CHAPTER ONE

Introduction

1.0 Overview:

The term Daju or Dadjo in French is the most widely used name the Daju people use it to refer to themselves linguistically "bike" means Daju in Daju language. Historically the name comes from Ahmad el-Daj as they believe. The Daju People are a group of several distinct ethnicities speaking related languages living on both sides of the Chad-Sudan border and in the Nuba Mountains. Separated by distance and speaking different dialects.

Daju people have come from the mountains of Fazoghli; South of Sennar and settled in a long belt stretching from South Kurdufan westward through Darfur and into Chad. It is assumed that, Daju came originally from the North of Africa, having been expelled from that part of Africa to Darfur. The traditional locations of the Daju were at one time the predominant race in central Darfur, the earliest known founders of a monarchy there, and that they were supplanted by the Tunjur about the sixteenth century and they came from the east and were joined in Darfur by the African Beygo from the South-east and that the Beygo borrowed the language of the Daju.

Another point of view, that Daju has lived for at least a century in the West. Their settlement ranged from Tagali to Wadai and tell stories that indicate they came from the East (e.g. Gebel Qedir). They first attained power during the fifteenth century in Darfur. From the rise of the Tungur until the present day their central point was in Darsila, and most likely the Kordofan colony originated there.

It is argued that the Daju tribe was originally from Darfur and Wadai and has been there since the beginning of recorded history. Some argued that the Daju were originally a riverain people living near Shendi; they were brought to Darfur by Ahmad Al-Daj who settled at Meeri in Marra mountain and then attacked the Furoge or Fertit and occupied their area. While Arkell (1951)

believes that the Daju came from the North. Balfour-Paul (1955) claims that the Daju are indigenous stock and owed their empire to the mastery of a group of immigrants of a higher culture. So, he believes that the immigrants came from the East.

1.1. Statements of the problem:

This research is an attempt to study the phonological system of Daju language in terms of phonetic inventory, arrangement of sounds and syllabic patterns. The study is then basically concerned with the description of Daju sounds in terms of place and manner of articulation and voicing. In addition to the study gives insight into how Daju sounds are combined together along with coverage of the varying syllabic patterns that Daju phonology exhibits. A common believe is that Daju speakers speak English easily when they are exposed to it and the researcher would like to prove or disprove this assumption through the phonological aspects of both languages.

1.2. Questions of the Study:

The research problem can be handled in the light of the following questions.

1. What are the phonemes of Daju language?
2. What possible arrangement that Daju phonology exhibits?
3. What are the syllabic patterns of Daju morphemes?

1.3. Hypotheses of the Study:

The present study is conducted under the following hypotheses;

1. The consonants and vowels of Daju language are universal
2. The distribution and co-occurrence of Daju sounds is the same as the English one.
3. The syllabic structure of Daju Language is unique.

1.1. Objectives of the Study:

The main objectives of the study are to:

1. Identify the consonants and vowels of Daju language.
2. Describe the distribution and co-occurrence of Daju sounds
3. Identify the syllabic structure of Daju Language

1.4. Significance of the study:

This study is significant because it provides and contributes to documentation of Daju language and brings it to the front. It is one the first systematic study of the phonology of Daju; according to the researcher's limited knowledge; hence it is expected to provide a comprehensive phonetic reference and break the ground for further studies on Daju language.

1.5. Delimitation of the Study:

This thesis is limited to the study of Daju language phonology, which is spoken by Daju tribe that lives in Southern Kordofan state, specifically in Daju area of Lagawa. It seeks insights of phonological, phonotactic patterns. It examines relevance of new theories of phonology to language syllabification. The language is approximately spoken by 21000 people in academic years (2012-2014).

1.6. Methodology of the study:

This thesis is followed the analytical descriptive approach. The data collection via collected from primary resources and recording words and speech from native speakers of Daju lagawa. In addition to this data analyses from validity and reliability to identify the idiolects and dialects; by using special program called key man.

CHAPTER TWO
LITERATURE REVIEW

2.0 Historical Background of the Daju language:

Evidence for the history of the Sudan is extremely limited before the 1800s with the major exception of the Nile Valley. People know quite a lot about the Kerma, Napata, Meroe and Nile Nubian civilizations although the historians do not understand Meroitic and are not sure of its relationship to other present-day language groups of the Sudan or Africa. Reliable scholars have rejected the possibility of Meroitic being related to Afro-asiatic languages; it is nearest to the Beja areas. Recent attempts to review the situation incline towards it being part of Nilo-Saharan, but this is still unproven. People know of political states in Aksum in Northern Ethiopia, in Kanem and Bornu in eastern Nigeria; of the Funj state in the Blue Nile and the Daju, Tunjur and Fur states in Darfur as well as the relatively recent Kingdom of Taqali in the Rashad area of the Nubian Mountains. appendix (1)

Thelwall (1981:181) classifies them into members of two or perhaps three language families Nilo-Saharan and Kordofanian sub-family of the Niger-Kordofanian family. In addition to there is Arabic which could not have been spoken in the area prior to the Muslim invasions of Egypt in the 700s the first century; and there are also speakers of Fulani and some other West African languages. All the other languages of the Mountains well predate that period and in most cases were spoken there from time immemorial.

