been observed that when the 3rd person masculine singular /sɐ/ 'him' functions as an indirect object of a sentence the deletion operates as follows:

EH (Kano specific)

/ #gɐja#mɐ//sɐ# /	UR
gɐjamɐs	apocope
[gɐja:mɐs]	SR

Or	/ #gɐja#mɐ#sɐ# /	UR
	gɐjames	apocope
	gɐjamɐr	rhotacization
	[gɐja:mɐr]	SR

The rule operating in the 3rd person masculine singular is not different from the one operating in the 1st person singular. In order therefore to account for the loss of vowels in these pronouns we will formulate a more general rule of the form:

4.9.2 Dative apocope rule (optional).

$$[+\text{syll}] \rightarrow \emptyset \,/\, [\text{dative particle}] \quad [+\text{cons}]\text{—} \begin{Bmatrix} [1\text{sg}] \\ [3\text{msg}] \end{Bmatrix}$$

The above rule states that vowels of the 1sg. and the 3msg. are deleted when preceded by a dative particle.

4.10.0 'Pronominal prefix deletion'

What may be termed 'pronominal prefix deletion' has been observed to operate in a certain grammatical category known as 'the substantive verb' (see 3.19).

It was shown that in certain constructions in all instances where /ke/ occurs in EH there is a corresponding /ʔɐC/ in WH where 'C' acquires all the features of the following segment. Because of the acquisitional behaviour of WH 'C' we may suspect that the 'C' must be one of those segments the occurrence of which is prohibited before any consonant other than a consonant of identical features. Since the WH /ʔɐC/ corresponds to EH /ke/ and /k/ is one of the segments which is not permitted to occur

before any segment other than one which has identical features we would like postulate that at an underlying level the WH 'C' is /k/ and that what happens is that WH loses certain segments. Examples from both dialects are provided for ease of reference:

EH: wa ke dɐ wɐnnɐn 'Who owns this'

WH: wa ʔɐd dɐ wɐŋgɐ " " "

EH	WH	Gloss
ʃi ke sɐɽki	ʃi ʔɐssɐɽki	'It's a king!'
ʃi ke ƙɐɽɐmi	ʃi ʔɐƙƙɐɽɐmi	'It's the smallest...!'
ʃi ke ʔɐboki	ʃi ʔɐʔʔɐboki	'It's a friend!'
ʃi ke jaɽo	ʃi ʔɐjjaɽo	'It's a boy!'
ʃi ke wawa	ʃi ʔɐwwawa	'It's a fool!'

Here we want to draw attention to the fact that any Hausa sentence which surfaces with either /na/ or /ke/ underlyingly contains a pronominal prefix which has a concatenational relation with the particle. The pronominal prefix may optionally be deleted (depending on the dialect concerned). The above examples will therefore be represented underlyingly as follows:

/wa jɐke dɐ/

/si jɐke sɐɽki/

/si jɐke kɐɽɐmi/

/si jɐke ʔɐboki/

/si jɐke jaɽo/

/si jɐke wawa/

Since the pronominal prefix may appear in the surface representation or optionally be deleted we are postulating that in WH it is not

the entire pronominal prefix which is deleted but rather its initial segment and the final vowel of the particle /ke/; so that we will account for the difference by the following rules:

4.10.1 Pronominal prefix deletion (optional in EH).

$$[\text{Pronom. Pref.}] \longrightarrow \emptyset \Big/ \text{\#} \quad \text{ke} \quad \text{\#}$$
$$[\text{subs. Particle}]$$

The above rule asserts that the pronominal prefix is deleted before the substantive particle /ke/. In the case of WH we will provide the derivation of the underlying / #si#jɐ#ke# #wawa# / 'it's a fool!' as follows:

/ #si#jɐ#ke# #wawa# /	UR
ʃi jɐ ke wawa	palatalization
ʃi jɐ k wawa	apocope
ʃi ɐ k wawa	syncope
ʃi ʔɐk wawa	glottal insertion
ʃi ʔɐw wawa	total assimilation
[ʃi:ʔ w:a:wa:]	SR

4.11.0 Degemination rule ?

The occurrence of gemination of segments [1] within lexical items and certain plural forms is characteristic of Hausa in general, but it has been observed that there are very few cases with regard to this

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1. Here we do not consider total assimilation of certain segments to following segments as seen in the FGSE, relative past, intensive verb forms etc. etc., simply because they are at the underlying level not sequences of identical segments but rather sequences of different consonants whose surface identity is brought about either obligatorily or optionally as in the case of certain forms of the intensive verbs.

feature in which the dialects differ, when they do differ, however, it is usually the case that where EH has a single consonant WH has double consonants of the type shown below:

EH	WH	Gloss
ʤaki	ʤɐkki	donkey
k^{w}adɔ	k^{w}ɐ ɗɗo	frog
kuɽutʃɪja	kuɽutʃ tʃɪja	youthfulness
dundunɪja	dundunnɪja	heel
muɽutʃi	muɽutʃ tʃi	shoot of the deleb
ludɐji	luddɐj	ladle
kasuwa	kɐssuwa	market

SING	PLURAL		Gloss
	EH	WH	
zɐwɽe	zɐwɽuka	zɐwɽukka	porch
tsɐwni	tsɐwnuka	tsɐwnukka	mountain
ɽaji	ɽajuka	ɽajukka	life
gɐɽi	gɐɽuɽuka	gɐɽuɽɽuka	town
doki	dɐwaki	dɐwɐkki	horse
mɐsɐllaʧi	mɐsɐllatɐj	mɐsɐllatɐjje	mosque
mɐdubi	mɐdubɐj	mɐdubɐjje	mirror

Although in all other lexical items shared by the dialects a one-to-one correspondence is maintained such that to every sequence of identical consonants in one dialect the sequence exists in the other, we still might prefer to base the underlying forms on the WH forms in view of cases such as those cited at the beginning of the section. However, before we consider the possibility of formulating a rule to account

for those differences we would like to argue that it is not possible to say (as for example, Gregersen has said) that a short vowel plus two consonants became a long vowel plus a single consonant, but that it is rather that two identical consonants became a single consonant (see Gregersen, 1967). And in fact it is simply not true that EH has tense vowels before consonants that are geminated in WH; thus EH zɐwɽuka. This according to Gregersen, should have been *zɐwɽuka. To formulate a rule to account for the differences will certainly pose problems, for the simple reason that there are cases where the same segments exhibit other correspondences. Moreover from a practical point of view a rule would prove difficult to formulate since the segments that undergo degemination do not form any natural class such as could provide a phonological explanation - they are simply a 'rag-bag'.

On the other hand the case of the plural forms may look less severe but is equally problematic in the sense that though a morphologically sensitive rule could be formulated to account for the differences it is not possible in any phonological way to predict what the plural form of a given underlying singular noun would be.[1] Certain singular nouns may have as many as six or more possible plural forms. Consider, for example, the plural forms of /kɐɽe/ 'dog' and /kɐdo/ 'crocodile' as follows:

/kɐɽe/: kɐrnɐw, kɐnnuka, kɐrnuka, kɐrnɐj, kɐrnɐkoki and kɐrnawu.

/kɐdo/: kɐdduna, kɐddɐj, kɐdda, kɐdoʤi, kɐdɐnni, kɐdɐnnu, kɐdɐnduna.

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1. Newman (1972) has formulated certain rules based on the syllable structure and tone pattern of the singular nouns. However, he concedes that, 'Hausa has a number of ways to perform the plural', (op. cit, 313). See also Dihoff (1971) for a rather different analysis.

The only generalization one could provide is to say that in every plural form ending underlyingly in /-ɒjje/ or /-ukka/ we delete one of the consonants to get the EH form. However, in the case of plural forms ending in '-ɒjje' our contraction rule could be employed to account for the differences (see contraction rule 4.8.0).

In addition to the above complexities one observes that there are certain forms of plural where the dialects differ; each dialect having a completely different plural marker, as shown in the following examples:

SINGULAR	PLURAL		Gloss
	EH	WH	
mɛkɛɽɛnta	mɛkɛɽɛntu	mɛkɛɽɛntɪnne	school
tɛkɛrda	tɛkɛrdu	tɛkɛɽdɪnne	paper
bɛrde	bɛrade	bɛɽadɪnne	horseman
mɛʃɛʃʃɛɽa	mɛʃɛʃʃɛɽu		fever
mɛsɛssɛɽa		mɛsɛssɛɽɪnne	fever
gɛΦɛka	gɛhuka		satchel
gɛhᵂɛka		gɛhᵂɛkkɪnne	satchel

In view of the inherent complexities of the Hausa singular: plural relationship we prefer to enter both the singular and plural forms in the lexicon and indicate which plural forms belong to which dialect.

4.12.0 Ablaut rule ?

It will be recalled that WH and EH differ in what the traditional grammarians call the 'copula'. In this grammatical form we find that EH uses 'tʃe' to refer to feminine nouns and 'ne' to masculine nouns, while WH employs 'ta' and 'na' to refer to feminine and masculine forms respectively (see 2.1.25).

An examination of these copulas reveals to us that they are simply GSEs of the type discussed earlier (see 4.5.0); they are here performing a function similar to that of the copulative use of English 'to be'. The dialect difference lies in the vowels only and not in the actual elements marking the gender. Here we are saying that the underlying markers are /t-/ and /n-/ and that the EH [ʧ] can simply be explained by the rule of palatalization. Analyzing these markers in this way makes it look as if we might be required to invoke an ablaut rule to account for the difference. [1] But looking at the language generally an ablaut rule should be rejected on account of the sort of arguments which were raised against formulating a 'contraction' rule to account for [kʼʷɛ r] and [sɐŋ] i.e. it would be both uneconomical and unproductive to treat it in this way. We prefer to enter both forms in the dictionary, so that /tɑ/ and /nɑ/ will be marked 'WH', while /te/ and /ne/ will be marked 'EH'.

The same solution suggests itself when we look at the relative continuous marker /kɐ/. Here while both dialects behave similarly in employing /kɐ/ in the relative past, we find that in the relative continuous the dialects behave differently; EH employs 'ke', while WH employs 'kɐ' so that we may say that the relative marker is always, 'kɐ' in WH but both 'kɐ' and /ke/ in EH.

While there exists a difference in the copulas 'nɑ/ne' and 'tɑ/ʧe' themselves, we also find that a further difference exists when the copula 'nɑ/ne' is attached to the non-feminine 1st and 3rd persons, as shown below:

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1. Klingenheben (1928) suggests that a sound shift is responsible for 'tɑ' changing to 'ʧe'.

EH	WH	Gloss
ni ne	nɪja	it's me
mu ne	muwa	it's us
ʃi ne	ʃɪja	it's him
su ne	suwa	it's them

We will propose two ways for accounting for the WH forms; namely (i) by invoking rules of syncope and epenthesis (ii) by epenthesis alone - we prefer the latter.

To employ the first method we would posit 'na' as the underlying marker so that the underlying forms would be as follows:

WH: /ni#na/
/mu#na/
/si#na/
/su#na/

In order to account for the surface representations under discussion we would simply invoke a syncope rule and delete the initial segment of the copula and then insert a glide epenthetically, so that the derivation of the underlying / #ni# #na# / 'it's me' may proceed as follows:

/ #ni# #na# /	UR
ni a	syncope
nɪja	epenthesis
[nɪja:]	SR

Accounting for the above dialect difference by invoking syncope to delete the initial segments of the copulas should be rejected on

the following grounds:

(i) that it is extremely weak as the underlying forms contradict our previous claim that 'tā/nā' must be marked 'WH' and 'te/ne' EH. If 'nɐ' is already marked 'WH' then it cannot be at the same time the underlying form from which both the dialect forms could be derived.

(ii) that even if the underlying forms were to be correct the question still remains as to why syncope should be invoked at a position as phonologically strong as this just in order to create an environment for epenthesis. Moreover there is no other instance in the language where a glide is inserted after a consonant has been deleted. All instances of epenthesis have been observed to be motivated by a sequence of vowels - one of the vowels being a stem-final vowel and the other a marker of some sort (i.e. a feminine marker or a plural marker).

Though it looks as if 'nā/ne' and 'tā/ʧe' are the only copulas in the language, it is nevertheless necessary to seek for some plausible way to handle this situation. Hence the need for our second approach (i.e. one which employs epenthesis alone).

We are postulating the existence of another copula form, namely /a/. This may be viewed as having operated in Hausa in these pronouns generally at one time but that at a latter stage it ceased to operate in EH. So that WH can be said to have three forms of the copula /tā/, /nā/ and /a/. The usual form /nā/ is suppleted by /a/ in the pronominal environment specified above. Although positing such a copula may seem to be somewhat ad hoc when one examines it carefully one finds out that

it provides the only plausible and natural situation (at least in Hausa) for a glide epenthesis rule. Setting up /a/ as the copula employed with these pronouns we can account for WH surface realizations by the rule of epenthesis (see 4.6.0).

CHAPTER 5

A FINAL EXCURSUS AND CONCLUDING REMARKS

5.1 Introduction: The justification for this brief chapter is:-

(a) that I wish to discuss in a unified way some of the phenomena and analyses presented separately in Chapters 3 and 4.

(b) that it seems to me of interest to consider the mechanisms whereby dialects come to be different, and in order to pursue this end it seems worth picking up again some of the things discussed in earlier chapters.

(c) that I wish to evaluate the achievements of this thesis.

It was claimed in 1.4 that generative dialectology works on the assumption that a single underlying form can be postulated for related dialects, and these dialects differ in some of the phonological rules that apply to the underlying forms. The differences may arise as a consequence of rule loss, rule addition, rule expansion or differential rule ordering. Certain dialects differ from each other in terms of all these things, while others do not (cf. Newton, 1972 and Brown, 1972). The overall claim has been justified by comparing and contrasting EH and WH in which we find that while both dialects behave similarly in the application of the labialization rule (3.6.1), the palatalization rule (3.6.2), the nasal backing rule (3.6.4), the voicing rule (3.6.6), the laxing rule (3.6.11), the nasal assimilation '|n|' rule (3.6.3.1) and the total assimilation rule (3.6.15), a good deal of the variation between EH and WH can be attributed to the effect of the following EH phonological rules: (i) the nasal assimilation rule (3.6.3.2), the hardening rule (3.6.7), the weakening rule (3.6.8), the delabialization rule (3.6.9), the rhotacization rule (3.3.1) and the softening rule

(3.6.16). Moreover, WH has an affricate-palatalization rule (3.6.5) and a certain rule which converts bilabial fricatives into glottal fricatives (3.6.10), which are exclusive to it. We shall now look into these rules to see which types of mechanisms are involved.

5.2 Rule Ordering: Rule order requires that the application of the rules must be ordered differently for each dialect to reach the surface representations of a given underlying form. There appears to be no such case in Hausa. We can illustrate this by presenting derivations of certain feminine forms, where it might appear that a case could be made out for differential rule-ordering. According to the rule-ordering hypothesis we would require two sets of phonological rules as follows: Set 'A' and Set 'B'. Set 'A' would consist of truncation, palatalization, glide epenthesis, raising and masculine marker deletion. Set 'B' would consist of syncope, truncation, glide epenthesis, laxing, total assimilation, masculine marker deletion and palatalization. So that the derivations of the underlying forms |bɐhɐwsɐ+e+a| 'a Hausa woman' and |bʊga##bʊga+e+a| 'a woman drunkard' may proceed as follows:

A. EH:

|bɐhɐwsa+e+a|	UR
bɐhɐws-e-a	truncation
bɐhɐwʃe-a	palatalization
bɐhɐwʃeja	glide-epenthesis
bɐhɐwʃɪja	raising
————	masculine marker deletion
[bɐhɐwʃɪja:]	SR

WH:

|bɐhɐwsa+e+a|	UR
bɐhɐwsa-a	masculine marker deletion

————	palatalization
————	glide-epenthesis
————	raising
bɐhɐwsa	truncation
[bɐhɐwsa:]	SR

B. EH:

|bʊga##bʊga+e+a|	UR
bʊgabga-e-a	syncope
bʊgabge-a	truncation
bʊgabgeja	glide-epenthesis
bʊgɐbgeja	laxing
bʊgɐbgɪja	raising
bʊgɐggɪja	total assimilation
————	masculine marker deletion
bʊgɐgg^{j}ɪja	palatalization
[bʊgɐg:^{j}ɪja:]	SR

WH:

|bʊga##bɐga+e+a|	UR
bʊgabga-e-a	syncope
bʊgabga-a	masculine marker deletion
————	glide-epenthesis
bʊgɐbga-a	laxing
————	raising
bʊgɐgga-a	total assimilation
bʊgɐgga	truncation
————	palatalization
[bʊgɐg:a:]	SR

In the first derivation we find that EH employs four rules, namely (i) truncation (ii) palatalization (iii) glide-epenthesis and (iv) raising. WH employs two rules, namely masculine gender deletion and truncation. Since there are certain rules which do not operate in one of the dialects, as for example, rules 2,3 and 4 in the first derivation in WH we conclude that the question here is not one of differential rule ordering but rather of which rules apply to a given dialect.

5.3 Rule loss: When a rule fails to operate when the condition necessary for its application is met the rule is said to be lost. Two explanations are possible here (i) either the rule was introduced at a more recent stage of the language and has failed as yet to penetrate throughout the language or (ii) that the rule existed in the proto-language generally as an automatic rule but at a later stage it has ceased to be so. The only instance of such a process in Hausa consists in the non-automatic palatalization rule (4.2.1), which operates in certain morphological contexts. Here, while alveolar coronals do not become palatalized before palatal vowels in cognate forms, when they undergo derivational changes they do become palatalized.

5.4 Rule addition: A rule is said to be added when such a rule operates only in one dialect. One result of this innovated rule might be a simplification and generalization in the grammar; although this is not necessarily always so. This can be seen in the case of the EH rhotacization rule, which, for example, converts the causative marker|s| into [r], or in the case of the weakening rule, which accounts for |m| surfacing as [w] and the softening rule, which converts the feminine marker |t| to [r,s ...], which are all added rules. Though these rules appear to be dialect specific, i.e. they are peculiar to EH alone a comparative study of related Chadic languages reveals that syllable-

final weakenings tend to be rather characteristic features of Chadic languages. The hypothesis claims that velars and labials in the reconstructed pre-Hausa became [w] syllable-finally, while the alveolars of pre-Hausa became [r]. Consider, for example, Klingenheben, 1928), which Schuh (1972: 390-391) summarizes as follows:

*P > w/ - $

*T > r/ - $

*K > w/ - $

In our synchronic but pan-dialectal analysis none of the above starred forms which are reconstructed forms would be inputs to any of our rules. Consider EH [sɐwɽaji:] vs. WH [sɐmɽɐji:] and the metathesized form [sɐɽmɐji:] 'youth' all with the plural form [sɐma:ɽi:]. In this case there is only one plausible way to account for this variation; this is by setting up /sɐmɽɐji/ as the underlying form, since it can account for both |m| → [w] and |mɽ| → [ɽm]. So that |m| becoming [w] is something synchronic. Consider also our feminine marker |t|, which is realized as [t] in all the dialects in a certain context and in other contexts as [r],[s],[l],[j] or else as involving a total assimilation to a following consonant. In this situation setting up any segment from among these surface ones other than the |t| as the underlying marker is not going to be tolerated for a number of reasons, e.g. firstly it would violate our statement of constraint on the underlying form which states that the underlying form posited must appear in one of the dialects (see Chapter 1); secondly the total assimilation behaviour observed cannot adequately be explained, since the other segments are not subject to any surface phonotactic constraint which would cause them to assimilate totally to following consonants (since we can have the sequences [r]CV, [s]CV,

[l]CV, [j]CV).[1]

The EH delabialization rule is also an added rule, which in diachronic terms can be interpreted simply as a case of phonemic merger. The WH affricate-palatalization rule and the rule which converts bilabial fricatives into glottal fricatives are added rules as well.

So far we have discussed the mechanisms responsible for dialect variation. Of these, only one mechanism has been observed to be of no relevance to the study of Hausa variation i.e. differential rule ordering. It is also observed that all the rules we have referred to are genuinely synchronic rules. In the next section we shall discuss rule expansion under the heading "Unitary stage rules", which though synchronic may also be assumed to be diachronic.

5.5 Unitary stage rules: These are rules which have been assumed to operate throughout the language in some specific context at one stage and at a later stage when the language split into dialects the application of these rules were widened by rule simplification in one or other of the dialects, while in another dialect the rules survived unchanged. In talking about 'Unitary stage' rules we are not being strictly synchronic, but rather diachronic. The EH nasal assimilation is a case of this. It will be recalled that |n| assimilates to a following consonant (3.6.3.1). This rule is general since it operates in both dialects. The EH nasal assimilation states that all nasals become homorganic to following consonants. Here the rule has been expanded to cover both |m| and |n| thus minimizing the number of features required in the input. This type

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1. The appearance of |t| as a feminine marker accords well with the situation in most of the Afro-Asiatic languages. So that our alveolar |t| becoming [r] can be explained synchronically. This, however, does not discredit a historical type of approach to language study, but rather is harmonious with it.

of thing can further be exemplified in the rules seen to operate in what the traditional grammarians call 'the relative past'.

We have shown in Chapter 2 that WH and EH differ in the way each expresses the relative past. While both dialects behave in almost the same way in the general (i.e. non-relative) past by:

(a) suffixing a marker 'n' to both the plural pronominal persons and the impersonal pronoun e.g. |mʊn tɐΦi| 'we went'; |ʔɐn tɐΦi| 'someone went'.

(b) having a tense (long) low vowel at the end of the other pronominal persons (except in the case of 2nd person feminine which ends in |e| in WH and ends in |ɪ| in EH) e.g.

|na tɐΦi| 'I went'
|ka tɐΦi| 'you (masc. sing) went'
|ta tɐΦi| 'She went'
|ja tɐΦi| 'he went'

Cf.	EH	WH	
	kɪn tɐΦi	ke tɐhi	'you (fem) went'

we find that in the relative past the case is rather different. WH may be said to retain the past-tense marker |-n| plus a relative marker |kɐ| in the pronominal plural persons and impersonal pronoun, while in EH the past tense marker |-n| is absent.

In the singular persons WH prolongs the consonant of the verb immediately following the person pronoun; thus an underlying |#CVC$_2$ ##C$_3$V ... #| becomes C$_1$VC$_3$C$_3$V; that is, the consonant numbered C$_2$ assumes all the features of the following consonant numbered C$_3$; while in EH all that happens is that the final vowel of the pronoun is reduced to |ɐ| (of course in WH the vowel is also reduced by the laxing rule).

The above information can be exemplified as follows:

	General past		Gloss
EH:	UR	SR	
	|#na#n##kama#|	[na:ka:ma:]	I caught
	|#ke#n##kama#|	[k^{j}ɪŋka:ma:]	You (fem) caught
	|#mu#n##kama#|	[mʊŋka:ma:]	We caught
Cf. WH:	|#ke#n##kama#|	[k^{j}e:ka:ma:]	You (fem) caught

Relative past

EH:	UR	SR
	|#dɐ##na#n#kɐ##kama#|	[dɐnɐka:ma:]
	|#dɐ##mu#n#kɐ##kama#|	[dɐmʊkɐka:ma:]

WH:	UR	SR
	|#dɐ##na#n#kɐ##kama#|	[dɐnɪk:a:ma:]~[1][dɐnɐk:a:ma:]
	|#dɐ##mu#n#kɐ##kama#|	[dɐmʊŋkɐka:ma:]

meaning 'when I caught ... ' and 'when we caught' respectively.

In these data |-n| and |kɐ| are past and relative morphemes respectively. And in order to account for the dialect differences which show up in these verb forms we need the following rules:

*Unitary stage Rule 1

$$|ɐ| \rightarrow \emptyset / \begin{bmatrix}\text{sing. pers.}\\ \text{-2nd fem.}\end{bmatrix} \text{ n\#k - \#}$$

*Unitary stage Rule 2

$$|n| \rightarrow \emptyset' / \begin{bmatrix}\text{sing. pers.}\\ \text{-2nd fem.}\end{bmatrix} -$$

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1. The employment of [nɪ] does not appear to be explicable in any phonological way for there seems to be no phonetic motivation for changing |a| to [ɪ].

EH. Rule 1

$$|ɐ| \rightarrow \emptyset \Big/ \begin{bmatrix} \text{sing. pers.} \\ \text{-2nd fem.} \end{bmatrix} \text{ n\#k - \#}$$

EH. Rule 2

$$|n| \rightarrow \emptyset \Big/ \left\{ \begin{bmatrix} \text{sing. pers.} \\ \text{-2nd fem.} \end{bmatrix} \right\} \text{ - <kɐ>}$$

EH. Rule 3

$$|k| \rightarrow \emptyset \Big/ \begin{bmatrix} \text{sing. pers.} \\ \text{-2nd fem.} \end{bmatrix} \text{ -}$$

WH. Rule 1

$$|ɐ| \rightarrow \emptyset \Big/ \text{ [sing. pers.] n\#k - \#}$$

WH. Rule 2

$$|n| \rightarrow \emptyset \Big/ \text{ - [sing. pers.]}$$

WH. Rule 3

$$|k| \rightarrow \begin{matrix} \text{C} \\ [\alpha\text{F}] \end{matrix} \Big/ \text{ - } \begin{matrix} \text{C} \\ [\alpha\text{F}] \end{matrix}$$

Rules 1 and 2 are Unitary stage rules. As mentioned earlier these rules are not strictly synchronic but rather diachronic. Rule 1 asserts that a low vowel |ɐ| is deleted immediately after all singular persons (except the 2nd feminine), when followed by |n| and |k| finally. Rule 2 states that |n| is deleted after all singular persons (except the 2nd feminine).

The application of these rules can be said to be widened by rule simplification in WH, while they survived intact to the present day in EH except in the case of the second rule which has been expanded.

EH Rule 1 is similar to the Unitary stage rule 1 which deletes |ɐ| immediately after all singular persons (except the 2nd feminine). EH Rule 2 has two expansions the first expansion is identical to the Unitary stage rule 2, while the second expansion deletes |n| after second person feminine, person plural and impersonal before |kɐ|.

WH Rule 1 is an extension of unitary stage rule 1. While unitary stage rule 1 does not operate in 2nd fem., WH rule 1 extends its application to all singular persons (i.e. including the 2nd feminine). WH rule 2 is also an extension of unitary stage rule 2. Here the rule deletes |n| before singular persons. WH rule 3 may be said to be an innovatory dialect-specific rule. The rule asserts that |k| takes all the features of the following consonant. This rule accords very well with the MSC of the language (see 3.5.15).

In order to give a clear view of how these rules (along with some other rules) operate in each dialect we provide the following derivations

RELATIVE PAST

	1s.	3ms.	3fs.	2ms.	2fs.	1pl.	3pl.	2pl.	Imp.
UR	|na#n#kɐ|	|ja#n#kɐ|	|ta#n#kɐ|	|ka#n#kɐ|	|ke#n#kɐ|	|mu#n#kɐ|	|su#n#kɐ|	|ku#n#kɐ|	|ʔa#n#kɐ|
EH. Rule 1	nank	jank	tank	kank	–	–	–	–	–
laxing	nɐnk	jɐnk	tɐnk	kɐnk	kɛnkɐ	mʊnkɐ	sʊnkɐ	kʊnkɐ	ʔɐnkɐ
EH. Rule 2	nɐk	jɐk	tɐk	kɐk	kɛkɐ	mʊkɐ	sʊkɐ	kʊkɐ	ʔɐkɐ
EH. Rule 3	nɐ	jɐ	tɐ	kɐ	–	–	–	–	–
Raising	–	–	–	–	kɪkɐ	–	–	–	–
Palatalization	–	–	–	–	k^{j}ɪkɐ	–	–	–	–
labialization	–	–	–	–	–	–	–	k^{w}ʊkɐ	–
SR	[nɐ]	[jɐ]	[tɐ]	[kɐ]	[k^{j}ɪkɐ]	[mʊkɐ]	[sʊkɐ]	[k^{w}ʊkɐ]	[ʔɐkɐ]

GENERAL PAST

UR	|na#n|	|ja#n|	|ta#n|	|ka#n|	|ke#n|	|mu#n|	|su#n|	|ku#n|	|ʔa#n|
EH. Rule 1	na	ja	ta	ka	–	–	–	–	–
Laxing	–	–	–	–	kɛn	mʊn	sʊn	kʊn	ʔɐn
Raising	–	–	–	–	kɪn	–	–	–	–
Palatalization	–	–	–	–	k^{j}ɪn	–	–	–	–

GENERAL PAST contd

Labialization	-	-	-	-	-	-	-	k^{W}ʊn	-
Nasal backing	-	-	-	-	k^{j}ɪŋ	mʊŋ	sʊŋ	k^{W}ʊŋ	ʔɐŋ
SR	[na:]	[ja:]	[ta:]	[ka:]	[k^{j}ɪŋ]	[mʊŋ]	[sʊŋ]	[k^{W}ʊŋ]	[ʔɐŋ]

RELATIVE PAST

	1s.	3ms.	3fs.	2ms.	2fs.	1pl.	3pl.	2pl.	Imp.
UR	|na#n#kɐ|	|ja#n#kɐ|	|ta#n#kɐ|	|ka#n#kɐ|	|ke#n#kɐ|	|mu#n#kɐ|	|su#n#kɐ|	|ku#n#kɐ|	|ʔa#n#kɐ|
WH. Rule 1	nank	jank	tank	kank	kenk	-	-	-	-
WH. Rule 2	nak	jak	tak	kak	kek	-	-	-	-
Laxing	nɐk	jɐk	tɐk	kɐk	kɛk	mʊnkɐ	sʊnkɐ	kʊnkɐ	ʔɐnkɐ
Raising	-	-	-	-	kɪk	-	-	-	-
Palatalization	-	-	-	-	k^{j}ɪk	-	-	-	-
labialization	-	-	-	-	-	-	-	k^{W}ʊnkɐ	-
Nasal assimilation	-	-	-	-	-	mʊŋkɐ	sʊŋkɐ	k^{W}ʊŋkɐ	ʔɐŋkɐ
WH. Rule 3	nɐC	jɐC	tɐC	kɐC	k^{j}ɪC	-	-	-	-
SR	[nɐ]C	[jɐ]C	[tɐ]C	[kɐ]C	[k^{j}ɪ]C	[mʊŋkɐ]	[sʊŋkɐ]	[k^{W}ʊŋkɐ]	[ʔɐŋkɐ]

GENERAL PAST

UR	|na#n|	|ja#n|	|ta#n|	|ka#n|	|ke#n|	|mu#n|	|su#n|	|ku#n|	|ʔa#n|
WH. Rule 1	–	–	–	–	–	–	–	–	–
WH. Rule 2	na	ja	ta	ka	ke	–	–	–	–
Laxing	–	–	–	–	–	mʊn	sʊn	kʊn	ʔɛn
Palatalization	–	–	–	–	$k^{j}e$	–	–	–	–
labialization	–	–	–	–	–	–	–	$k^{w}ʊn$	–
Nasal backing	–	–	–	–	–	mʊŋ	sʊŋ	$k^{w}ʊŋ$	ʔɛŋ
SR	[na:]	[ja:]	[ta:]	[ka:]	[k^{j}e:]	[mʊŋ]	[sʊŋ]	[k^{w}ʊŋ]	[ʔɛŋ]

5.6 Concluding remarks: So far we have discussed in a unified way various phonological rules operating in both dialects with regard to the types of mechanisms involved in dialect differentiation. We shall now evaluate the achievements of this thesis. These successes can be seen in the following ways:

(i) that on a principled basis the Hausa language (as spoken in Nigeria) has been classified into two major dialects. These divisions are based on phonological and morphological isoglosses. A lexicostatistic analysis is also adduced as support for this classification.

(ii) that it interprets the dialect variation between EH and WH within the framework of generative phonology as originally proposed in SPE, though here with some modifications. The dialect variation is interpreted in terms of various generative rules - certain rules apply generally, while others are simply dialect specific.

(iii) that an attempt has been made to place a constraint on the level of abstractness of phonological representation (see Chapter 1) and to draw a line between what is synchronic and what is not. The constraint states that the underlying segment must appear in at least one of the dialects. Although the underlying forms are abstract they are nevertheless generally closer to WH. However, this does not mean that WH has retained all the pre-Hausa forms.

(iv) that there seems to be some agreement between our synchronic analysis and an independently established diachronic analysis of certain segments, as for example, the feminine marker |t| becoming [r] (see 3.6.16), |s,d ... | becoming [r] (see 4.5.2) or |m| becoming [w]. All these, according to comparative linguists, are developments which were historical, while in our analysis they are shown to be genuinely synchronic (cf. Klingenheben, 1928). This therefore satisfies us that generative dialectology, while synchronic in approach, may legitimately be a reflection of "historical

changes acting on an originally uniform language' (Newton, 1972:1).

(v) that we are convinced that rule addition, rule simplification and rule loss are the prime agents in our dialect variation.

While these are the successes which have so far been achieved, the investigator has not been able to find any regular system operating with regard to vowel differences between these dialects and hopes that future researchers may take this up. Neither syntactic differences nor tonal differences have been discussed in this thesis because they are considered to be topics extensive enough to be for other independent theses, if they are to be handled adequately. Some syntactic differences have been noted however and presented in appendix B.

The irregular correspondences of certain lexical items which might be etymologically-related, but which can no longer be related by means of synchronically generative rules (probably because they are the result of extensive parallel borrowing from related languages or borrowing across dialects) all have to appear in the lexicon. So that such words could only be related by statements of lexical correspondences, not by means of generative rule (cf. Chomsky, 1970; Venneman, 1972e).

APPENDIX A

The unsystematic nature of vowel correspondences between Hausa dialects

The general practice in Hausa has been to recognize five vowels, namely, i,e,a,o,u. Each of these vowels can be either short or long; which brings the number of the vowels to ten. This practice was rejected in favour of an analysis which sets up an eight vowel system. The argument for this analysis was fully discussed in Chapter 3. In that same chapter the general practice of analyzing each Hausa diphthong as a 'vowel-plus-vowel' was also rejected in favour of a new analysis, which interprets each diphthong as a 'vowel-plus-glide', i.e. as |ɐj|, |ɐw|, |ʊj|.