Thelwall (1983:219-31) Eastern Daju Shatt in the Shatt Hills southwest of Kadugli, Liguria in the Nubian Hills, they are both have roots dating back as far as 100 BC, and southern Darfur was the center of an established Daju state as early as 1200 AD. Sometime after 1200/ AD, the Daju were displaced by the Tunjur and again later by the Fur. Many Daju moved eastward well into the Nubian Mountains, while others moved westward to Chad. They establishment of the Dar Daju Sila group; in the early 1600's according to dates founding in a

manuscript by the French commander Colonel Largeau, (1913) during the French invasion of Dar Sila. Daju moves into Chad was said to be started by Ahmad El-Daj, and eventually extended between two countries Sudan and Chad. western Daju; Daju Mongo in Dar Daju; Sila in Chad, Daju Nyala in Darfur, Beygo in southern Darfur Njalgulgule in south Sudan on the Sopo River. According to the geographical and numbering of spoken, Daju people exist in several distinct pockets in Sudan and Chad. Beygo lives in southern Darfur in Sudan southeast of Nyala in the hills east of Kube the numbering is 850 (1978).Dar Daju Daju lives in the Guera Region of Chad they speak the Daju Mongo language, their numbering 34,000 (1993).Darfur Daju lives in southern Darfur in Daju Hills near Nyala, Marrah Mountains and Lagawa Dar Sila Daju living in southern Chad in the ouaddai Region their numbering is 63,100 (2000) they speak the Sila language. Njalgulgule lives in one village in southern Sudan near the confluence of the Sopo River and Boro River, they speak the Njalgulgule language their numbering is 900, (1977). There are two groups of Daju live in Nubian Hills: Liguri live in the central Nubian Hills they speak the Liguri and Supori language, the numbering is 2,000 (1971).Shatt lives in the Nubian Hills southeast of the Kadugli, they speak Shatt languages the numbering is 15,000 (1984). The Shatt and Liguri are now well inside the Nubian Mountains and north-east of Kadugli have been separated from the rest of the Daju for a long time perhaps as much as 2000 years.

Thelwall (1981:168) refers to a now extinct Daju language of Bego which he classifies as being part of Nyala. The Daju of Dar el-Kabira and Lagawa are much more closely related linguistically to the Nyala and then to the Dar Sila Daju. This makes the linguists think that there were two periods of Daju movement toward east, first by the Shatt and Liguri and second and perhaps related to the expansion and dominance by the South Darfur Daju, by the Lagawa Daju. The Daju people reside in the Guera region of the country of

Chad and have a population of approximately 50,000 while the total number of Daju in Chad and Sudan reaches approximately 350,000.

According to Gordon's (2005) Daju population figures are based upon the 1993 census and on data from SIL Chad.

Henderson (1932:2) compares the wordlists given by MacMichael (1922:181) with those of MacDiarmid (1931:156) and Macintosh (1922:176) it would appear to the layman that the Kordofan Dialect is more closely allied to Darfur than to Darsila.

The Daju speaking people and tribes are scattered over a large area between Kordofan and Abu-Telfan. We know of at least nine settlements where speakers of Daju or a related language or Dialect form their own communities' independent from each other. According to their oral traditions and historical records the Daju have originally formed one single community with a language continuum. Judging from the partly, great resemblances. if not identity of some of the Daju speech forms in lexis and morphology such a period of co-existence is not likely to lie back more than a few centuries. For the Daju of Darfur and Wadai it is generally accepted that their common origin was Central Darfur, probably the Southern slopes of Gebel Marra. About the sixteen century they were replaced by Tunjur. There for the Daju left Gebel Marra to different places in both Sudan and Chad. Some of them went to East and South East and settled in Nyala-Fashir ,Kordofan and Bahr Elghazal basin and the other left to Chad where they have settled in Darsila at districts of Goz-Beida and Um-Dum and some of them settled in Dar-Daju at districts of Mongo and Abu-Telfan.

Stevenson (1964:94) stated that the Daju were once rulers in Darfur, but now they have been scattered into several different localities. The Daju properly consists of a number of dialects or closely related languages. Stevenson classifies them as four groups geographically:

1-Darfur Daju and Daju Nyala relate to Beygo

2-The Bahar Al-Ghazal,the Nyalgulgule, north-east of Raja.

3- Sudan's Western frontier in Chad, Darsila and Dar Daju.

4- Nuba Mountains which is represented by speakers in three areas as follow:

. The Daju Hills in Lagawa and the areas around this is in western Kordofa.

. The Liguri and Saburi Hills, it is north-east of Kadugli.

. The Shatt Hills has south-west of Kadugli.

2.1 Location of the Daju Lagawa language:

According to Alzain in a lecture in university of Kordofan on 22.3.2013 Lagawa or 'lawa' means suitable land for residence. The name used by the speakers of the language is '*pɪkke*'. Lagawa language is an Eastern Sudanic language of Nilo-Saharan. The language and dialects of the Daju group are spoken in Kordofan Western, Southern and Northern, Sothern Darfur, on the Sopo river Bahr Al-Ghazal Basin and in Wadai, and Chad. Language groups live in the area about 135 kilometers west of Kadugli. The language is spoken by about 21,000 people.