Unlike the consonantal phonemes, the Hausa vowels show little (if any) dialect variation. What might be considered to be a major dialect variation is found only in a few lexical items. The following list of words may exemplify our point:

EH		WH		Gloss
[le:mo:]	lemo	[le:mu:]	lemu	arrange
[mɪl:a:]	milla	[mʊl:a:]	mulla	travel a long way
[ru:ʃe:]	rushe	[ro:ʃe:]	roshe	demolish
[ʃɐkʲ'i:kʲ'i:][1]	shakiki	[ʃɪkʲ'i:kʲ'i:]	shĭikiki	full-brother
[tɪnkʲɪja:]	tinkiya	[tʊnkʲIja:]	tunkiya	ewe
[tɪrkʲe:]	tirke	[tʊrkʲe:]	turke	a tethering-post or peg
[ts'ɪŋka:]	tsinka	[ts'ʊŋkʲe:]	tsunke	break, cut off, pluck
[wa:to:]	wato	[wa:tɐw]	watau	then, so
[zɐrbe:][2]	zarbe	[zɐlbi:]	zalbi	grey-heron

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1. An Arabic loan.
2. [zɐlbe:] is heard in Zariya; [dzɐlbe:] in some areas in Bauchi.

EH		WH		Gloss
[bɪʃɪja:]	bishiya	[bʊʃɪja:]	bushiya	a tree
[da:mɪna:]	damina	[da:mɐna:]	dam na	wet season
[ʔɪwa:]	iwa	[ʔɐwa:]	awa	like, as if
[ʔɐbu:ja:][1]	abuya	[ʔɐbɪja:]	abiya	girl-friend
[ʔɐda:ʃe:]	adashe	[ʔɐda:ʃi:]	adashi	
[ʔʊng^{w}ʊlu:][2]	ungulu	[ʔɐg^{w}ʊlu:]	agulu	vulture
[ʔɐdze:]	aje	[ʔIdze:][3]	ije	to place
[ʔɐmɸa:ni:]	amfani	[ʔʊnh^{w}a:ni:]	unhwani	usefulness
[tʃɪnje:]	cinye	[tʃɐnje:]	canye	ate up
[ɗɪnja:]	ɗinya	[ɗʊnja:]	ɗunya	a type of tree (or fruit)
[dɪnja:]	dinya	[dʊnja:]	dunya	goose
[ɗɪnk^{j}i:]	ɗinki	[ɗʊnk^{j}i:]	ɗunki	sewing
[dInts'a:]	dintsa	[dʊnts'a:]	duntsa	take a handful
[dʊlmʊja:]	dulmuya	[dʊlmɪja:]	dulmiya	sink
[g^{w}o:rʊba:]	goruba	[g^{w}o:ɾɪba:]	goriba	dum-palm
[hɐdɪɾi:]	hadiri	[hɐdɐɾi:]	hadari	clouds
[dza:dzɪbe:ɾe:]	jajibere	[dza:dzɪbɪɾi:]	jajibiri	sallah eve
[dze:ma:g^{j}e:]	jemage	[dza:ma:g^{j}e:][4]	jamage	bat
[dzu:dzi:]	juji	[dzɪbdzi:]	jibji	rubbish-heap
[dzʊhʊrma:]	juhurma	[dzɪhɪlma:]	jihilma	a type of bird of prey
[k^{w}o:kɐwa:]	kokawa	[k^{w}o:k^{w}ʊwa:]	kokuwa	wrestling
[k^{w}o:me:]	kome	[k^{w}omi:]	komi	everything
[me:]	me	[mi:]	mi	what
[k^{w}ɐɾi:]	kwari	[k^{w}ɐɾe:]	kware	valley
[k$^{w'}$u:l mi:]	kulumi	[k$^{w'}$u:l mi:]	kulami	stingy
[ʔa:dɐltʃi:]	adalci	[ʔa:dɪltʃi:][5]	adilci	justice

1. [ʔɐbo:k^{j}ɪja:] is commonly heard in EH, while in WH [ʔɐbʊk:^{j}ɪja:] is more common. The forms cited above seem older.
2. Zariya and Bauchi pronounce it with [ʔɐ] initially.
3. Zariya pronounces it similarly.
4. Hadejiya pronounces it in the same way.
5. An Arabic loan.

The vowels do not show any systematic correspondences by means of which we can relate them to common underlying forms. In this kind of situation there is no way to formulate any rule in order to derive one form from the other or both from a common underlying form and this necessitates the entry of both forms in the dictionary.

APPENDIX B

Syntactic differences.

The only syntactic differences known to the investigator appear in the following cases:

(a) Negative sentences involving the copulas ne/na and ce/ta.

(b) Sentences containing indirect objects.

(c) The use of copy pronouns in imperative and general past sentenses.

(d) Sentences containing the adverbial constituent element.

(a) The Negative Sentence: In constructing a negative sentence, whether it involves the copulas (ne/na, ce/ta) or not, two occurrences of the negative marker ba are required. In the case of negative copula sentences, however, the syntagmatic arrangement of these markers is entirely dialectal, which is, of course, the concern of this analysis. In EH the syntax of negative sentences is everywhere the same, while in WH there are some variations. For example, the way negative sentences are formed in the Katsina variety of Hausa differs sharply from the way they are formed in the Sakkwato variety of Hausa.

Examples:

EH: ba yaro ba ne

not boy not is

'It is not a boy'

WH (S) :

ba yaro na ba

not boy is not

'It is not a boy'

WH(Kt):

ba yaro ba ne ba

not boy not is not

'It is not a boy'

(b) Sentences with indirect objects.

We saw in chapter four (4.15.0) that the use of the particle 'ma' (traditionally known as dative 'ma') with a pronoun object is typical of Kano Hausa. The structure of a sentence containing an indirect object is generally the same except in the variety of Bauchi Hausa which differs from all other dialects. Consider, for example, the following:

Other varieties of Hausa:

Ahmad ya saya wa Kabir keke

Ahmad he bought for Kabir bicycle

'Ahamd bought Kabir a bicycle'

Bauchi variety:

Ahmad ya sayi keke ma Kabir

Ahmad he bought bicycle for Kabir

'Ahmad bought Kabir a bicycle'

(c) The use of a pronoun copy in the imperative and general past sentences:

One of the characteristic features of some varieties of EH is the way a subject pronoun is copied in imperative and general past sentences. This feature is peculiar to Kano-village Hausa and to Hadejiya and Katagum in Bauchi. An imperative sentence in these areas is formed by introducing a subject pronoun in initial position which is copied immediately after the verb. For example, ka zo ka '(you) come' (literally, 'you come you'). In other varieites of Hausa an imperative sentence is formed with an optional subject pronoun in the initial position. The pronoun is never copied, for example, (ka) zo '(you) come'.

In the case of past tense sentences pronoun-copy operates but not in an identical way as in the case with imperative sentences. Here the subject pronoun is in the initial position, while the object pronoun follows the verb, for example, ya hau shi 'he rode', na je ni 'I went'.

Newman (1972) made an interesting discovery about this feature in a comparative study of Hausa and Kanakuru in which He claims that pronoun copy is a feature of Chadic languages. He goes on to say that 'where intransitive verbs are marked by a proniminal suffix on the verb which matches the person, the gender, and number of the subject. This suffix, which is called the 'intransitive copy pronoun' (abbreviated ICP) occurs in all persons and is used in a variety of tenses', (Newman, 1972:7). This led the author to assume that 'in early Hausa language history, the use of ICP suffixes must have been more wide spread than it is now and was not just limited to these specific command forms', (loc. cit. p.7). E.B. Nadah (by personal Communication) confirms to me that the feature is also present in his language, Kwa-bwarei, which is also a member of the Chadic group of languages.

(d) The Adverbial constituent element.

Galadanci (1969) classifies adverbs into five major types as follows: (i) Simple adverb (ii) Adverbial compound (iii) Adverbial complex (iv) Adverbial Cluster and (v) Adverbial phrase. We are particularly concerned with only one type of adverb that which is referred to as the adverbial complex. Galadanci observes that the adverbial complex consists of a particle (a 'at', daga 'from', ta 'via', da 'with, at, in' or i, ya 'like') which occurs together with a nominal or other adverbial form. This class of adverb can further be divided into five main types based on their internal structure and syntactic behaviour. The types are referred to as types (a), (b), (c), (d) and (e). Again we are only going to look into the adverbial complex type (a) as it is in this type that dialect variation exists.

The adverbial complex type (a) consists of a locative particle a 'at, in' followed by any of the following: (i) a non-dynamic noun (ii) a pronoun (iii) a simple adverb (iv) an adverbial compound (v) an adverbial cluster. Or an NP having one of these as its Head. Here are a few examples of adverbial complex type (a) (all examples from Galadanci).

a gida	'at home'
a ita	'in it (fem)'
a tsaye	'standing up'
a cikin gida	'inside the house'
a gobe da safe	'tomorrow in the morning'

While we agree that what Galadanci refers to as 'Adverbial complex type (a)' is operative in EH, in WH (at least in Sakkwato) this class

of adverbial does not occur. In its place, WH employs a different category of adverb, for example, a simple adverb. In short, in all instances of an adverbial complex type (a), in EH, WH deletes what Galadanci calls the 'locative particle'. Consider the following examples:

EH: Musa ya gan shi a gida
'Moses saw him at home'

Musa ya gan shi a tsaye
'Moses saw him standing'

Musa ya gan shi a cikin ɗaki
'Moses saw him in a room'

a gobe da safe muke so
'we want it tomorrow in the morning'

WH: Musa ya gane shi gida
'Moses saw him at home'

Musa ya gane shi tsaye
'Moses saw him standing'

Musa ya gane shi cikin ɗaki
'Moses saw him in a room'

gobe da swahe muka so
'we want it tomorrow in the morning'

C_1 Notes on word lists.

The aim this section is to provide some explanations for certain lexical items which appear to be unique in the sense of being characteristic of a certain variety or in having more than one meaning.

Item 3. [bɪsa:] 'animal' is only used in the Sakkwato area (although it is also found in Niger). The remaining varieties have [dɽb:a:] instead. This may be a case of lexical diffusion, for while all the other varieties lost the native word for 'animal', Sakkwato retained it. The word [dɽb:a:] is an Arabic loan. [1]

Item 4. [to:ka:] 'ashes' is seldom used in Sakkwato with this meaning; instead [hɽbɗi:] is used meaning 'ashes'. [to:ka:] in Sakkwato means 'soap'. So that what in the remaining varieties people would call 'ashes' a Sakkwato man would call 'soap'. In these other areas [sa:bulu:] is used to refer to the Sakkwato [to:ka:] 'soap'. Here again we find that [sa:bulu:] is an Arabic loan.

Item 8 [k^{w}ɛʔ ɽɗe:] 'bark (of a tree)' was given by a Daura informant as an equivalent for [ɓa:wo:] or [ɓa:wa:]. This may mean that either the word [ɓa:wo:] is disappearing or is in free-variation in Duara for the informant knew both words. It is likely that the word [k^{w}ɛʔ ɽɗe:] is an archaic word. In Katsina the same word is pronounced with [o:] thus [k^{w}ɛʔ ɽɗo:] rather than with [e:] as it is in the case of Daura. On the other hand in both Sakkwato and Katsina the word [k^{w}ɛʔ ɽɗe:] which means 'bark' (of a tree)' in Daura, means 'to peel' or 'strip off bark'.

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1. Neither Bargery nor Abraham indicate this fact in their dictionaries.

Item 14. [bɐkʲ'i:] means 'black' (both as an adjective and as a noun) in all varieties, while in Sakkwato it functions only as a noun, the adjective being [bɐb:ɐkʷ'ʊ:] as in /bɐbbɐkʊm mʊtum ja zɐka gɪda nɐj/ meaning 'a black man came to his house'.

Item 19. [to:ja:]means 'burn' (both in transitive and intransitive uses) in Sakkwato and Katsina, while in other varieties [to:ja:]is only used when the object of the action is one of the following: oil, cakes, earthenware, bricks or pots (unless it is used in a figurative sense). [kʷo:na:] 'burn' does not exist in either the Sakkwato or Katsina varieties.

Item 21. [dʒɪdo:] 'cloud' was given by a Zariya informant, while in most other areas they have [ga:dʒɪma:ɾe:]. In Katsina, however, it is similar to the Zariya form though pronounced with a vowel [a:] in final position. [ga:dʒɪma:ɾe:] too is known to Zariya speakers.

Item 27. [mʊtu:] means 'die'. It is used in all dialects synonymously with [ɾɐsu:]. Except that in Sakkwato [mʊtu:] is restricted in its use to refer to the death of animals, plants, but rarely to people unless of low status, in particular non-Muslims. To show respect in the case of a person's death[ɾ su:] is used. Generally, in all the varieties the death of a pious person, saint or prophet is referred to as [k'ɐ wɾa:] meaning 'migration' or [ɸɐkʷu:] meaning 'hide'.

Item 28 [hɐk'a:] 'dig' and [gʲɪna:] [1] 'build' are observed to be synonymous in Kano, but in Sakkwato they are synonymous only when the object of the verb is[ɾa:mi:] 'hole'. Consider, for example, the

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1. The investigator observes that [gʲɪna:] is less commonly used in Kano town and suspects that those who use the word might be influenced by the native speakers of W.H. Bargery (1934) indicates that the word [hɐk'a:] is an Arabic loan. He, however, neither says what it means in Arabic nor does he provide the proper Arabic form.

following:

Musa ya haƙa rami
Moses he dug hole
'Moses dug a hole'

OR

Musa ya gina rami
Moses he built hole
'Moses dug a hole'

In Bauchi, Daura and Zariya [hɐk'a:] is exclusively used to refer to the action of digging a hole, while [gʲɪna:] to building e.g. construction of a house, as shown in the following example:

Musa ya gina gida
Moses he built house
'Moses built a house'

But in none of the varieties can [hɐk'a:] be used in the above sense.

Item 39. [ʔɪdo:] presents variation in form and meaning. In all the varieties except in Sakkwato the word [ʔɪdo:] means 'an eye' and its plural idanu 'eyes'. In Sakkwato the case is rather different; [ʔɪdo:] means 'eyes', while [ʔɪdʒɪja:] means 'an eye'.

Item 85. [gɐɲje:] 'leaf of a tree' is known in the majority of varieties, while in Sakkwato a compound word is used thus [kʷʊn:ɛŋ ʔɪʧe:] (lit. ear of a tree).

Item 137. [kʷa:na:] means 'to pass the night' in all varieties of Hausa, while in the Sakkwato variety means 'to sleep', as in the following examples:

Sakkwato variety:

(a) Musa shina kwana
Moses he is sleeping
'Moses is sleeping'

(b) Musa ya kwana biyat
Moses he passed the night five
'Moses spent five nights/days'

Other varieties:

(a) Musa yana barci[1]
Moses he is sleeping
'Moses is sleeping'

(b) Musa ya kwana biyar
Moses he passed the night five
'Moses spent five nights/days'

Item 173. [bɪɽkʲɪta:] was given by a Sakkwato informant as an equivalent for [dʒu:ja:] . The informant seemed rather confused by the number of synonyms the word has, among which are the following: dagula, hargitsa, yamutsa.

Item 267 [ba:wa:] 'slave' is the commonest form and is understood by every native Hausa speaker. In Kano, Katsina and Bauchi [bɛɽu'ndʒe:] is synonymous with [ba:wa:], while in the remaining varieties it means 'butcher'. [ba:wa:] is more frequently used in Kano, Bauchi and Katsina than [bɛɽu'ndʒe:].

It has been observed that there are some words which are invariably used in all the varieties though my informants preferred one form to the other, the basis of such choice was not investigated. For example, [ɗɛmbɪda:]or [ɗɛ̃m:ɛgʷʊɽdʒi:] 'rod for ginning cotton'. [ɸa:tuma:] or [hɛɓɛɽkɛda:] 'a type of cap', [sɛɲji:] or [ɗa:ɽi:] 'cold' (although [sɛɲji:] is usually associated with the cool wind of the rainy season and [ɗa:ɽi:] with 'harmattan'). In Kano, Bauchi and Zariya [huntu:ɽu:] is synonymous with [ɗa:ɽi:]. This word was not familiar to my Katsina and Sakkwato informants.

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1. The present investigator has a feeling that the word is a compound one made up of bari 'to stop' and ci 'eating'.

Item 294 [ta:g^{j}ɪja:] was given by a Daura informant as an equivalent to [hu:la:] meaning 'hat, cap' but when he was told that the word was borrowed from Arabic he hardly believed it.

Item 323. [kɐɾa:] means 'cornstalk', and like [ʔɪdo:](item 39), presents variation in form. In Sakkwato [kɐɾa:] is the plural form of[kɐɾe:], while in the remaining varieties [k ɾa:] is the singular form of karare.

Item 290 [h^{w}ɐjh^{w}ɐj] in Sakkwato and Katsina and (remarkably) also in Daura refers to any large circular tray made from kaba fronds or grass and used for seperating coarse flour from fine or for covering vessels, while in the other varieties a [ɸɐjɸɐj] is mainly used only for covering vessels, while a [m t ŋk di:] is used for seperating coarse flour from fine.

Item 318. [ma:sa :], in Sakkwato, Katsina and Bauchi, means what in Kano, Daura and Zariya is known as [wɐjna:]'cake'; [ma: ʃe:] is also used with the same meaning. In Bauchi [wɐjna:] refers to fried egg or cakes made from rice flour mixed with eggs.

Our Sakkwato informant gave us [bilha:zɪja:] (item 335) as a native word meaning 'bilharzia', while in other varieties we have [t͡sʼɐg^{j}ɪja:].

Item 362. [g^{w}u:tsu:] means 'under, beneath', in Sakkwato but in other varieites it is a tabooed-word meaning 'female genital organ'. [1]

Item 158. [dʒe:la:] means 'tail'. This word is more commonly used in Kano than in any other variety of Hausa though familiar to all Hausa

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1. [gɐto:]has the same meaning as [g^{w}u:tsʼu:].

speakers, in other varieties [wʊt͡ʃ'ɪja:] is preferred. In Kano [wʊt͡ʃ'ɪja:] is a tabooed-word meaning 'male genital organ'. [1]

Item 312. [ta:kɐlmi:] means 'shoe' in Kano, Bauchi, Zariya, Daura and Katsina. In Sakkwato the word means 'a pair of shoes'. 'One shoe' in Sakkwato is [ta:kɐlme:]. [ta:kɐlma:] means 'shoes' in all the varieties i.e. meaning more than one shoe (except in Sakkwato where it means more than one pair of shoes).

Item . 219. [sa:nɪja:] means 'cow' in all the varieties (except in Sakkwato where it is a tabooed-word). [nɐg^{j}:e], which is a Fulani loan word meaning 'cow', is used in Sakkwato to replace the tabooed-word. But it is surprising to note that the plural of [sa:nɪja:] 'cow' which is [ʃa:nu:] in Sakkwato variety not *[nɐg:^{w}o:g^{j}i:] as might have been expected.

Item 226 [ɓe:ɽa:] means 'mouse' in Kano, Bauchi, Zariya and Daura, while in Katsina and Sakkwato the word for 'mouse' is [k^{w}u:su:]. [k^{w}u:su:] in the other varieties is a tabooed-word meaning 'male genital organ'. [2]

Item 313 [tɐɽk^{w}o:] means 'trap' in all varieties except Sakkwato.

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1. In Katsina and Daura ganda is a tabooed-word meaning 'male genital organ' but in Kano, Bauchi and Zariya (it is not a tabooed-word) it simply means a kind of meat prepared usually for the nursing mothers. It is sometimes called k͡auri.

2. Omar Bello (by personal communicator) felt that the word kusu might be an Arabic loan because according to him there is an Arabic word pronounced the same with similar meaning. The investigator feels that this might be the case and since [k^{w}u:su:] sounds very like [g^{w}u:t'su:] and this similarity of sound may suggest why it too became a tabooed-word.

In Sakkwato the word for 'trap' is [g^{w}u:ɽu:] which also means 'a fried chicken'. In other varieties [g^{w}u:ɽu:] means a medicinal strap which tied round the waist as well as meaning 'a fried chicken'.

Item 400 [ja:ts'a:] means 'finger' in Bauchi, Kano, Zariya, Daura and Katsina, while in Sakkwato the word means 'finger-nail'. What means 'finger-nail' in the other varieties is [ʔɐkʁjh^{w}a:] in Sakkwato.

Item 216 [gɐdu:] 'hog'. In Bauchi and Kano the word has extended meanings. For example, it is taboo in Bauchi and it is considered very sinful (more especially among the women) to say it, hence such words as gadi, alhanzir, mugun dawa, aladen daji are employed instead. In Kano the word is extremely abusive, it is only employed in great anger to refer to a person who is dirty and unmannered or who is engaged in a worthless activity. It is equally offensive in Katsina.

Item 54 [ta:ʃi:] meaning 'fly' is in free-variation with [hi:ɽi:] in Sakkwato. In any case the word [hi:ɽi:] is a Fulani loan word.

Item 209 [ʔʊŋg^{w}ʊlu:] means' vulture' in all varieties except in Sakkwato where the word used is [k^{w}o:lo:]. In Kano and Bauchi the word [k^{w}o:lo:] has different meanings, e.g it can mean (i) any kind of dog (ii) a kind of soup stuff made from baobab seeds. In Katsina the word simply means 'daughters' (cf. the popular saying: 'kolo inuwar gidan wani' meaning 'daughters are an asset to others (not to the parents)'). In Zamfara it means any large tree.

Item 199 [ʔɐg^{w}a:g^{w}a:] means 'duck' in Bauchi, Kano, Katsina and Zariya, while in Sakkwato the word for 'duck' is [k^{w}ʊti:]. In Bauchi, and Kano [k^{w}ʊti:] means 'dog'.

Item 352 [gɐba:] means 'chest' in both Katsina and Sakkwato, while in the other varieties it means 'male or female pudenda'.

Item 257 [g^{w}ɐnda:] means 'pawpaw' in all the varieties except in Katagum in Bauchi, where [g^{w}ɐnda:] means 'a wild custard apple' and [kɐbu:ʃi:] means 'pawpaw'.

Item 322 [ɗi:wa:] means 'anus' in Sakkwato. In other varieties 'anus' is [t͡sù:lɪja:] or [tɐka:ʃiʔ].

Item 316 [huɽa:] is a general term which refers to 'porridge' in other varieties, while in Sakkwato it is a specific term referring to porridge which is ready for consumption (i.e. it has been mixed with milk and sugar or honey).

Item 178 [wɐŋk^{j}i:] 'wash'. In Bauchi (some parts of course) one observes that women avoid using the word to refer to the washing of clothes and use it exclusively for religious purification after menstruation or birth-bleeding. The word [ɗɐɽwɐja:] 'rinse' elsewhere is used instead for washing of the clothes.

Item 388 [wɐta:] means 'moon'. My Sakkwato informant told me that women in Sakkwato do not generally say the word because it is associated with their period (menstruation), and therefore [tɐmɽa:ɽo:] (literally 'star') is used in place of the tabooed-word [wɐta:].

Item 400 [ɸɐɽʧe:] means 'finger-nail' in the varieties of Bauchi, Kano Daura and Zariya, while in Sakkwato it means the 'finger' not the 'finger-nail'. 'Finger-nail' in Sakkwato is [ja:t͡sa:], which in other varieties means 'finger'. So that when a Sakkwato person says 'finger' he would be understood by speakers of other varieties as saying 'finger-nail' and vice-versa.

APPENDIX C_2

WORD LISTS

Abbreviations: Kn. = Kano; Kt = Katsina; B = Bauchi; Z = Zariya; S = Sakkwato; D = Daura.

NO.	GLOSS	Kn.	B.	D.	Z	S	Kt.
1	all	[dʊkɐʔ]	[dʊkɐʔ]	[dɪkɐʔ]	[dʊkɐʔ]	[dʊkɐʔ]	[dʊkɐʔ]
2	and	[dɐʔ]	[dɐʔ]	[dɐʔ]	[dɐʔ]	[dɐʔ]	[dɐʔ]
3	animal	[dɐb:a:]	[dɐb:a:]	[dɐb:a:]	[dɐb:a:]	[bɪsa:]	[dɐb:a:]
4	ashes	[to:ka:]	[to:ka:]	[to:ka:]	[to:ka:]	[hɐbdi:]	[to:ka:]
5	at	[ʔɐʔ]	[ʔɐʔ]	[ʔɐʔ]	[ʔɐʔ]	[ʔɐʔ]	[ʔɐʔ]
6	back	[ba:ja:]	[ba:ja:]	[ba:ja:]	[ba:ja:]	[b j]	[ba:ja:]
7	bad	[ba:k^jɐw]	[ba:k^jɐw]	[ba:k^jɐw]	[ba:k^jɐw]	[ba:k^jɐw]	[ba:k^jɐw]
8	bark	[ɓa:wo:]	[ɓa:wo:]	[k^wɐrɗe:]	[ɓa:wo:]	[ɓa:wa:]	[ɓa:wa:]
9	because	[do:mɪŋ]	[do:mɪŋ]	[do:mɪŋ]	[do:mɪŋ]	[dɔŋ]	[dɔŋ]
10	belly	[ʧɪk^ji:]	[ʧɪk^ji:]	[ʧɪk^ji:]	[ʧɪk^ji:]	[ʧɪk^ji:]	[ʧɪk^ji:]
11	big	[bɐb:a:]	[bɐb:a:]	[bɐb:a:]	[bɐb:a:]	[bɐb:a:]	[bɐb:a:]
12	bird	[ts'ʊnts'u:]	[ts'ʊnts'u:]	[ts'ʊnts'u:]	[ts'ʊnts'u:]	[ts'ʊnts'u:]	[ts'ʊnts'u:]
13	bite	[ʧi:za:]	[ʧi:za:]	[ʧi:za:]	[ʧi:za:]	[ʧi:za:]	[ʧi:za:]

No.	Gloss	Kn.	B.	D.	Z.	S	Kt.
14	black	[bɐkʲ'i:]	[bɐkʲ'i:]	[bɐkʲ'i:]	[bɐkʲ'i:]	[bɐkʲ'i:]	[bɐkʲ'i:]
15	blood	[ʤɪni:]	[ʤɪni:]	[ʤɪni:]	[ʤɪni:]	[ʤɪni:]	[ʤɪni:]
16	blow	[bu:sa:]	[bu:sa:]	[bu:sa:]	[bu:sa:]	[bu:sa:]	[bu:sa:]
17	bone	[k'ɐʃi:]	[k'ɐʃi:]	[k'ɐʃi:]	[k'ɐʃi:]	[k'ɐʃi:]	[k'ɐʃi:]
18	breathe	[numpa:sa:]	[numpa:sa:]	[numpa:sa:]	[numpa:sa:]	[nuŋhʷa:sa:]	[nuŋhʷa:sa:]
19	burn	[k'o:na:]	[k'o:na:]	[to:ja:]	[k'o:na:]	[k'o:na:]	[to:ja:]
20	child	[ja:ɾo:]	[ja:ɾo:]	[ja:ɾo:]	[ja:ɾo:]	[ja:ɾo:]	[ja:ɾo:]
21	cloud	[ga:ʤɪma:ɾeʔ]	[ga:ʤɪma:ɾeʔ]	[ga:ʤɪma:ɾeʔ]	[ʤɪdo:]	[ga:ʤɪma:ɾeʔ]	[ga:ʤɪmaɾɐj]
22	cold	[sɐɲji:]	[sɐɲji:]	[sɐɲji:]	[sɐɲji:]	[sɐɲji:]	[sɐɲji:]
23	come	[zo:ʔ]	[zo:ʔ]	[ja:ka:ʔ]	[zo:ʔ]	[ja:ka:ʔ]	[zo:ʔ]
24	count	[k'ʲɪda:ja:]	[kʲ'ɪda:ja:]	[kʲ'ɪda:ja:]	[kʲ'ɪda:ja:]	[kʲ'ɪda:ja:]	[k'ʲida:ja:]
25	cut	[jɐŋka:]	[jɐŋka:]	[jɐŋka:]	[jɐŋka:]	[jɐŋka:]	[jɐŋka:]
26	day	[ɾa:na:]	[ɾa:na:]	[ɾa:na:]	[ɾa:na:]	[ɾa:na:]	[ɾa:na:]
27	die	[mʊtuʔ]	[mʊtuʔ]	[mʊtuʔ]	[mʊtuʔ]	[ɾɐsuʔ]	[mʊtuʔ]
28	dig	[hɐk'a:]	[hɐka:]	[hɐk'a:]	[hɐk'a:]	[gʲɪna:]	[gʲɪna:]
29	dirty	[mɐjdɐwda:]	[mɐjdɐwda:]	[mɐjdɐwda:]	[mɐjdɐwda:]	[mɐjdɐwda:]	[mɐjdɐwda:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
30	dog	[kɐɾe:]	[kɐɾe:]	[kɐɾe:]	[kɐɾe:]	[kɐɾe:]	[kɐɾe:]
31	drink	[ʃa:]	[ʃa:]	[h^{j}a:]	[ʃa:]	[ʃa:]	[ʃa:]
32	dry	[bu:ʃe:]	[bu:ʃe:]	[bu:ʃe:]	[bu:ʃe:]	[bu:ʃe:]	[bu:ʃe:]
33	dull	[dɪʃɪdɪʃi:]	[dɪʃɪdɪʃi:]	[dɪʃɪdɪʃi:]	[dɪʃɪdɪʃi:]	[dɪʃɪdɪʃi:]	[dɪʃɪdɪʃi:]
34	dust	[$k^{ɣ}$u:ɾa:]	[$k^{ɣ}$u:ɾa:]	[$k^{ɣ}$u:ɾa:]	[$k^{ɣ}$u:ɾa:]	[$k^{ɣ}$u:ɾa:]	[$k^{ɣ}$u:ɾa:]
35	ear	[kʊ̃n:e:]	[kʊ̃n:e:]	[kʊ̃n:e:]	[kʊ̃n:e:]	[kʊ̃n:e:]	[kʊ̃n:e:]
36	earth	[k'ɐsa:]	[k'ɐsa:]	[k'ɐsa:]	[k'ɐsa:]	[k'ɐsa:]	[k'ɐsa:]
37	eat	[ʧi:]	[ʧi:]	[ʧi:]	[ʧi:]	[ʧi:]	[ʧi:]
38	egg	[k'^{w}ɐj]	[k'o:ji:]	[k'^{w}ɔj]	[k'^{w}ɔj]	[k'^{w}ɔj]	[k'^{w}ɔj]
39	eye	[ʔɪdo:]	[ʔɪdo:]	[ʔɪdo:]	[ʔɪdo:]	[ʔɪʤɪja:]	[ʔɪdo:]
40	fall	[ɸa:ʤi:]	[ɸa:ʤi:]	[ɸa:ʤi:]	[ɸa:ʤi:]	[h^{w}a:ʤi:]	[h^{w}a:ʤi:]
41	far	[ne:sa:]	[ne:sa:]	[ne:sa:]	[ne:sa:]	[ne:sa:]	[ne:sa:]
42	fat	[kɪt'se:]	[kɪts'e:]	[kɪts'e:]	[kɪtse:]	[kɪʧ'e:]	[kɪʧ'e:]
43	father	[ʔʊba:]	[ʔʊba:]	[ʔʊba:]	[ʔʊba:]	[ʔʊba:]	[ʔʊba:]
44	fear	[ts'o:ɾo:]	[ts'o:ɾo:]	[ts'o:ɾo:]	[ts'o:ɾo:]	[ts'o:ɾo:]	[ts'oɾo:]
45	feather	[ga:ʃi:]	[ga:ʃi:]	[ga:ʃi:]	[ga:ʃi:]	[ga:ʃi:]	[ga:ʃi:]