According to Abbakar (2000:23) there are six groups with lagawa connection in this area. The language and dialects of lagawa group are spoken in lagawa area, Daju of Daju hills, Dar Al-Kabira, Warina, Selecce, Nyukuri and Tamanyik. And geographically the following main units are to be distinguished:

1. Western Kordofan; laggori of laggori hills north east of Kadugli:
   I. Laggori
   II.Sobori
   III.Tallaw
2. Shatt of Shatt hills south-west of Kadugli:
   I. Shatt Dammam
   II.Shatt Safia
   III.Shatt Absunun
   V.Shatt Traweng
   VI. Shatt Kululu

3. Northern Kordofan state:

I. Daju of Khor Taggat East of El-obeid

II. Daju of Kaskal South of El-Obeid

III. Daju of Mihila, Tablidya and Nawa Western of Al-rrahad these groups sometimes called Wadi-Alruseris. According to researcher's experience, Daju are settled in Kordofan; and their speaking is Arabic.

4. According to Thewall (1978:145), Southern Darfur and Bahar Al-gazal:

I. Daju of Daju hills north-east of Nyala, Marra Mountain.

II.Daju of Kas-Zalinje –Geneina area

III.Bayogo (Bego) South-east of Nyala

5. Nyalagulgulge or Njangulule the Sopo River and Ab-yay area:

I.Bahar Al-Gazal basin

6. Wadai:

I. Daju of Dar-sila districts of Goz Beida and umdam.

7. Daju of Dar Daju in Guera region of the country of Chad:

I. North of Mongo –Abu Talfan

2.2Language and Dialect of Daju:

The most significant new account of the relationships of all the languages in Africa has been made by the American Joseph Greenberg in a series of articles published first, after (1945) then collected and revised in a single volume published in (1955). The idea of a Nilo-Saharan (NiSa) phylum among African languages alongside Afro-Asiatic, Niger- Congo, and Khoisan was brought into existence by Greenberg (1963:10). On the basic of 161 lexical and 29 grammatical sound meaning similarities, he suggested genetic unity among 82 languages, which had been treated as 22 separate language units. The level of language units as presented in Tucker and Bryan (1956:231), Greenberg proposed some significant changes, most of which have been accepted and partly also substantiated in detailed studies:

(a) The inclusion of Mimi into the Maban group.

(b) The combination of Tucker and Bryan's 'Nilotic' and 'Nilo-Hamitic' into one group with three branches: Western, Eastern, and Southern Nilotic.

(c) The combination of Moru-Mangbetu and Bongo-Bagirmi into a Central Sudanic group. Greenberg's fusion of Gule and Koma into one group, however, has been revised. Bender (1996) suggests again two units although differently subdivided, According to the numbers of linguists as Tucker and Bryan (1956:169), cited word lists from Daju as [kəccıne] instead of 'donkey' in this case Mac Michael (1920:76) noted that Daju language is similar to the dialects of Nuba but, quotes only a few words of Daju as [kəccınē], means donkey in Daju language and [mɒrtɑnē] means horse in Daju language while [murtı or mordu] in Nuba language. The two words are equally inclusive and the grounds for suggesting a resemblance between Nubain and Daju are extremely slender.

Jungraithmayr (1981:277), believes that Daju language is spoken in isolated pocked by Daju people across a wide area of Sudan and Chad.

Thelwall (1981:168), refers to a now extinct Daju language of Beygo which he classifies as being part of Nyala. The Daju of Dar el-Kabira and Lagawa are much more closely related linguistically to the Nyala and then to the Dar Sila Daju. This makes the linguists think that there were two periods of Daju movement east, the first by the Shatt and Liguri and the second perhaps related to the expansion and dominance by the South Darfur Daju, by the Lagawa Daju. One of the more interesting aspects of Daju's system is the presence of gender, though in the pronoun system is fairly rare in the Eastern Sudanic languages. Tucker and Bryan (1966:14) note its existence specific which particular languages have gender.

Table(2.1)

The Language Groups of Tucker, Bryan (1956:231) and Greenberg (1963:13)

Tucker and Bryan (1956:231)		***Greenberg (1963:13)***	
1	*Songhai*	*1*	*Songha*
2	*Saharan*	*2*	*Saharan*
3	*Maban*	*3*	*Maban*
4	*Eastern Sudanic*	*4*	*Fur*
5	*Mimi*	*5*	*Koman*
6	*Maba group*	*6*	*Shari-Nile*
7	*Fur*	*A*	*Central Sudanic*
8	*Nubian group*	*1*	*Kunama*
9	*Daju group*	*2*	*Berta*
10	*Barea*	*B*	*Eastern Sudanic*
11	*Didinga-Murle group*	*1*	*Kuliak, Teuso*
12	*Tabi*	*2*	*Nubian group*
13	*Nyimang group*	*3*	*Nilotic*
14	*Temein group*	*4*	*Daju group*
15	*Nilotic*	*5*	*Ingassana (Jebel)*
16	*Nilo-Hamitic*	*6*	*Barea*
17	*Tama group*	*7*	*Temein, Teis-um-Danab*
18	*Teuso*	*8*	*Merarit, Tama, Sungor*
19	*Moru Mangbetu*	*9*	*Nyma, Afitti*
20	*Bongo-Bagirimi*	*20*	*Murle, logarim, (surmic)*

21	*Berta*		
22	*Kunama*		
23	*Gule*		
24	*Koma group*		

The core of Nilo-Saharan appears to be the Eastern Sudanic group, which includes the following families: Nubian, Nera, Jebel, Nymang, Temein, Tama, Daju, Surmic, and Nilotic. The internal relationships between these languages families must be better understood before any external relationships can be evaluated. For the present, Nilo-Saharan is best considered as a referential grouping, and not a language phylum or family.