No.	Gloss.	Kn.	B.	D.	Z.	S.	Kt.
46	few	[kɐɗɐŋ]	[kɐɗɐŋ]	[kɐɗɐŋ]	[kɐɗɐŋ]	[kɐɗɐŋ]	[kɐɗɐŋ]
47	fight	[ɸɐɗa:]	[ɸɐɗa:]	[ɸɐɗa:]	[ɸɐɗa:]	[h^{w}ɐɗa:]	[h^{w}ɐɗa:]
48	fire	[wʊta:]	[wʊta:]	[wʊta:]	[wʊta:]	[wʊta:]	[wʊta:]
49	fish	[ki:ɸi:]	[ki:ɸi:]	[ki:ɸi:]	[ki:ɸi:]	[ki:hi:]	[ki:hi:]
50	five	[bɪjɐr]	[bɪjɐr]	[bɪjɐl]	[bɪjɐr]	[bɪjɐt]	[bɪjɐr]
51	float	[bɐmbɐɾo:]	[bɐmbɐɾo:]	[bɐmbɐɾo:]	[bɐmbɐɾo:]	[bɐmbɐɾo:]	[bɐmbɐɾo:]
52	flow	[k^{w}ɐɾa:ɾa:]	[k^{w}ɐɾa:ɾa:]	[k^{w}ɐɾa:ɾa:]	[k^{w}ɐɾa:ɾa:]	[k^{w}ɐɾa:ɾa:]	[k^{w}ɐɾa:ɾa:]
53	flower	[hʊɾe:]	[hʊɾe:]	[hʊɾe:]	[hʊɾe:]	[hʊɾe:]	[hʊɾe:]
54	fly	[ta:ʃi:]	[ta:ʃi:]	[ta:ʃi:]	[ta:ʃi:]	[ta:ʃi:]	[ta:ʃi:]
55	fog	[hɐzo:]	[hɐzo:]	[hɐzo:]	[hɐzo:]	[bu:da:]	[bu:ʤi:]
56	foot	[k'ɐɸa:]	[k'ɐɸa:]	[k'ɐɸa:]	[k'ɐɸa:]	[k'ɐh^{w}a:]	[k'ɐh^{w}a:]
57	four	[hʊɗu:ʔ]	[hʊɗu:ʔ]	[hʊɗu:ʔ]	[hʊɗu:ʔ]	[hʊɗu:ʔ]	[hʊɗu:ʔ]
58	fruit	[ɗeŋʔɪʧe:]	[ɗeŋʔɪʧe:]	[ɗeŋʔɪʧe:]	[ɗeŋʔɪʧe:]	[ɗeŋʔɪʧe:]	[ɗeŋʔɪʧe:]
59	give	[ba:]	[ba:]	[ba:]	[ba:]	[ba:]	[ba:]
60	good	[mɐjk^{j}ɐw]	[mɐjk^{j}ɐw]	[mɐjk^{j}ɐw]	[mɐjk^{j}ɐw]	[mɐjk^{j}ɐw]	[mɐjk^{j}ɐw]
61	grass	[ʧɪja:wa:]	[ʧɪja:wa:]	[ʧɪja:wa:]	[ʧɪja:wa:]	[hɐk^{j}i:]	[hɐk^{j}i:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
62	green	[kʷo:ɾe:]	[kʷo:ɾe:]	[kʷo:ɾe:]	[ko:ɾe:]	[tsʻɐŋwa:]	[ʤɐŋjeŋhɐkʲi:]
63	guts	[hɐn̂ʤi:]	[hɐn̂ʤi:]	[hɐnʤi:]	[hɐn̂ʤi:]	[hɐn̂ʤi:]	[hɐn̂ʤi:]
64	hair	[ga:ʃi:]	[ga:ʃi:]	[ga:ʃi:]	[ga:ʃi:]	[ga:ʃi:]	[ga:ʃi:]
65	hand	[hɐn:u:]	[hɐnu:]	[hɐn:u:]	[hɐn:u:]	[hɐn:u:]	[hɐn:u:]
66	he	[ʃi:]	[ʃi:]	[ʃi:]	[ʃi:]	[ʃi:]	[ʃi:]
67	head	[kɐj]	[ka:ji:]	[kɐj]	[kɐj]	[kɐj]	[kɐj]
68	hear	[ʤi:]	[ʤi:]	[ʤi:]	[ʤi:]	[ʤi:]	[ʤi:]
69	heart	[zu:ʧɪja:]	[zuʧ:ɪja:]	[zuʧ:ɪja:]	[zu:ʧɪja:]	[zuʧ:ɪja:]	[zuʧ:ɪja:]
70	heavy	[mɐjnɐwji:]	[mɐjnɐwji:]	[mɐjnɐwji:]	[mɐjnɐwji:]	[mɐjnɐwji:]	[mɐjnɐwji:]
71	here	[nɐŋ]	[nɐŋ]	[nɐŋ]	[nɐŋ]	[nɐŋ]	[nɐŋ]
72	hit	[do:ka:]	[do:ka:]	[do:ka:]	[do:ka:]	[do:ka:]	[do:ka:]
73	hold	[ɾɪkʲ'a:]	[ɾɪkʲ'e:]	[ɾɪkʲ'e:]	[ɾɪkʲ'a:]	[ɾɪkʲ'e:]	[ɾɪkʲ'e:]
74	how	[ja:ja:]	[ja:ja:]	[ja:ja:]	[ja:ja:]	[ja:ja:]	[ja:ja:]
75	hunt	[ɸeɾɐwta:]	[ɸeɾɐwta:]	[ɸeɾɐwta:]	[ɸeɾɐwta:]	[hʷe ɾɐwta:]	[hʷe ɾɐwta:]
76	husband	[mɪʤi:]	[mɪʤi:]	[mɪʤi:]	[mɪʤi:]	[mɪʤi:]	[mɪʤi:]
77	I	[ni:]	[ni:]	[ni:]	[ni:]	[ni:]	[ni:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
78	ice	[kʻɐŋkʻɐɾaː]	[kʻɐŋkʻɐɾaː]	[kʻɐŋkʻɐɾaː]	[kʻɐŋkʻɐɾaː]	[kʻɐŋkʻɐɾaː]	[kʻɐŋkʻɐɾaː]
79	if	[ʔɪdɐŋ]	[ʔɪŋ]	[ʔɪdɐŋ]	[ʔɪŋ]	[ʔɪŋ]	[ʔɪdɐŋ]
80	in	[ʧɪkʲiː]	[ʧɪkʲiː]	[ʧɪkʲiː]	[ʧɪkʲiː]	[ʧɪkʲiː]	[ʧɪkʲiː]
81	kill	[kɐʃeː]	[kɐʃeː]	[kɐheː]	[kɐʃeː]	[kɐʃeː]	[kɐʃeː]
82	know	[sɐniː]	[sɐniː]	[sɐniː]	[sɐniː]	[sɐniː]	[sɐniː]
83	lake	[tɐpkʲiː]	[tɐbkʲiː]	[tɐbkʲiː]	[tɐpkʲiː]	[tɐbkʲiː]	[tɐbkʲiː]
84	laugh	[jɪdaːɾɪjaː]	[jɪdaːɾɪjaː]	[jɪdaːɾɪjaː]	[jɪdaːɾɪjaː]	[jɪdaːɾɪjaː]	[jɪdaːɾɪjaː]
85	leaf	[gɐŋjeː]	[gɐŋjeː]	[gɐŋjeː]	[gɐŋjeː]	[kʊnːeŋʔɪʧeː]	[gɐŋjeː]
86	leftside	[ɓaːɾɪŋhegʊː]	[gʲeːɸeŋhegʊː]	[ɓaːɾɪŋhegʊː]	[ɓaːɾɪŋhegʊː]	[ʃɪjɐhːɐwniː]	[gʲeːheŋhegʊː]
87	leg	[kʻɐɸaː]	[kʻɐɸaː]	[kʻɐɸaː]	[kʻɐɸaː]	[kʻɐhʷaː]	[kʻɐhʷaː]
88	lie	[kʻɐɾɪjaː]	[kʻɐɾɪjaː]	[kʻɐɾɪjaː]	[kʻɐɾɪjaː]	[kʻɐɾɪjaː]	[kʻɐɾɪjaː]
89	live	[zɐwnaː]	[zɐmmaː]	[zɐwnaː]	[z mnaː]	[zɐmnaː]	[zɐwnaː]
90	liver	[hɐntaː]	[hɐntaː]	[hɐntaː]	[hɐntaː]	[ʔɐntaː]	[ʔɐntaː]
91	long	[doːgʷoː]	[doːgʷoː]	[doːgʷoː]	[doːgʷoː]	[doːgʷoː]	[doːgʷoː]
92	louse	[kʷɐrkʷɐtaː]	[kʻʷɐrkʻʷɐtaː]	[kʷɐkʷːɐtaː]	[kʷɐrkʷɐtaː]	[kʲeːjaː]	[kʷɐlkʷɐtaː]
93	man	[mʊtʊm]	[mʊtʊŋ]	[mʊtʊm]	[mʊtʊm]	[mʊtʊm]	[mʊtʊm]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
94	many	[dɐjɐwa:]	[dɐjɐwa:]	[dɐjɐwa:]	[dɐjɐwa:]	[tʊl:ʊg^{w}u:]	[dɐjɐwa:]
95	meat	[na:ma:]	[na:ma:]	[na:ma:]	[na:ma:]	[na:ma:]	[na:ma:]
96	mother	[ʔʊwa:]	[ʔʊwa:]	[ʔʊwa:]	[ʔʊwa:]	[ʔʊwa:]	[ʔʊwa:]
97	mountain	[tsɐwni:]	[du:ts'e:]	[du:ts'e:]	[ts'ɐwni:]	[ts'ɐwni:]	[tsɐwni:]
98	mouth	[ba:k^{j}i:]	[ba:k^{j}i:]	[ba:k^{j}i:]	[ba:k^{j}i:]	[ba:k^{j}i:]	[ba:k^{j}i:]
99	name	[su:na:]	[su:na:]	[su:na:]	[su:na:]	[su:na:]	[su:na:]
100	narrow	[mɐts'ɐts:e:]	[mɐts'ɐts:e:]	[mɐts'ɐts':e:]	[mɐts'ɐts':e:]	[mɐtsɐʧ':e:]	[mɐtsɐʧ':e:]
101	near	[k^{w}ʊsa:]	[k^{w}ʊsa:]	[k^{w}ʊsa:]	[k^{w}ʊsa:]	[k^{w}ʊsa:]	[k^{w}ʊsa:]
102	neck	[wʊja:]	[wʊja:]	[wʊja:]	[wʊja:]	[wʊja:]	[wʊja:]
103	now	[jɐnzu:]	[jɐnzu:]	[jɐnzu:]	[jɐnzu:]	[jɐnzu:]	[jɐnzu:]
104	night	[dɐɽe:]	[dɐɽe:]	[dɐɽe:]	[dɐɽe:]	[dɐɽe:]	[dɐɽe:]
105	nose	[hɐ̃ʧi:]	[hɐ̃ʧi:]	[hɐ̃ʧi:]	[hɐ̃ʧi:]	[hɐ̃ʧi:]	[hɐ̃ʧi:]
106	not	[ba:]	[ba:]	[ba:]	[ba:]	[ba:]	[ba:]
107	old	[ts'o:ho:]	[ts'o:ho:]	[ts'o:ho:]	[ts'o:ho:]	[ts'o:ha:]	[tso:ho:]
108	one	[ɗɐja:ʔ]	[ɗɐja:ʔ]	[ɗɐja:ʔ]	[ɗɐja:ʔ]	[ɗɐja:ʔ]	[ɗɐja:ʔ]
109	other	[wɐni:]	[wɐni:]	[wɐni:]	[wɐni:]	[wɐni:]	[wɐni]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
110	person	[mʊtʊm]	[mʊtʊm]	[mʊtʊm]	[mʊtʊm]	[mʊtʊm]	[mʊtʊm]
111	play	[wa:sa:]	[wa:sa:]	[wa:sa:]	[wa:sa:]	[wɐɾgʲi:]	[wɐɾgʲi:]
112	pull	[ʤa:]	[ʤa:]	[ʤa:]	[ʤa:]	[ʤa:]	[ʤa:]
113	push	[tu:ɾa:]	[tu:ɾa:]	[tu:ɾa:]	[tu:ɾa:]	[dʊŋgʷʊza:]	[tu:ɾa:]
114	rain	[ɾʊwɐnsɐma:]	[ɾʊwɐnsɐma:]	[ɾʊwɐnsɐma:]	[ɾʊwɐnsɐma:]	[ɾʊwɐnbɪsa:]	[ɾʊwɐnsɐma:]
115	red	[ʤa:]	[ʤa:]	[ʤa:]	[ʤa:]	[ʤa:]	[ʤa:]
116	right	[dɐjdɐj]	[dɐjdɐj]	[dɐjdɐj]	[dɐjdɐj]	[dɐjdɐj]	[dɐjdɐj]
117	rightside	[gʲe:ɸɐnda:ma:]	[gʲe:ɸɐnda:ma:]	[gʲe:hʷɐnda:ma:]	[gʲe:ɸɐnda:ma:]	[wɐʤɐnda:ma:]	[gʲe:hɐnda:ma:]
118	river	[kʷo:gʲi:]	[kʷo:gʲi:]	[kʷo:gʲi:]	[kʷo:gʲi:]	[gʷʊlbi:]	[kʷo:gʲi:]
119	road	[hɐnja:]	[hɐnja:]	[hɐnja:]	[hɐnja:]	[hɐnja:]	[hɐnja:]
120	root	[sɐjwa:]	[sɐjwa:]	[sɐjwa:]	[ʤi:ʤija:]	[sɐji:]	[sɐwja:]
121	rope	[ʔɪgʲɪja:]	[ʔɪgʲɪja:]	[ʔɪgʲɪja:]	[ʔɪgɪja:]	[jɐgːʲɪja:]	[ʔɪgɪja:]
122	rotten	[ɾʊbɐb:e:]	[ɾʊbɐb:e:]	[ɾʊbɐb:e:]	[ɾʊbɐb:e:]	[ɾʊbɐb:e:]	[ɾʊbɐb:e:]
123	rub	[gʷo:ga:]	[gʷo:ga:]	[gʷo:ga:]	[gʷo:ga:]	[gʷo:ga:]	[gʷo:ga:]
124	sand	[ja:ʃi:]	[ja:ʃi:]	[ja:ʃi:]	[ja:ʃi:]	[ɾe:ɾɐj]	[ɾɐjɾɐj]
125	say	[ɸɐdi:]	[ɸɐdi:]	[gɐja:]	[ɸɐdi:]	[hʷɐdi:]	[hɪdi:]

No.	Gloss.	Kn.	B.	D.	Z.	S.	Kt.
126	scratch	[so:sa:]	[so:sa:]	[so:sa:]	[so:sa:]	[so:sa:]	[so:sa:]
127	sea	[te:k^{w}u:]	[te:k^{w}u:]	[tɐjk^{w}u:]	[te:k^{w}u:]	[k^{w}ʊwa:ɽa:]	[te:k^{w}u:]
128	see	[gɐni:]	[gɐni:]	[gɐni:]	[gɐni:]	[gɐni:]	[gɐni:]
129	seed	[ʔɪɽi:]	[ʔɪɽi:]	[ʔɪɽi:]	[ʔɪɽi:]	[ʔɪɽi:]	[ʔɪɽi:]
130	sew	[ʤɪŋka:]	[ʤɪŋka:]	[ʤɪŋka:]	[ʤɪŋka:]	[ʤɪŋka:]	[ʤɪŋka:]
131	sharp	[mɐjkɐjɸi:]	[mɐjkɐjɸi:]	[mɐjkɐjɸi:]	[mɐjkɐjɸi:]	[mɐjkɐjhi:]	[mɐjkɐjhi:]
132	sit	[zɐwna:]	[zɐwna:]	[zɐwna:]	[zɐwna:]	[zɐmna:]	[zɐwna]
133	short	[gɐʤɐ:ɽe:]	[gɐʤɐ:ɽe:]	[gɐʤɐ:ɽe:]	[gɐʤɐ:ɽe:]	[gɐʤɐ:ɽe:]	[gɐʤɐ:ɽe:]
134	sing	[ʔɪwa:k'a:]	[jɪwa:k'a:]	[jɪwa:k'a:]	[jɪwa:k'a:]	[jɪwak'a:]	[jɪwa:k'a:]
135	skin	[ɸa:ta:]	[ɸa:ta:]	[h^{w}a:ta:]	[ɸa:ta:]	[h^{w}a:ta:]	[h^{w}a:ta:]
136	sky	[sɐma:]	[sɐma:]	[sɐma:]	[sɐma:]	[bɪsa:]	[sɐma:]
137	sleep	[bɐrʧi:]	[bɐʧ:i:]	[bɐʧ:i:]	[bɐʧ:i:]	[k^{w}a:na:]	[bɐʧ:i:]
138	small	[k'ɐɽɐmi:]	[k'ɐɽɐmi:]	[k'ɐɽɐmi:]	[kɐɽɐmi:]	[k'ɐɽɐmi:]	[k'ɐɽɐm :]
139	smell	[sɐnsɐna:]	[sʊnsʊna:]	[ʃɪnʃɪna:]	[sʊnsʊna:]	[sʊnsʊna:]	[sʊnsʊna:]
140	smoke	[hɐja:k^{j}'i:]	[hɐja:k$^{'j}$i:]	[hɐja:k$^{'j}$i:]	[hɐja:k$^{'j}$i:]	[hɐja:k$^{'j}$i:]	[hɐja:k$^{'j}$i:]
141	smooth	[mɐjsɐnts'i:]	[mɐjsɐnts'i:]	[mɐjsɐnts'i:]	[mɐjsɐnts'i:]	[mɐjsɐnts'i:]	[mɐjsʊlbi:]
142	some	[wɐni:]	[wɐni:]	[wɐni:]	[wɐni:]	[wɐni:]	[wɐni:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
143	snake	[mɛʧi:ʤi:]	[mɛʧi:ʤi:]	[mɛʧi:ʤi:]	[mɛʧi:ʤi:]	[mɛʧi:ʤi:]	[mɛʧi:ʤi:]
144	spit	[to:Φa:]	[to:Φa:]	[to:Φa:]	[to:Φa:]	[to:h^{W}a:]	[to:h^{W}a:]
145	split	[Φɛskɐɽa:]	[Φɛskɐɽa:]	[Φɛskɐɽa:]	[Φɛskɐɽa:]	[h^{W}ɛskɐɽa:]	[h^{W}ɛskɐɽa:]
146	squeeze	[ta:tś'e:]	[ta:ts'e:]	[ta:ts'e:]	[ta:ts'e:]	[t^{W}a:ts'e:]	[ta:ts'e:]
147	stab	[so:ka:]	[so:ka:]	[so:ka:]	[so:ka:]	[so:ka:]	[so:ka:]
148	stand	[ts'ɐja:]	[ts'ɐja:]	[ts'ɐja:]	[ts'ɐja:]	[ts'ɐja:]	[ts'ɐja:]
149	star	[tɛwɽa:ɽo:]	[tɛwɽa:ɽo:]	[tɛwɽa:ɽo:]	[tɛwɽa:ɽo:]	[tɛmɽa:ɽo:]	[tɛmɽa:ɽo:]
150	salt	[g^{j}ɪʃɪɽi:]	[g^{j}ɪʃɪɽi:]	[g^{j}ɪʃɪɽi:]	[g^{j}ɪʃɪɽi:]	[g^{j}ɪʃɪɽi:]	[g^{j}ɪʃɪɽi:]
151	stone	[du:ts'e:]	[du:ts'e:]	[du:ts'e:]	[du:ts'e:]	[du:ʧ'i:]	[du:ʧ'i:]
152	stick	[sɛnda:]	[sɛnda:]	[sɛnda:]	[sɛnda:]	[sɛnda:]	[sɛnda:]
153	straight	[ʔɛmi:k'^{j}e:]	[ʔɛmi:k'^{j}e:]	[ʔɛmi:k'^{j}e:]	[ʔɛmi:k'^{j}e:]	[mi:k'^{j}e:]	[ʔɛmi:k'^{j}e:]
154	suck	[ts'o:ts'a:]	[ts':ts'a:]	[ts'o:ts'a:]	[ts'o:ts'a:]	[ts'o:ts'a:]	[ts'o:ts'a:]
155	sun	[ɽa:na:]	[ɽa:na:]	[ɽa:na:]	[ɽa:na:]	[ɽa:na:]	[ɽa:na:]
156	swell	[k^{W}umbuɽa:]	[k^{W}umbuɽa:]	[k^{W}umbuɽa:]	[k^{W}umbuɽa:]	[k^{W}umbuɽa:]	[k^{W}umbuɽa:]
157	swim	[nɪŋk'a:ja:]	[ʔɪjo:]	[nɪŋk'a:ja:]	[k^{W}uɽme:]	[ʔɪjo:]	[ʔɪjo:]
158	tail	[ʤe:la:]	[wʊts'ɪja:]	[wʊtsɪja:]	[wʊts'ɪja:]	[bʊndi:]	[wʊʧ'ɪja:]

No.	Gloss.	Kn.	B.	D.	Z.	S.	Kt.
159	that *(masc)*	[wɐn ʧɐŋ]	[wɐn ʧɐŋ]	[wɐn ʧɐŋ]	[wɐn ʧɐŋ]	[wɐn ʧɐŋ]	[wɐn ʧɐŋ]
160	there	[ʧɐŋ]	[ʧɐŋ]	[ʧɐŋ]	[ʧɐŋ]	[ʧɐŋ]	[ʧɐŋ]
161	they	[su:]	[su:]	[su:]	[su:]	[su:]	[su:]
162	thick	[kɐk:ɐwɽa:]	[kɐk:ɐwɽa:]	[mɐjkɐbɽi:]	[kɐk:ɐwɽa:]	[mɐjkɐbɽi:]	[mɐjkɐbɽi:]
163	thin	[si:ri:ri:]	[si:ri:ri:]	[si:ɽi:ɽi:]	[si:ri:ri:]	[si:ɽi:ɽi:]	[si:li:li:]
164	think	[tʊna:]	[tʊna:]	[tʊna:]	[tʊna:]	[tʊna:]	[tʊna:]
165	this *(masc)*	[wɐn:ɐŋ]	[wɐn:ɐŋ]	[wɐn:ɐŋ]	[wɐn:ɐŋ]	[wɐŋga:]	[wɐn:ɐŋ] [w ŋʔɪŋ]
166	thou	[kɐj]	[kɐj]	[kɐj]	[kɐj]	[kɐj]	[kɐj]
167	three	[ʔʊk^{W}u:]	[ʔʊk^{W}u:]	[ʔʊk^{W}:u:]	[ʔʊk^{W}u:]	[ʔʊk:^{W}u:]	[ʔʊk^{W}:u:]
168	throw	[ʤe:ɸa:]	[ʤe:ɸa:]	[ʤe:ɸa:]	[ʤe:ɸa:]	[ʤe:h^{W}a:]	[ʤe:h^{W}a:]
169	tie	[ʤewɽa:]	[ʤewɽa:]	[ʤɐwɽa:]	[ʤewɽa:]	[ʤɐmɽa:]	[ʤewɽa:]
170	tongue	[hɐrʃe:]	[hɐrʧe:]	[hɐlʃe:]	[hɐrʃe:]	[hɐlʃe:]	[hɐlʃe:]
171	tooth	[hɐk$^{'W}$o:ɽi]	[hɐk$^{'W}$o:ɽi:]	[hɐk$^{W'}$o:ɽi:]	[hɐk$^{W'}$o:ɽi:]	[hɐwɽe:]	[hɐk$^{W'}$o:ɽi:]
172	tree	[bɪʃɪja:]	[bɪʃɪja:]	[ʔɪta:ʧɪja:]	[ʔɪta:ʧɪja:]	[ʔɪʧ:e:]	[ʔɪʧ:e:]
173	turn	[ʤu:ja:]	[ʤu:ja:]	[ʤu:ja:]	[ʤu:ja:]	[bɪɽ^{I}k^{j}ita:]	[ʤu:ja:]
174	two	[bɪju:]	[bɪju:]	[bɪju:]	[bɪju:]	[bɪju:]	[bɪju:]
175	vomit	[hɐrɐs]	[ʔɐmɐj]	[ʔɐmɐj]	[ʔɐmɐj]	[ʔɐmɐj]	[ʔɐmɐj]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
176	walk	[jɪtɛΦɪja:]	[jɪtɛΦɪja:]	[jɪtɛΦɪja:]	[jɪtɛΦɪja:]	[jɪtɛhɪja:]	[jɪtɛhɪja:]
177	warm	[mɐjɗumi:]	[mɐjɗumi:]	[mɐjza:hi:]	[mɐjɗumi:]	[mɐjza:hi:]	[mɐjza:hi:]
178	wash	[wɐŋk^{j}e:]	[wɐŋk^{j}e:]	[wɐŋk^{j}e:]	[wɐŋk^{j}e:]	[wɐŋk^{j}e:]	[wɐŋk^{j}e:]
179	water	[ɾʊwa:]	[ɾʊwa:]	[ɾʊwa:]	[ɾʊwa:]	[ɾʊwa:]	[ɾʊwa:]
180	we	[mu:]	[mu:]	[mu:]	[mu:]	[mu:]	[mu:]
181	wet	[ʤɪk'a:]	[ʤɪk'a:]	[ʤɪk'a:]	[ʤɪk'a:]	[ʤɪk'a:]	[ʤɪk'a:]
182	what	[me:]	[me:]	[me:]	[me:]	[me:]	[me:]
183	when	[jɐwʃe:]	[jɐwʃe:]	[jɐwh^{j}e:]	[jɐwʃe:]	[jɐwʃe:]	[jɐwʃe:]
184	where	[ʔɪna:]	[ʔɪna:]	[ʔɪna:]	[ʔɪna:]	[ʔɪna:]	[ʔɪna:]
185	white	[ΦɐɾI:]	[ΦɐɾI:]	[h^{w}ɐɾI:]	[ΦɐɾI:]	[h^{w}ɐɾI:]	[ΦɐɾI:]
186	who	[wa:ne:]	[wa:ne:]	[wa:ne:]	[wa:ne:]	[wa:ne:]	[wa:ne:]
187	wide	[mɐjΦa:ɗi:]	[mɐjΦa:ɗi:]	[mɐjh^{w}:aɗi:]	[mɐjΦa:ɗi:]	[mɐjh^{w}a:ɗi:]	[mɐjh^{w}a:ɗi:]
188	wife	[mɐʧe:]	[mɐʧe:]	[mɐʧe:]	[mɐʧe:]	[mɐʧe:]	[mɐʧe:]
189	wind	[ʔɪska:]	[ʔɪska:]	[ʔɪska:]	[ʔɪska:]	[ʔɪska:]	[ʔɪska:]
190	wing	[hʊka:hʊk^{j}i:]	[ΦɪΦ:ɪk^{j}e:]	[hʊh:ʊh^{j}e:]	[ΦɪΦ:ɪk^{j}e:]	[hʊh:ʊk^{j}e:]	[ΦɪΦ:ɪk^{j}e:]
191	wipe	[ʃa:Φe:]	[ʃa:Φe:]	[ʃa:Φe:]	[ʃa:Φe:]	[ʃa:he:]	[ʃa:he:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
192	with	[da:ʔ]	[da:ʔ]	[da:]	[da:]	[da:ʔ]	[da:ʔ]
193	woman	[ma:ta:]	[mɐʧe:]	[mɐʧe:]	[ma:ta:]	[ma:ta:]	[ma:ta:]
194	woods	[kʊɽmi:]	[kʊɽmi:]	[kʊɽmi:]	[kʊɽmi:]	[kʊɽmi:]	[kʊɽmi:]
195	worm	[ts'u:ts'a:]	[ts'u:ts'a]	[ts'u:ts'a:]	[ts'u:ts'a:]	[ts'u:ts'a:]	[ta:na:]
196	ye	[ka:]	[ka:]	[ka:]	[ka:]	[ka:]	[ka:]
197	year	[ʃe:kɐɽa:]	[ʃe:kɐɽa:]	[ʃe:kɐɽa:]	[ʃe:kɐɽa:]	[ʃe:kɐɽa:]	[ʃe:kɐɽa:]
198	yellow	[ɽʊwɐndó:ɽ wa:]	[ɽa:wɐja:]	[ɽa:wɐja:]	[ɽʊwɐndó:ɽ wa:]	[ɽʊwɐŋk$^{w'}$ɔ j]	[ɽa:w ja:]
199	duck	[ʔɐg^{w}a:g^{w}a:]	[ʔɐg^{w}a:g^{w}a:]	[ʔɐg^{w}a:g^{w}a:]	[ʔɐg^{w}a:g^{w}a:]	[kʊti:]	[ʔɐg^{w}a:g^{w}a:]
200	pigeon	[tɐntɐbɐɽa:]	[tɐt:ɐbɐɽu:]	[tɐntɐbɐɽa:]	[bɐɽu:]	[tɐntɐbɐɽa:]	[tɐntɐbɐɽu:]
201	egret	[bɐlbe:la:]	[bɐlbe:la:]	[bɐlbe:la:]	[bɐlbe:la:]	[bɐlbe:wa:]	[bɐlbe:la:]
202	goose	[dɪɲja:]	[dɪɲja:]	[dɪɲja:]	[dɪɲja:]	[dɪmja:]	[dɪɲja:]
203	owl	[mu:ʤɪja:]	[du:ʤi:]	[du:ʤi:]	[mu:ʤɪja:]	[mu:ʤɪja:]	[mu:ʤɪja:]
204	francholin	[mɐk^{w}ɐ ɽwa:]	[ɸɐkɐɽa:]	[h^{w}ɐkɐɽa:]	[mɐk^{w}ɐɽwa:]	[h^{w}ɐ k^{w}ɐ ɽa:]	[mɐk^{w}ɐ ɽwa:]
205	magpie	[hɐŋka:ka:]	[hɐŋka:ka:]	[hɐŋka:ka:]	[hɐŋka:ka:]	[hɐŋka:ka:]	[hɐŋka:ka:]
206	hen	[ka:za:]	[ka:za:]	[ka:za:]	[ka:za:]	[ka:za:]	[ka:za:]
207	dove	[k^{w}ʊɽʧɪja:]	[k^{w}ʊɽʧɪja:]	[k^{w}ʊɽʧɪja:]	[k^{w}ʊɽʧɪja:]	[k^{w}ʊɽʧɪja:]	[k^{w}ʊɽʧɪja:]