2.3 The phonological and Morphological aspects:

Bender (2005:1) claims that Nilo-Saharan is being divided into six families: Songay, Saharan, Kuliak, Fur, Central Sudanic, and Eastern Sudanic. He further divides Eastern Sudanic into the *'En'* and *'Ek'* based on the first person singular independent pronouns having n or *k* that *En* and *Ek* groups. Daju is part of the *'En'* group along with Surma, Jebel, Temein, and Nilotic; while another group includes Nubian, Nera, Nyima and Tama. One of the features that are especially strong in the *'En'* group is the presence of *n*/*g* in the singular and plural affixes this division differs from Bender's (1989:151) earlier classification dividing Eastern Sudanic into four groups' base upon geographic proximity. The *'Ek'* group is based upon retention of the velar element *'k'* from the Nilo-Saharan first person singular pronoun. The *'En'* group represents an innovation of the element *'n'* in the first person singular pronoun. Bender (2005:1) notes that the inclusion of Temein in *'En'* is uncertain.

The subject pronouns follow Greenberg's generalizations (1966:109-111) that the first person singular pronoun contains /ɑ/ while the second person singular contains /i/ Greenberg notes that one of the common features in

Eastern Sudanic languages is the composition of their pronouns, especially the subject pronouns. The third person singular most often is formed utilizing [e] as its primary vowel. The feminine, then follows the pattern noted by Greenberg. The presence of /n/ in the first and second person singular as well as the presence of /k/ in the plural is widespread in all Daju language; Tucker and Bryan (1966:236). The /n/ and /k/ elements extend to possessive pronouns, demonstratives, and interrogative and determiner particles and are part of what Tucker and Bryan (1966:236) refer to as a 'substratum' known as the n/k opposition found in a variety of Eastern Sudanic languages.

Tucker and Bryan (1966:23) provide another illustration of shilluk in the same elements of n/k . Greenberg (1966:88) notes a nearly identical situation in the Eastern Sudanic language Shilluk. In Shilluk the n/k alternation is also used to show the distinction between singular and plural.

Tucker and Bryan (1966:238) present a very similar system in the Daju language Shatt and Liguri. Both languages have three-term demonstrative system, with the Shatt system having very similar roots to Dar Daju. Shatt, like Dar Daju divides demonstratives into two categories, demonstratives that function as pronouns and demonstratives that function as adjectives. The Shatt system retains the roots 'an' single and 'ak' plural in the three-term adjective system, but rather than lengthening the initial vowel in the distal, the Shatt system adds a lengthened /i/ suffix to the root.

Ehret (2001:54) reconstructs Greenberg's classification as a post-Creole with a Berber base, while some other scholars follow an old argument by Delafosse and discuss Mande affiliation. Kadugli-Krongo (Kadu): This group appears in Greenberg (1963:12) under the name of Tumtum as one of five Kordofanian branches despite divergent properties. Following suggestions made by Dimmendaal (1987:205) among others and supported by the fact that this group shows several of the typical Nilo-Saharan features first singular

pronoun a'a, second singular pronoun, movable /k/, and *n*/*k* used as plural formation.

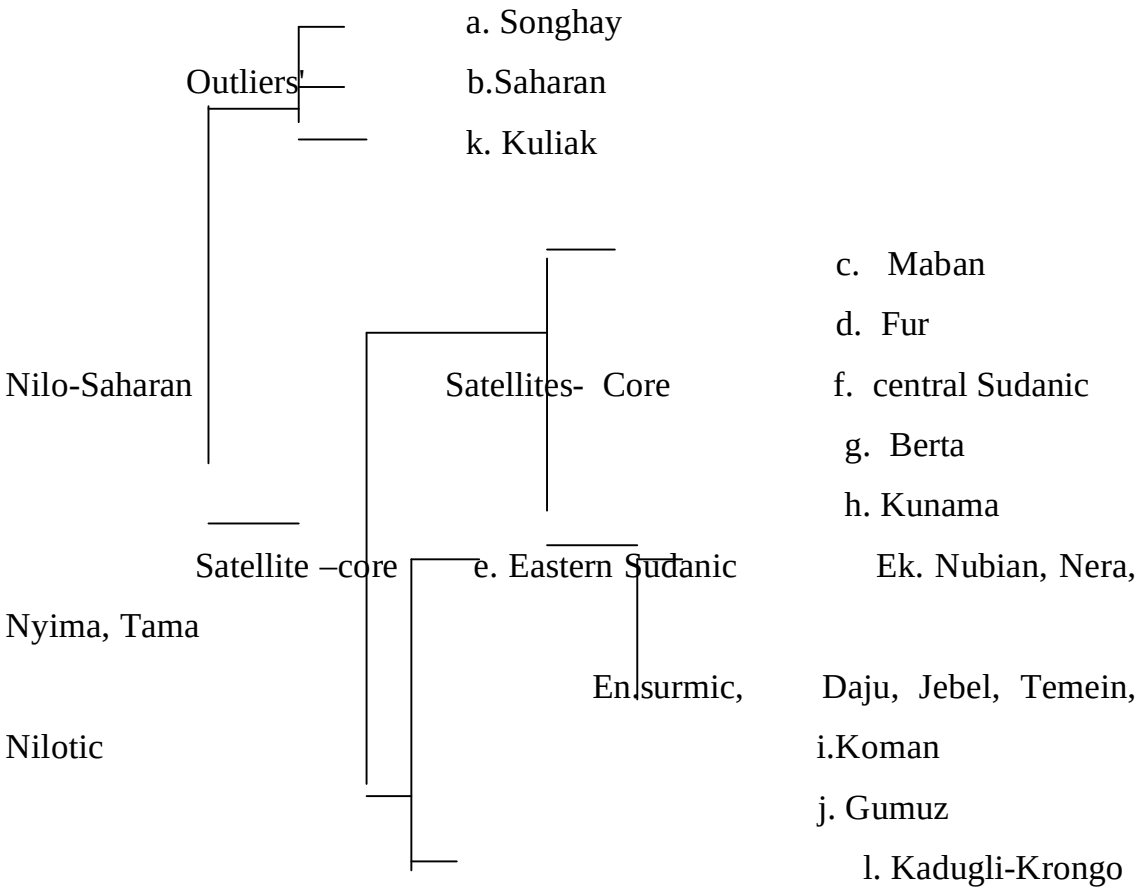
Bender (1996:275) includes Kadugli-Krongo in his Core of Nilo-Saharan, while Ehret (2001:52) rejects any Nilo-Saharan affiliation. Shabo. Bender proposes a Nilo-Saharan affiliation, which Ehret rejects. Meroitic; is the extinct language of the ancient Meroitic Empire (Sudan) preserved by a number of written records has been linked to various genetic groups and phyla, among them Afro-Asiatic, Tokharian, Saharan, and Eastern Sudanic.

Gregersen (1996:147) proposes to combine these two phyla Niger-kongo into a single one, Kongo-Saharan. His line of argument has been taken up by Blench (2000:293) in recent years, who attempts to establish Niger-Congo as a branch of Nilo-Saharan.

Bender (1996:291) proposes four branches of Nilo-Saharan: (A) Songhay, (B) Saharan, (c) Kuliak, called 'Outliers', and the rest, called 'Satellite–Core', which he further subdivides as indicated in diagram (2.1).

Diagram (2.1)

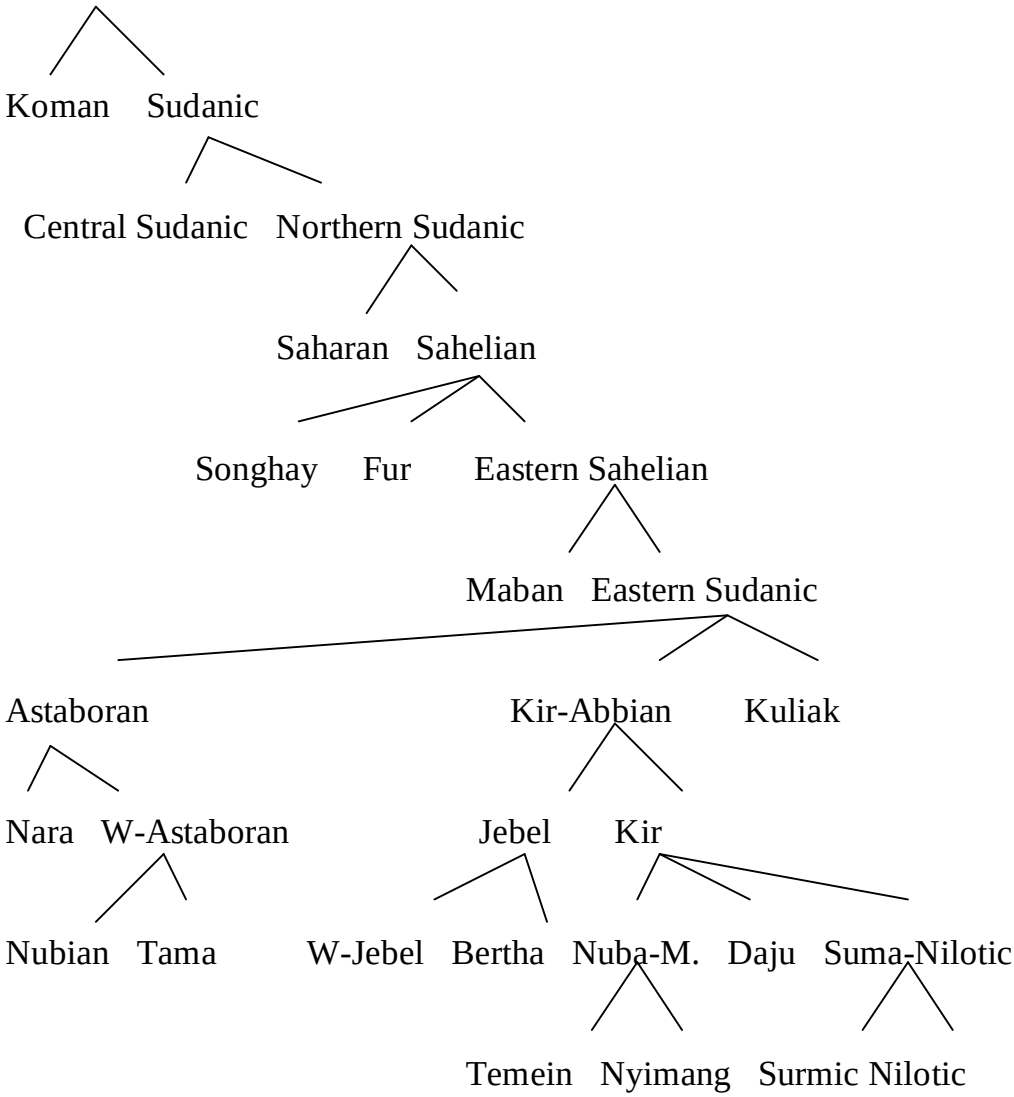
The represented Bender's (1996:306) Genetic classification of Nilo-Saharan.