No.	Gloss.	Kn.	B.	D.	Z.	S.	Kt.
208	stork	[ʃa:mʊwa:]	[ʃa:mʊwa:]	[ʃa:mʊwa:]	[ʃa:mʊwa:]	[ʃa:mʊwa:]	ʃa:mʊwa:]
209	vulture	[ʔʊŋg^{w}ʊlu:]	[ʔʊŋg^{w}ʊlu:]	[ʔʊŋg^{w}ʊlu:]	[ʔʊŋg^{w}ʊlu:]	[k^{w}o:lo:]	ʔʊŋg^{w}ʊlu:]
210	guinea fowl	[za:bʊwa:]	[za:bʊwa:]	[za:bʊwa:]	[za:bʊwa:]	[za:bʊwa:]	za:bʊwa:]
211	grey heron	[zɐlɓe:]	[dʒɛlɓe:]	[zɐlɓe:]	[zɐlɓe:]	[z^{w}ɐɽɓi:]	zɐɽɓi:]
212	swallow	[ʔɐlɐl:ɐka:]	[tɾla:tɐla:]	[ʔɐlɐl:ɐka:]	[mɐʃɪɾe:ɾa:]	[ʃʊnʃu:nɪja:]	ʧɐwʧa:wa:]
213	leopard	[da:mɪsa:]	[da:mɪsa:]	[da:mɪsa:]	[da:mɪsa:]	[da:mɪsa:]	da:mɪsa:]
214	duiker	[gɐda:]	[gɐda:]	[gɐda:]	[gɐda:]	[gɐda:]	gɐda:]
215	elephant	[g^{j}i:wa:]	[g^{j}i:wa:]	[g^{j}i:wa:]	[g^{j}i:wa:]	[g^{j}i:wa:]	g^{j}i:wa:]
216	hog	[gɐdu:]	[ga:di:]	[gadu:]	[gadu:]	[g^{j}a:do:]	g^{w}ʊnzu:]
217	lion	[za:k^{j}i:]	[za:k^{j}i:]	[za:k^{j}i:]	[za:k^{j}i:]	[za:k^{j}i:]	za:k^{j}i:]
218	sheep	[tɪŋk^{j}ɪja:]	[tɪŋk^{j}ɪja:]	[tɪŋk^{j}ɪja:]	[tɪŋk^{j}i:ja:]	[tʊmk^{j}ɪja:]	tɪŋk^{j}ɪja:]
219	cow	[sa:nɪja:]	[sa:nɪja:]	[sa:nɪja:]	[sa:nɪja:]	[n g:e:]	sa:nʊwa:]
220	horse	[do:k^{j}i:]	[do:k^{j}i:]	[do:k^{j}i:]	[do:k^{j}i:]	[do:k^{j}i:]	do:k^{j}i:]
221	monitor	[g^{w}ʊza:]	[g^{w}ʊza:]	[g^{w}ʊza:]	[g^{w}ʊza:]	[tsa:ɾi:]	g^{w}ʊza:]
222	cobra	[gɐnʃe:k'a:]	[gɐmɐʃe:k'a:]	[gɐn̂ʃe:k'a:]	[gɐn̂ʃe:k'a:]	[gɐmʃe:k'a:]	gɐmʃe:k'a:]
223	shrew mouse	[dʒa:ba:]	[dʒa:ba:]	[dʒa:ba:]	[dʒa:ba:]	[dʒa:ba:]	dʒa:ba:]
224	lizard	[k'ɐdɐŋgɐɾe:]	[k'ɐdɐŋgɐɾe:]	[k'ɐdɐŋgɐɾe:]	k'ɐdɐŋgɐɾe:]	[k'ɐdɐŋgɐɾe:]	k'ɐdɐŋgɐɾe:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
225	scorpion	[k^{w}ʊna:ma:	k^{w}ʊna:ma:]	k^{w}ʊna:ma:]	k^{w}ʊna:ma:]	k^{w}ʊna:ma:]	k^{w}ʊna:ma:]
226	mouse	[ɓe:ɽa:]	[ɓe:ɽa:]	[ɓe:ɽa:]	[ɓe:ɽa:]	[k^{w}u:su:]	[kʊ:su:]
227	iguana lizard	[dɐmo:]	[dɐmo:]	[dɐmo:]	[dɐmo:]	[dɐmo:]	[dɐmo:]
228	billy goat	[bʊnsʊɽu:]	[bʊnsʊɽu:]	[bʊnsʊɽu:]	[bʊnsʊɽu:]	[bʊnsʊɽu:]	[bʊnsʊɽu:]
229	nanny goat	[ʔɐk^{w}ʊja:]	[ʔɐk^{w}ʊja:]	[ʔɐk^{w}ʊja:]	[ʔɐk^{w}ʊja:]	[ʔɐk^{w}ʊja:]	[ʔɐk^{w}ʊja:]
230	deer	[bɽɐ:wa:]	[bɐɽe:wa:]	[bɐɽe:wa:]	[bɐɽe:wa:]	[bɽɐ:wa:]	[bɐɽe:wa:]
231	monkey	[bɪɽi:]	[bɪɽi:]	[bɪɽi:]	[bɪɽi:]	[bɪɽi:]	[bɪɽi:]
232	buffalo	[ɓɐwna:]	[ɓɐwna:]	[ɓɐwna:]	[ɓɐwna:]	[ɓɐwna:]	[ɓɐwna:]
233	donkey	[ʤa:k^{j}i:]	[ʤa:k^{j}i:]	[ʤa:k^{j}i:]	[ʤa:k^{j}i:]	[ʤa:k^{j}i:]	[ʤɐk^{j}:i:]
234	fly(n)	[$k^{w'}$ʊda:]	[$k^{w'}$ʊda:]	[$k^{w'}$ʊda:]	[$k^{w'}$ʊda:]	[$k^{w'}$ʊʤe:]	[$k^{w'}$ʊda:]
235	cockroach	[k^{j}ɐŋk^{j}ɐso:]	[$k^{j'}$ɐ ŋ$k^{j'}$ɐ so:]	[k^{j}ɐŋk^{j}ɐso:]	[$k^{j'}$ɐ ŋ$k^{j'}$ɐ so:]	[$k^{j'}$ɐ ŋ$k^{j'}$ɐ so:]	[k^{j}ɐŋk^{j}ɐso:]
236	flea	[$k^{w'}$ʊma:]	[$k^{w'}$ʊma:]	[$k^{w'}$ʊma:]	[$k^{w'}$ʊma:]	[$k^{w'}$ʊma:]	[$k^{w'}$ʊma:]
237	bedbug	[k^{w}ʊɗi:]	[k^{w}ʊɗi:]	[k^{w}ʊɗi:]	[k^{w}ʊɗi:]	[gɐzʊnzʊmi:]	[k^{w}ʊɗi:]
238	frog	[k^{w}a:ɗo:]	[k^{w}a:ɗo:]	[k^{w}a:ɗo:]	[k^{w}a:ɗo:]	[k^{w}ɐʔɗo:]	[k^{w}ɐʔɗo:]
239	mosquito	[sɐwɽo:]	[sɐwɽo:]	[sɐwɽo:]	[sɐwɽo:]	[sɐbɽo:]	[sɐmɽo:]
240	ant	[tʊɽu:ɽʊwa:]	[tʊɽu:ɽʊwa:]	[tʊɽu:ɽʊwa:]	[tʊɽu:ɽʊwa:]	[tʊɽu:ɽʊwa:]	[tʊɽwa:]
241	white ant	[zɐg^{w}o:]	[zɐg^{w}o:]	[zɐg^{w}o:]	[zɐg^{w}o:]	[zɐg^{j}ɪjo:]	[zɐg^{w}o:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
242	cotton	[ʔɐwduga:]	[ʔɐwduga:]	[ʔɐbduga:]	[ʔɐwduga:]	[ka:ɗa:]	[ʔɐd:uga:]
243	rat	[bʊɽgʷu:]	[bʊɽgʷu:]	[bʊɽgu:]	[bʊɽgʷu:]	[bʊɽgʷu:]	[bʊɽgʷu:]
244	indigo	[ba:ba:]	[ba:ba:]	[ba:ba:]	[ba:ba:]	[ba:ba:]	[ba:ba:]
245	pepper	[bɐrkʷɐno:]	[bɐrkʷɐno:]	[bɐrkʷ no:]	[bɐrkʷɐno:]	[tʷɐŋka:]	[toʃ:i:]
246	spice	[ʧɪt:a:]	[ʧɪt:a:]	[ʧɪt:a:]	[ʧɪt:a:]	[ʧɪt:a:]	[ʧɪt:a:]
247	corn	[da:wa:]	[da:wa:]	[da:wa:]	[da:wa:]	[da:wa:]	[da:wa:]
248	potatoes	[dɐŋkɐli:]	[dɐŋkɐli:]	[dɐŋkɐli:]	[dɐŋkɐli:]	[kʷu:dɐkʷu:]	[dɐŋkɐli:]
249	date palm	[dɐbi:no:]	[dɐbi:no:]	[dɐbi:no:]	[dɐbi:no:]	[dɐbi:no:]	[dɐbi:no:]
250	yam	[do:ja:]	[do:ja:]	[do:ja:]	[do:ja:]	[do:ja:]	[do:ja:]
251	locust-bean tree	[do:ɽɐwa:]	[ɗo:ɽɐwa:]	[ɗo:ɽɐwa:]	[ɗo:ɽɐwa:	[ɗo:ɽɐwa:]	[ɗo:ɽɐw:a:]
252	dum palm	[gʷo:ɽuba:]	[gʷo:ɽuba:]	[gʷo:ɽuba:]	[gʷo:ɽɪba:]	[gʷo:ɽɪba:]	[gʷo:ɽuba]
253	coaco-yam	[gʷa:za:]	[gʷa:za:]	[gʷa:za:]	[wa:lɪhɐŋ]	[gʷa:za:]	[mɐkɐni:]
254	deleb palm	[gʲɪgʲɪɲja:]	[gʲɪgʲɪɲja:]	[gʲɪgʲɪɲja:]	[gʲɪgʲɪɲja:]	[gʲɪgʲɪɲja:]	[gʲɪgʲɪɲja:]
255	pea-nut	[gʲɐɗa:]	[gʲɐɗa:]	[gʷʊʤɪja:]	[gʲɐɗa:]	dʷʊʤɪja:	[dʷʊʤɪja:]
256	tiger nut	[gʷurʤɪja:]	[gʷʊʤ:ɪja:]	[ʔɐɽkʷ'ʊɽɪga:]	[gʷʊʤɪja:]	[ʃa:ɓulta:]	[kʷ'ʊɽɪga:]
257	paw paw	[gʷɐnda:]	[gʷɐnda:]	[gʷɐnda:]	[gʷɐnda:]	[gʷɐd:a:]	[gʷɐnda:]
258	millet	[gʲe:ɽo:]	[gʲe:ɽo:]	[hɐɬs'i:]	[gʲe:ɽo:]	[gʲe:ɽo:]	[gʲe:ɽo:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
259	fig tree	[kʷu:ka:]	[kʷu:ka:]	[kʷu:ka:]	[kʷu:ka:]	[mʊɽna:]	[kʷu:ka:]
260	sheanut	[kɐɗe:]	[kɐɗɽɲja:]	[kɐɗe:]	[kɐɗɽɲja:]	[kɐɗe:]	[kɐɗɐɲja:]
261	beniseed	[no:me:]	[no:mi:]	[no:mi:]	[no:mi:]	[no:mi:]	[no:mi:]
262	cassava	[ɽo:gʷo:]	[ɽo:gʷo:]	[ɽo:gʷo:]	[ɽo:gʷo:]	[ɽo:gʷo:]	[ɽo:gʷo:]
263	tarmarind	[tś'a:mɪja:]	[ts'a:mɪja:]	[ts'a:mɪja:]	[ts'a:mɪja:]	[ts'a:mɪja:]	[ts'a:mɪja:]
264	sweet pepper	[tɐt:ta:sɐj]	[tɐt:a:sɐj]	[tɐt:a:sɐj]	[tɐt:a:sɐj]	[tɐt:a:sɐj]	[tɐt:a:sɐj]
265	sorrel	[ja:kʷʊwa:]	[ja:kʷʊwa:]	[ja:kʷʊwa:]	[ja:kʷʊwa:]	[su:ɽe:]	[ja:kʷʊwa:]
266	sisal	[ɽɐma:]	[ɽɐma:]	[ɽɐma:]	[ɽɐma:]	[ɽɐma:]	[ɽɐma:]
267	slave	[bɐɽʊndʒe:]	[bɐɽʊndʒe:]	[mɐhɐwʧi:]	[mɐhɐwʧi:]	[ba:wa:]	[bɐɽʊndʒe:]
268	son	[ɗa:]	[ɗa:]	[ɗa:]	[ɗa:]	[ɗa:]	[ɗa:]
269	younger brother	[k'ɐne:]	[k'ɐni:]	[k'ɐne:]	[k'ɐni:]	[k'ɐne:]	[k'ɐne:]
270	younger sister	[k'ɐŋwa:]	[k'ɐŋwa:]	[k'ɐŋwa:]	[k'ɐŋwa:]	[k'ɐwna:]	[k'ɐŋwa:]
271	king	[sɐɽkʲi:]	[sɐɽkʲi:]	[sɐɽkʲi:]	[sɐɽkʲi:]	[sɐɽkʲi:]	[sɐɽkʲi:]
272	daughter	[ʔʲa:]	[ʔʲa:]	[ʔʲa:]	[ʔʲa:]	[ɗɪja:]	[ɗɪja:]
273	last year	[ba:ɽa:]	[ba:ɽa:]	[ba:ɽa:]	[ba:ɽa:]	[ba:ɽa:]	[ba:ɽa:]
274	wet season	[da:mɪna:]	[da:mɪna:]	[da:mɪna:]	[da:mɪna:]	[da:mɪna:]	[da:mɪna:]

No.	Gloss.	Kn.	B.	D,	Z.	S.	Kt
275	tomorrow	[gʷo:be:]	[gʷo:be:]	[gʷo:be:]	[gʷo:be:]	[gʷo:be:]	[gʷo:be:]
276	third-day	[ga:ta:]	[ga:ta:]	[ga:ta:]	[ga:ta:]	[ga:ta:]	[ga:ta:]
277	harmattan	[huntu:ɾu:]	[huntu:ɾu:]	[ɗa:ɾi:]	[huntu:ɾu:]	[ɗa:ɾi:]	[sɐɲji:]
278	yesterday	[ʤɪja:ʔ]	[ʤɪja:ʔ]	[ʤɪja:ʔ]	[ʤɪja:ʔ]	[ʤɪja:ʔ]	[ʤɪja:ʔ]
279	rainy season	[mɐɾka:	[mɐɾka:]	[mɐɾka:]	[mɐɾka:]	[mɐɾka:]	[mɐɾka:]
280	morning	[sa:ɸe:	[sa:ɸe:]	[sa:ɸe:]	[sa:ɸe:]	[sʷa:he:]	[sʷa:he:]
281	wooden vessel	[ʔɐkʷʊʃi:	[ʔɐkʷɐʃi:]	[ʔɐkʷʊhi:]	[ʔɐkʷʊʃi:]	[ʔɐkʷʊʃi:]	[ʔɐkʷʊʃi:]
282	thread	[zɐɾɐ:	[zɐɾɐ:]	[zɐɾɐ:]	[zɐɾɐ:]	[zɐɾɐ:]	[zɐɾɐ:]
283	chalk	[ʔɐl:i:	[ʔɐl:i:]	[ʔɐl:i:]	[ʔɐl:i:]	[ʔɐl:i:]	[ʔɐl:i:]
284	matchet	[ʔɐd:a:	[ʔɐd:a:]	[ʔɐd:a:]	[ʔɐd:a:]	[ʔɐd:a:]	[ʔɐd:a:]
285	bow	[bɐka:	[bɐka:]	[bɐka:]	[bɐka:]	[bɐka:]	[bɐka:]
286	spring	[bɐzɐɾa:	[bɐzɐɾa:]	[bɐzɐɾa:]	[bɐzɐɾa:]	[bɐzɐɾa:]	[bɐzɐɾa:]
287	loincloth	[bɐnte:	[bɐnte:]	[bɐnte:]	[bɐnte:]	[bɐ́ʧe:]	[bɐnte:]
288	recepticle	[bɐt:a:	[bɐt:a:]	[bɐt:a:]	[bɐt:a:]	[bɐt:a:]	[bɐt:a:]
289	iron rod	[ɗembɪda:	[ɗembɪda:]	[ɗembɪda:]	[ɗembɪda:]	[ɗem:ɐgʷʊɾʤi:]	[ɗembɪda:]
290	tray	[ɸɐjɸɐj]	[ɸɐjɸɐji:]	[hʷɐjhʷɐj]	[ɸɐjɸɐj]	[hʷɐjhʷɐj]	[hʷɐjhʷɐj]
291	hoe	[ɸɐtɐɲja:]	[ɸɐɾtɐɲja:]	[hʷɐɾtɐɲja:]		[kʷɐsa:]	[hɐjwa:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt
292	blanket	[gʷɐ̯do:]	[gʷɐ̯do:]	[gʷɐ̯do:]	[gʷɐ̯do:]	[gʷɐ̯do:]	[gʷɐ̯do:]
293	pad	[gɐm:o:]	[gɐm:o:]	[gɐm:o:]	[gɐm:o:]	[gɐŋwo:]	[gɐm:o:]
294	cap	[ɸa:tuma:]	[ɸa:tuma:]	[ɸa:tuma:]	[ɸa:tuma:]	[hɐɓɐlkɐda:]	[hɐbɐlkɐda:]
295	second day	[ʤi:bi:]	[ʤi:bi:]	[ʤi:bi:]	[ʤi:bi:]	[ʤi:bi:]	[ʤi:bi:]
296	calabash	[kʷ'ɐ̯ɾja:]	[kʷ'ɐ̯ɾja:]	[kʷ'ɐ̯ɾja:]	[kʷ'ɐ̯ɾja:]	[kʷ'ɐ̯ɾja:]	[kʷ'ɐ̯ɾja:]
297	arrow	[kʲɪbɪja:]	[kʲɪbɪja:]	[kʲɪbɪja:]	[kʲɪbɪja:]	[kʲɪbɪja:]	[kʲɪbɪja:]
298	ladle	[lu:dɐ̯ji:]	[lu:dɐ̯ji:]	[lʊd:ɐ̯j]	[lu:dɐ̯ji:]	[lʊd:ɐ̯j]	[lʊd:e:]
299	sickle	[lɐwʤe:]	[lɐwʤe:]	[lɐwʤe:]	[lɐwʤe:]	[lɐwʤe:]	[lɐwʤe:]
300	basket	[le:ɸe:]	[le:ɸe:]	[le:ɸe:]	[le:ɸe:]	[le:he:]	[le:he:]
301	reins	[lɪnza:mi:]	[lɪnza:mi:]	[lɪʤ:a:mi:]	[lɪnza:mi:]	[lɪz:a:mi:]	[lɪz:a:mi:]
302	swizzle stick	[mɐbʊɾgʲi:]	[mɐbʊɾgʲi:]	[mɐbʊɾgʲi:]	[mɐbʊɾgʲi:]	[mɐbʊɾkaːkʲi:]	[mɐbʊɾgʲi:]
303	plough	[hu:ɗa:]	[hu:ɗa:]	[hu:ɗa:]	[hu:ɗa:]	[hu:ɗa:]	[hu:ɗa:]
304	spear	[ma:ʃi:]	[ma:ʃi:]	[ma:ɦi:]	[ma:ʃi:]	[ma:ʃi:]	[ma:ʃi:]
305	hat	[mɐlɸa:]	[mɐlɸa:]	[mɐlhʷa:]	[mɐlɸa:]	[mɐlhʷa:]	[gʷʊɾʊŋhʷa:]
306	skirt	[mʊkʷʊɾu:]	[ɸa:ta:ɾi:]	[ɗento:ɸi:]	[ɗento:ɸi:]	[ɗeŋkʷɐ̯ŋkʷɐ̯ɗo:]	[mʊkʷʊɾu:]
307	bier	[mɐkɐɾa:]	[ʔɐ̯mʊku:]	[mɐkɐɾa:]	[mɐkɐɾa:]	[mɐkɐɾa:]	[mɐ kɐɾa:]
308	ginning stone	[mɐgʷʊɾʤi:]	[mɐgʷʊɾʤi:]	[mɐgʷʊɾʤi:]	[mɐgʷʊɾʤi:]	[mɐgʷʊɾʤi:]	[mɐgʷʊɾʤi:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
309	slaugh	[ma:ɽa:]	[ma:ɽa:]	[ma:ɽa:]	[ma:ɽa:]	[ma:ɽa:]	[ma:ɽa:]
310	pot	[tʊk^{W}ʊɲja:]	[tʊk^{W}ʊɲja:]	[tʊk^{W}ʊɲja:]	[tʊk^{W}ʊɲja:]	[tʊk^{W}ʊɲja:]	[tʊk^{W}ʊɲja:]
311	sword	[tɐk^{W}o:bi:]	[tɐk^{W}ɾbi:]	[tɐk^{W}o:bi:]	[tɐk^{W}o:bi:]	[tɐk^{W}o:bi:]	[tɐk^{W}o:bi:]
312	shoe	[ta:kɐlmi:]	[ta:kɐlmi:]	[ta:kɐlmi:]	[ta:kɐlmi:]	[ta:kɐlmi:]	[ta:kɐlmi:]
313	trap	[tɐrk^{W}o:]	[tɐɽk^{W}o:]	[tɐɽk^{W}o:]	[tɐrk^{W}o:]	[g^{W}u:ɽu:]	[tɐɽk^{W}o:]
314	knife	[wʊk'a:]	[wʊk'a:]	[wʊk'a:]	[wʊk'a:]	[jʊk'a:]	[wʊk'a:]
315	trousers	[wɐndo:]	[wɐndo:]	[wɐndo:]	[wɐndo:]	[wɐndo:]	[wɐndo:]
316	porridge	[hʊɽa:]	[hʊɽa:]	[hʊɽa:]	[hʊɽa:]	[dɐwo:]	[dɐwo:]
317	milk	[mɐdɐra:]	[mɐdɐɽa:]	[mɐdɐɽa:]	[mɐdɐra:]	[mɐdɐɽa:]	[mɐdɐɽa:]
318	cake	[wɐjna:]	[ma:sa:]	[wɐjna:]	[wɐjna:]	[ma:sa:]	[ma:sa:]
319	sour milk	[no:no:]	[no:no:]	[no:no:]	[no:no:]	[no:no:]	[no:no:]
320	food	[tʊwo:]	[tʊwo:]	[tʊwo:]	[tʊwo:]	[tʊwo:]	[tʊwo:]
321	eczema	[kɪɽʧi:]	[kɪɽʧi:]	[kɪɽʧi:]	[ɓɐɽu:]	[gɐɽʤe:]	[bu:ʃɪja:]
322	pus [1]	[di:wa:]	[di:wa:]	[mʊgʊɲja:]	[di:wa:]	[ɽʊwa:]	[di:wa:]
323	T.B.	[hʊka:]	[hʊka:]	[hʊka:]	[hʊka:]	[t^{W}a:ɽi:]	[hʊka:]
324	deaf	[k^{W}ʊɽma:]	[k^{W}ʊɽma:]	[k^{W}ʊɽma:]	[k^{W}ʊɽma:]	[k^{W}ʊɽma:]	[k^{W}ʊɽma:]

1. [mʊgʊɲja:] seems to be more common at least in Zariya town.