Ehret's (2001:88) alternative genetic classification of Nilo-Saharan uses phonological and lexical isoglosses derived from an extensive comparative lexical database, but also considers grammatical and derivational morphemes as far as they are accessible through language descriptions. His result is presented in a mainly bilaterally branching tree, with one specific small language group or language branching off at each level and set against the rest, which receives novel geography-based labels. In the following condensed representation of his result, previously known group and language labels are underlined.

diagram (2.2):

Ehret's (2001:752), genetic classification of Nilo-Saharan



Since 1957 a large amount of work has been done in the recording and description of languages all over Africa. There are still a large number of languages un-describe including most of the languages of the Nuba Mountains .Greenberg proposed four major language families for all of Africa called phyla after botanical classifications: Niger-Kordofanian covering languages spoken from West Africa to East and South Africa including the very numerous Bantu sub-group and some languages of the Nuba Mountains. Afro-asiatic is covering Arabic, Berber of North Africa, a large number of languages in Ethiopia and the

Horn of Africa. Nilo-Saharan are not found in the Sudan and Chad only but also as far west as Mali and into Ethiopia and East Africa, including the very numerous Nilotic sub-group. Within Nilo-Saharan Greenberg proposed a large sub-group Chari-Nile which has subsequently been revised out of existence.

The model of Nilo-Saharan developes by Thelwall (1981:168) bases his work on the Daju language group and the Nubian groups. he referred to vocabularies attributed to various individuals as well as one more extensive study of Nyala. Appendix (5.1) another work dealing with Daju language in Chad is that of Tucker and Bryan (1966:231-42) who published a description of Daju language, including grammatical data, but whose language data was limited by size of the wordlists. In Daju lagawa there is study conduct by Abbakar (2000:35) who discusses the phonology and noun number morphology of Daju Lagawa. Schadeberg (1989:66) classified The Kordofanian languages under five groups: Heiban group, Talodi group, Rashad group, Kadugli group and Katla these names are based on their geographical centers; proposed by Schadeberg (1981:6) and differ from names used in previous literature. The Kadugli Group was earlier classified by Greenberg (from 1955 to1971) as part of Kordofanian but removed from that relationship by Schadeberg (1981:8) and is currently considered probably part of Nilo-Saharan. The Kordofanian sub-groups are located in the southern and eastern areas of the Nuba Mountains. The Kadugli Group is located in the south east central area near Kadugli. The rest of the Nuba languages are classified as part of a major sub-group of Nilo-Saharan called Eastern Sudanic.

Arthur (2008,11-17) points out that Daju consonants occur at four points of articulation; Bilabial, alveolar, palatal and velar.

In morphological point of view: Welmer's (1973:239) presentation of African language structures; is that for sheer complexity or irregularity in nominal morphology, however, it is hard to beat a number of Nilo-Saharan languages. This complexity is what is found in both the singular and plural

suffixes in Daju. Tucker and Bryan (1966:235) note that eastern Daju language has a variety of singular and plural suffixes and western Daju language has several singular suffixes along with –ke or -ge for the plural form

2.4 The vowel Harmony in Daju language:

Clements (1983:123) points out that vowel systems and vowel harmony, Africa has three types of vowel harmony systems which are apparently unknown elsewhere in the world. One of the best-known and most-discussed features of Africa phonology is the widespread use of the feature of tongue root advancing ATR in creating systems of word-level vowel harmony. Such vowel harmony systems are found widely through the Sudanic belt.

Stewart (1967:16,185-204) Describes the variety of ATR harmony in Akan language that there are two series of high vowels and two series of mid vowels. The high vowels in each series, usually including /i u e o /, are characterized by the features [+ATR] and the lower vowels including /ɪ ʊ ɛ ɔ /, by the feature [-ATR]. Within a word, all vowels, including those of harmonizing prefixes and suffixes, agree in the feature [+ATR] or [-ATR].

Strazny (2005:751) represents that Nilo-Saharan languages are tone languages with two to four underlying level tones, which are used for grammatical as well as lexical purposes. The number of tones and their main functional domain correlate to a considerable degree with the morphological type of the respective language. Five-vowel systems of ATR vowel harmony, often with contrastive length, are frequently synchronically or diachronically reconstruct-able. The consonant systems show either four or five; places of articulation, which partly also extends to the nasal.

Ehret (2001:16) claims five places of articulation for Proto-Nilo-Saharan in the case of plosives and four in the case of nasals. He also suggests a complex set of plosives for Proto Nilo-Saharan, with voiced implosives and explosives, voiceless aspirated and un-aspirated as well as glottalized plosives.

2.5 Syllables in Daju Language:

Richard (1992.167) assumes that a syllable is a unit of speech which is longer than one sound and smaller than a whole word. This definition seems to be workable with examples such as re-port, con-cern-ing, pho-no-lo-gy, in which each separate unit constitutes a syllable; larger than a single sound and smaller than a whole word. The importance of the syllable as a phonological unit stems from the fact that many phonological rules and processes are formulated with reference to its structure, e.g. voiceless stop aspiration rule in English, stress patterns and stress assignment are basically related to the syllable.