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
325	madness	[hɐwka:]	[hɐwka:]	[hɐwka:]	[hɐwka:]	[hɐwka:]	[hɐwka:]
326	goitre	[ma:k$^{w'}$o:k$^{w'}$o:]	[ma;k$^{w'}$o:k$^{w'}$o:]	[ma:k$^{w'}$o:k$^{w'}$o:]		[mɑ:k$^{w'}$o:k$^{w'}$o:]	[ma:k$^{w'}$o:k$^{w'}$o:]
327	ringworm	[mɐk^{j}e:ɽo:]	[mɐk^{j}e:ɽo:]	[mɐk^{j}e:ɽo:]	[m k^{j} ŋk^{j} ɽo:]	[mɐk^{j}e:ɽo:]	[mɐk^{j}e:ɽo:]
328	blind	[mɐka:ho:]	[mɐka:ho:]	[mɐka:ho:]	[mɐka:ho:]	[mɐka:ho:]	[mɐka:ho:]
329	meningitis	[sɐŋk'ɐɽɐw]	[s ŋk'ɐɽɐw]	[sɐŋk'ɐɽɐw]	[s ŋk'ɐɽɐw]	[s ŋk'ɐɽɐw]	[sɐŋk'ɐɽɐw]
330	measles	[k^{j}'ɐ nda:]	[ʃɐrtɯwa:]	[k^{j}'ɐ nda:]	[k^{j}'ɐ nda:]	[gɐjda:]	[k^{j}'ɐ nda:]
331	jaundice	[ʃa:wɐɽa:]	[ʃa:wɐɽa:]	[ʃa:wɐɽa:]	[ʃa:wɐɽa:]	[ʃa:wɐɽa:]	[bɐjɐma:]
332	cough	[ta:ɽi:]	[ta:ɽi:]	[ta:ɽi:]	[ta:ɽi:]	[t^{w}a:ɽi:]	[ta:ɽi:]
333	syphilis	[tɯndʒe:ɽe:]	[tɯndʒe:ɽe:]	[tɯndʒe:ɽe:]	[tɯndʒe:ɽe:]	[tɯndʒe:ɽe:]	[tɯndʒe:ɽe:]
334	elephantisis	[tɯndʊ:mi:]	[tɯndʊrmi:]	[tɯndʊ:mi:]	[tɯndʊ:mi:]	[tɯndʊ:mi:]	[tɯndʊ:mi:]
335	bilharzia	[ts'ɐg^{j}ɪja:]	[ts'ɐg^{j}ɪja:]	[ts'ɐg^{j}ɪja:]	[ts'ɐg^{j}ɪja:]	[bɪlha:zɪja:]	[ts'ɐg^{j}ɪja:]
336	regtángular hut	[ʔɐdɐda:]	[ʔɐdɐda:]	[ʔɐdɐda:]	[tɐΦɾr ΦɐɽaΦ:]	[ʔɐdɐda:]	[ʃɪg^{j}ɪh^{w}a:]
337	hut	[bʊk:a:]	[bʊk:a:]	[bʊk:a:]	[bʊk:a:]	[bʊk:a:]	[bʊk:a:]
338	room	[da:k^{j}i:]	[da:k^{j}i:]	[da:k^{j}i:]	[da:k^{j}i:]	[da:k^{j}i:]	[da:k^{j}i:]
339	porch	[zɐwɽe:]	[zɐwɽe:]	[zɐwɽe:]	[zɐwɽe:]	[zɐmɽe:]	[zɐmɽe:]
340	ulcer	[g^{j}ɐmbo:]	[g^{j}ɐmbo:]	[k^{w}ɯɽdʒi:]	[g^{j}ɐmbo:]	[g^{j}ɐmbo:]	[g^{j}ɐmbo:]
341	cave	[k^{w}o:g^{w}o:]	[k^{w}o:g^{w}o:]	[k^{w}o:g^{w}o:]	[k^{w}o:g^{w}o:]	[k^{w}o:g^{w}o:]	[k^{w}o:g^{w}o:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
342	oven	[mʊɽhu:]	[mʊɽhu:]	[mʊɽhu:]	[mʊɽhu:]	[mʊɽhu:]	[mʊɽhu:]
343	well	[ɽi:ʤɪja:]	[ɽi:ʤɪja:]	[ɽi:ʤɪja:]	[ɽi:ʤɪja:]	[ɽi:ʤɪja:]	[ɽi:ʤɪja:]
344	cesspit	[ʃɐd:a:]	[ʃɐd:a:]	[ʃɐd:a:]	[ʃɐd:a:]	[mɐsɐj]	[mɐsɐj]
345	push	[ʔɐŋgɐza:]	[ʔɐŋgɐza:]	[tu:ɽa:]	[ʔɪŋg^{j}ɪza:]	[dʊŋg^{w}ʊza:]	[ʔɐŋgɐza:]
346	sew	[dɪŋk^{j}i:]	[dɪŋk^{j}i:]	[dɪŋk^{j}i:]	[dɪŋk^{j}i:]	[dɪŋk^{j}i:]	[dɪŋk^{j}i:]
347	cook	[dɐΦa:]	[dɐΦa:]	[dɐh^{w}a:]	[dɐΦa:]	[dɐh^{w}a:]	[dɐh^{w}a:]
348	break	[kɐɽja:]	[kɐɽja:]	[kɐɽja:]	[kɐɽja:]	[kɐɽja:]	[kɐɽja:]
349	roast	[k$^{j'}$a:Φa:]	[k^{j}a:Φa:]	[kɐΦe:]	[k$^{j'}$a:Φa:]	[bɐŋk'ɐɽe:]	[kɐh^{w}a:]
350	fry	[so:ja:]	[so:ja:]	[so:ja:]	[so:ja:]	[so:ja:]	[so:ja:]
351	trample	[ta:ka:]	[ta:ka:]	[ta:ka:]	[ta:ka:]	[ta:ka:]	[ta:ka:]
352	chest	[k'^{j}ɪrʤi:]	[k'^{j}ɪrʤi:]	[k'^{j}ɪrʤi:]	[k'^{j}ɪrʤi:]	[gɐba:]	[gɐba:]
253	thigh	[ʧɪŋja:]	[ʧɪŋja:]	[ʧɪŋja:]	[ʧɪŋja:]	[k t t: ɽe:]	[ʧɪŋja:]
354	heel	[dʊd:ʊg^{j}e:]	[dʊdu:nɪja:]	[dɪndi:nɪja:]	[dʊd:ʊg^{j}e:]	[dʊd:ʊg^{j}e:]	[dʊd:ʊg^{j}e:]
355	forehead	[g^{w}o:ʃi:]	[g^{w}o:ʃi:]	[g^{w}o:hi:]	[g^{w}o:ʃi:]	[g^{w}o:ʃi:]	[g^{w}o:ʃi:]
356	shoulder	[ka:Φɐɗaˑ]	[ka:Φɐɗaˑ]	[ka:Φɐɗaˑ]	[ka:Φɐɗaˑ]	[ka:h^{w}ɐɗaˑ]	[ka:h^{w}ɐɗaˑ]
357	amblical cord	[ʧi:bɪja:]	[ʧi:bɪja:]	[ʧi:bɪja:]	[ʧi:bɪja:]	[ʧi:bɪja:]	[ʧi:bɪja:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
358	darkness	[ʊʊhu:]	[ʊʊhu:]	[ʊʊhu:]	[ʊʊhu:]	[ʊʊhu:]	[ʊʊhu:]
359	robery	[ɸɐʃi:]	[ɸɐʃi:]	[h^{w}ɐhi:]	[ɸɐʃi:]	[$k^{w'}$a:ʧe:]	[h^{w}ɐʃi:]
360	hurricane	[g^{w}u:g^{w}ʊwa:]	[g^{w}u:g^{w}ʊwa:]	[g^{w}u:gʊwa:]	[g^{w}o:gʊwa:]	[g^{w}u:g^{w}ʊwa:]	[g^{w}u:g^{w}ʊwa:]
361	snail-shell	[kɐtɐntɐŋwa:]	[k^{w}o:ɗi:]	[k^{w}ɐta:]	[kɐtɐntɐŋwa:]	[ʔɐlk^{w}ato:]	[ɽɐŋwa:]
362	underneath	[k'ɐrk'ɐʃi:]	[k'ɐrk'ɐʃi:]	[k'ɐlk'ɐhi:]	[k'ɐrk'ɐʃi:]	[k'ɐlk'ɐʃi:]	[k'ɐlk'ɐʃi:]
363	base/bottom	[g^{j}ɪndi:]	[g^{j}ɪndi:]	[g^{j}ɪndi:]	[g^{j}ɪndi:]	[g^{w}u:tsu:]	[g^{j}ɪndi:]
364	beer	[g^{j}ɪja:]	[g^{j}ɪja:]	[g^{j}ɪja:]	[g^{j}ɪja:]	[g^{j}ɪja:]	[g^{j}ɪja:]
365	princess	[g^{j}ɪmbɪja:]	[g^{j}ɪmbɪja:]	[g^{j}ɪmbɪja:]	[g^{j}ɪmbɪja:]	[g^{j}ɪmbɪja:]	[g^{j}ɪmbɪja:]
366	embers	[gɐwʃi:]	[gɐwɐji:]	[gɐwɐji:]	[gɐwɐji:]	[gɐwʃi:]	[gɐwɐji:]
367	anger	[ɸɪʃi:]	[hʊʃi:]	[hʊhi:]	[ɸɪʃi:]	[hʊʃi:]	[hʊʃi:]
368	love	[k'ɐwna:]	[k'ɐwna:]	[k'ɐwna:]	[k'ɐwna:]	[k'ɐmna:]	[k'ɐmna:]
369	tear(n)	[hɐwa:je:]	[hɐwa:je:]	[hɐwa:je:]	[hɐwa:je:]	[hɐwa:je:]	[hɐwa:je:]
370	hay	[ʔɪŋg^{j}ɪɽɪʧi:]	[ʔɪŋg^{j}ɪɽɪʧi:]	[ʧɪja:wa:]	[bɐɽo!]	[tɐt:ɐka:]	[tɐt:ɐka:]
371	tin-ore	[k^{w}ʊza:]	[k^{w}ʊza:]	[k^{w}ʊza:]	[k^{w}ʊza:]	[k^{w}ʊza:]	[k^{w}ʊza:]
372	valley	[k^{w}ɐɽi:]	[k^{w}ɐɽi:]	[k^{w}ɐɽi:]	[k^{w}ɐɽi:]	[k^{w}ɐɽe:]	[k^{w}ɐɽi:]
373	broken pot	[kɐsk^{w}o:]	[kɐsk^{w}o:]	[kɐsk^{w}o:]	[kɐsk^{w}o:]	[kɐsk^{w}o:]	[kɐsk^{w}o:]

No.	Gloss	Kn.	B.	D.	Z.	S.	Kt.
374 [1]	soup stuff	[kɐrkɐʃi:]	[kɐrkɐʃi:]	[jo:ʤo:]	[kɐrkɐʃi:]	[kɐlkɐʃi:]	[jɐwʤo:]
375	thorn	[k'ɐja:]	[k'ɐja:]	[k'ɐja:]	[k'ɐja:]	[k'ɐja:]	[k'ɐja:]
376	horn	[k'ɐho:]	[k'ɐho:]	[k'ɐho:]	[k'ɐho:]	[k'ɐho:]	[k'ɐho:]
377	hoof	[k^{w}o:ɸɐto:]	[k^{w}ɐɸɐto:]	[k^{w}o:h^{w}ɐto:]	[k^{w}o:ɸɐto:]	[k^{w}o:h^{w}ɐto:]	[k^{w}o:h^{w}ɐto:]
378	hunter	[mɐhɐrbi:]	[mɐhɐrbi:]	[mɐhɐlbi:]	[mɐhɐrbi:]	[mɐhɐlbi:]	[mɐhɐlbi:]
379	dream	[mɐɸɐrk^{j}i:]	[mɐɸɐrk^{j}i:]	[mɐh^{w}ɐlk^{j}i:]	[mɐɸɐrk^{j}i:]	[mɐh^{w}ɐlk^{j}i:]	[mɐhɐ^{w}lk^{j}i:]
380	screen	[tʊɸa:nɪja:]	[tʊɸa:nɪja:]	[tʊɸa:nɪja:]	[tʊɸa:nɪja:]	[ʔɐskʊn:ɪja:]	[tʊh^{w}a:nɪja:]
381	laterite	[mɐɽmɐɽa:]	[mɐɽmɐɽa:]	[mɐɽmɐɽa:]	[mɐɽmɐɽa:]	[du: ʧ'i:]	[mɐɽmɐɽa:]
382	mucus	[ma:ʤɪna:]	[ma:ʤɪna:]	[ma:ʤɪna:]	[ma:ʤɪna:]	[ma:ʤɪna:]	[ma:ʤɪna:]
383	fore finger	[mɐnu:nɪja:]	[mɐnu:nɪja:]	[mɐnu:nɪja:]	[mɐnu:nɪja:]	[mɐnu:nɪja:]	[ʔɐli:]
384	stinginess	[mɐk$^{w'}$o:]	[mɐk$^{w'}$o:]	[mɐk$^{w'}$o:]	[mɐk$^{w'}$o:]	[tɐmɽi:]	[mɐk$^{w'}$o:]
385	fetish	[ts'a:ɸi:]	[ts'a:ɸi:]	[ts'a:ɸi:]	[ts'a:ɸi:]	[ts'a:hi:]	[ts'a:hi:]
386	tale	[ta:ʦ'u:nɪja:]	[ta:ts'u:nɪja:]	[ta:tsu:nɪja:]	[ta:ts'u:nɪja:]	[ga:t na:]	[ga:t na:]
387	jump	[ts'ɐl:e:]	[ts'ɐl:e:]	[ts'ɐl:e:]	[tsɐl:e:]	[tʊma:]	[ts'ɐl:e:]

1. This is a wild plant; Soup made from this is extremely mucoid.

No.	Gloss.	Kn.	B.	D.	Z.	S.	Kt.
388	moon	[wɐta:]	[wɐta:]	[wɐta:]	[wɐta:]	[wɐta:]	[wɐta:]
389	gruel [1]	[k^{w}ʊnʊŋza:$k^{j'}$i:]	[ʔɐɾe:ɾe:]	[k^{w}ʊnʊŋza:$k^{j'}$i:]	[k^{w}ʊnʊŋza:$k^{j'}$i:]	[k^{w}ʊnʊŋza:$k^{j'}$i:]	[ʔɐɾe:ɾe:]
390	sweat	[zʊΦa:]	[zʊΦa:]	[zʊΦa:]	[g^{w}ʊmi:]	[zʊh^{w}a:]	[zʊh^{w}a:]
391	saliva	[ja:wu:]	[ja:wu:]	[ja:wu:]	[ja:wu:]	[mɪjɐw]	[mɪjɐw]
392	wooden box	[ʔɐ$k^{w}_{ɐ}$ ʃa:]	[ʔɐ$k^{w}_{ɐ}$sa:]	[$k^{w'}$o:ʃɪja:]	[ʔɐ$k^{w}_{ɐ}$ sa:]	[$k^{w'}$o:ʃɪjeɾ$g^{w}_{ɐ}$ do:]	[ʔɐ$k^{w}_{ɐ}$ sa:]
393	pigeon [2]	[hɐzbɪja:]	[hɐzbɪja:]	[zʊŋk^{w}ʊj]	[hɐɾbɪja:]	[gu:tu:]	[hɐzbɪja:]
394	thickness	[g^{w}ʊjβi:]	[g^{w}ʊjβi:]	[g^{w}ʊjβi:]	[kɐwɾi:]	[g^{w}ʊjβi:]	[kɐbɾi:]
395	bravery	[ʤa:ɾʊmta:]	[ʤa:ɾʊmta:]	[ʤa:ɾʊmta:]	[ʤa:ɾʊmta:]	[za:ɾʊmta:]	[za:ɾʊmta:]
396	exclude	[ʧo:g^{j}e:]	[ʧo:g^{j}e:]	[ʧo:g^{j}e:]	[ʧo:g^{j}e:]	[to:g^{j}e:]	[to:g^{j}e:]
397	cold	[mɐʃɐʃ:ɐɾa:]	[mɐʃɐʃ:ɐɾa:]	[mɐʃɐʃ:ɐɾa:]	[mɐʃɐʃ:ɐɾa:]	[mɐsɐs:ɐɾa:]	[mɐsɐs:ɐɾa:]
398	gift	[$k^{j}_{ɐ}$wta:]	[$k^{j}_{ɐ}$wta:]	[$k^{j}_{ɐ}$wta:]	[$k^{j}_{ɐ}$wta:]	[$k^{j}_{ɐ}$wta:]	[$k^{j}_{ɐ}$wta:]
399	okra	[k^{w}ʊbe:wa:]	[k^{w}ʊbe:wa:]	[k^{w}ʊbe:wa:]	[k^{w}ʊbe:wa:]	[g^{w}ʊɾo:]	[k^{w}ʊbe:wa:]
400	finger nail	[ΦɐrʧeːJ]	[ΦɐrʧeːJ]	[ΦɐlʧeːJ]	[ΦɐrʧeːJ]	[ja:ts'a:]	[$h^{w}_{ɐ}$/ʧeːJ]

1. It is a sweet thin gruel taken as a refreshment and sometimes taken with meat, cassava or bread as a light meal.

2. It has a red ring round the eyes - It is generally wild.

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