Durand (1994.250-254) claims that many theories have been developed to account for syllable structure. Phonological theory has witnessed a substantial change in the nature of its basic orientation. This change has been marked by the development of several new theoretical frameworks, which according to some scholars and theorists. The structure of the CV tier and it is formal descendents has been a matter of much debate in phonological theory.

The original CV tier proposed by McCarthy (1979) has been retained to the present by some researchers, but has also been challenged by other theories of prosodic tier structure.

Crystal (1997:101), argues that CV phonology is viewed as a model which adds a consonant (C) and vowel (V) tier to the syllablic and segment tier.

Clark and Yallop (1995:407) explicates that whenever the CV tier of C and V slots are postulated to be occupied by segments, the segments can be mapped straightforwardly on these CV positions.

Katamba (1989:156) argues that the CV theory is required to perform three main tasks: (i) stating universal principles in order to govern syllable structure, (ii) stating syllable structure typology and (iii) stating language-specific rules to map syllable template.

2.6 Previous studies in Daju Language.

Aviles (1997) conducts a thesis which was submitted to the Graduate Faculty of the University of North Dakota in partial fulfillment of the requirements for the degree of Master of Arts in the Phonology and morphology of the dar Daju language. He mentioned that a recurring theme among linguists is the need for more languages to be analyzed and more descriptions to be available for a variety of reasons. The main purpose of this thesis is to provide essential information on the Daju Dar Daju language of Chad, Africa that will assist in future language development work among the Daju dar Daju people as well as to provide additional information for possible future work among related languages.

Very little work has been done on the Daju languages as a whole and to date almost nothing on the Dar Daju Daju. The Dar Daju Daju of Chad is traditional oral societies who have, in recent years, expressed a strong desire to see their language developed in print form. In the past two years a working orthography has been established and a limited number of publications printed. During this time literacy work also began among the three language varieties of the Dar Daju Daju. The information provided by this thesis will likely prove helpful in current and future literacy work being done as well as in future publications. The description, that researcher presents is being limited to the phonology and morphology of the Dar Daju. Daju language and is not intended to be an exhaustive presentation of its grammar. The morphology discussed includes the morphology of pronouns and demonstratives, nominal morphology and lastly, verbal morphology. Information as to its relationship with and similarities to other Daju or Eastern Sudanic language varieties is included where applicable. Though a limited amount of linguistic information has been published in other Daju language varieties, no publication of linguistic work has been previously made available on the Dar Daju.

Thelwall (1981:31) claims that lagawa Daju has twenty two phonemes shown in table (1-5) with the exception [z] it is correct ,but there are some words that contain the sound /z/as /uzu/, /ize/ other claims that Thelwall does not find words end in [p] it is rare but there are word end in /p/ sound for example /timap/,the singular pronoun /ap/ to cut also thelwall said that no word in Daju language begin with /n/, but there are many words begin with /n/ as /nʌŋ/, /na/, /naa/,/ntolunne/ soot. In order to provide adequate evidence for existence phoneme, it is important to examine the context in which various sound can occur. The distribution of sounds in various positions of words (initial, intervocalic and final), is shown in chapter five.

Abbakar (2000) conducts a thesis which was submitted to the Graduate Faculty of Arts Department of Linguistics, University of Khartoum in partial fulfillment of the requirements for the degree of Master of Arts in the Phonology and Linguistic Analysis of the Noun Morphology of The Daju Language. The study has to establish the singular /plural noun formation in the Daju Language the descriptive method. The study has dealt with several important phonological issues. The stress has significant influence on the open central vowels /a/, so if the stress has appeared on the syllable with /a/, then it sounds /e/. Thus this analysis presents evidence for only five phonemic vowels. The study has also proposed a tentative orthography of Daju so it can be written.

CHAPTER THREE
METHODOLOGY

3.0 Introduction

This chapter is devoted for the methodology followed by the researcher in order to collect the data for the study under-investigation. The researcher depends on the descriptive analytical method. The data were collected from primary and secondary references written by prominent writers and linguists whose concern is either phonetics in general or the phonology of Daju language.

3.1 Data collection of the study:

3.1.1 Subjects:

The target groups from whom utterances are recorded are the native speakers of Daju. Respondents have been selected randomly from the area of Lagawa town which constitute the main residence of Daju people in South Kordofan state. Twenty five people were selected to respond to the recordings. These include different ages and sex. Same recordings of utterances of five old men, five old women five young men, five young women, five children; three boys and two girls are conducted to collect different utterances to help in verifying the sounds. These recordings were subjected auditory analysis by a specialized computer program for the analysis of speech sounds.

The tables below show the classification of the total number of respondents to according to their age and sex.

Table (3.4) Samples' classification according sex and age:

Group	***Number***	***Age range***
Old men	*5*	*40 - 70*
Old women	*5*	*40 - 50*
Young men	*5*	*18 – 39*
Young women	*5*	*18 – 39*
Children (boys and girls)	*5*	*07 – 17*
Total number	*25*	---------

Table (3-4) classifies respondents according to sex and age. These five groups have been involved in responding to the recordings. They are all equal in numbers according to the age range so as to include different generations and govern the utterance qualities objectively whether at the level of the sound or at the level of the utterance. The children of both sexes are five in number because their voices are similar and they do not cause difference. The old men and old women respondents' age range starts from forty and it is open ended. Respondents of young men and young women range from eighteen to thirty nine. The random selection of each group of respondents plays a great role in verifying the analysis of the utterance horizontally and vertically objectively

3.1.2 Instruments of data collection:

Data has been collected from the speakers of Daju language in addition to resources that deal with phonetics and phonology of Daju. Vowels and consonants are elicited from real utterances via different tools. Valid and reliable data were verified, classified and analyzed the vowels and the consonants sounds of the Daju language were organized in tables, compared and contrasted thoroughly with those of the IPA. Patterns of sounds in sequences were also made to investigate the supra-segmental features of the Daju language. Words and sentences of Daju language are analyzing to show the prominent sequence of consonant clusters. The following programs are used in the data analysis.

3.1.3 Digital Voice Editor:

This device is used to record the speech of people who were in involved in the study. Then it is used to analyze the material under investigation. The researcher choices this program because it is sophisticated device and is supported by especial transcriber.

3.1.4 Tavultesoft keyman 6.2

This program is represented the soul of study, because it is playing the role of transcriber and writing. The keyboard layout is described in terms of an IPA chart rather than a keyboard. This is because many base characters are typed as a sequence of a letter followed by one of <, >, = or | which are characters used to change a base character to another base character. Diacritics are typed as sequences of an appropriate key. Another denotes non-IPA sanctioned phonetic symbols they may be used by other traditions such as African languages, American, Russians and Chinese.

Table (3.1) keyman IPA keyboard

	Bilabial	***abiodental***	***Dental***	***Alveolar***	***Ostalveolar***	***Retroflex***	***Palatal***	***Velar***	***Uvular***	***Pharyngeal***	***Glottal***
Plosive	*p p* *b b*			*t t* *d d*		*ʈ t<* *ɖ* *d<*	*c c* *ɟ j=*	*k k* *g* *g<*	*q q* *ɢ* *G=*		*ʔ ?=*
Nasal	*M* *m*	*ɱ* *m>*		*n n*		*ɳ* *n<*	*ɲ* *n=*	*ŋ* *n>*	*ɴ* *N=*		
Trill	*ʙ* *B=*			*r r*					*ʀ* *R=*		
Tap or Flap		*ⱱ v<*		*ɾ r>*		*ɽ r<*					
Fricative	*ɸ* *f=* *β* *b=*	*F f* *v v*	*Θ* *t=* *ð* *d=*	*s s* *z z*	*ʃ s=* *ʒ z=*	*ʂ s<* *ʐ z<*	*ç* *c=* *ʝ j<*	*x x* *ɣ* *g=*	*χ* *x=* *ʁ* *R>*	*ħ h>* *ʕ ?<*	*h h* *ɦ h<*
Lateral Fricati				*ɬ ɮ* *l>l*							

ve				=							
Approx imate		ʋ *v=*		ɹ *r=*		ɻ *R<*	*j j*	ɰ *w>*			
Lateral Approx imate				*l l*		ɭ *l<*	ʎ *L<*	ʟ *L=*			

*Where symbols appear in pairs, the bottom one represents a voiced cons*onant.

Shaded areas denote articulations judged impossible.

Table (3.2) Other consonants or non-IPA

Clicks	***Voiced implosives***
ʘ *p= Bilabial*	ɓ *b> Bilabial*
ǀ *!< Dental*	ɗ *d> Dental/alveolar*
ǃ *! (Post)alveolar*	ʄ *j> Palatal*
ǂ *!= Palato alveolar*	ɠ *g> Velar*
ǁ *!> Alveolar lateral*	ʛ *G> Uvular*

Table (3.3) keyman IPA Vowels

	Front		***Central***		***Back***	
	Unrounde d	***Rounde d***	***Unrounde d***	***Rounde d***	***Unrounde d***	***Rounde d***
Close	*i i*	*y y*	ɨ *I=*	ʉ *U=*	ɯ *u=*	*u u*
Near-close	ɪ *i=*	ʏ *y=*				ʊ *u<*
Close -mid	*e e*	*ø o>*	ɘ *E=*	ɵ *O=*	ɤ *O>*	*o o*
Mid			ə *e=*			
Open-mid	ɛ *e<*	*oe E<*			ʌ *u>*	ɔ *o<*

Near-open	*æ a<*		*ɐ a>*			
Open	*a a*	*œ E>*			*a a=*	*ɒ o=*

3.1.5 Procedure the data collection:

The researcher spends a whole year in collecting data; from primary resources, recording words and speech from native's speakers of Daju Lagawa Language. He makes a group out of twenty five people that selected randomly and records their speech then analyses from validity and reliability, and organized into tables to identify the phonemes. Then examine these phonemes in minimal pairs. All the items of the recordings are designed according to the general phonetic features which appear as; the main segments, sound groups or clusters, phonotactics and supra-segmental phonology of Daju. All items were designed to cover the concerned areas of the nature of the phonology of the Daju language.

3.1.6 Validity and Reliability:

6.1 Validity

Before reaching the final version of each item of the list which is to be recorded, the researcher has consulted a committee of experts in the Daju language, fields of the Research and information technology appendix (3.I). The opinions of the committee have helped the researcher to reach the final copy of the interviews. Some items were omitted, others were added or adapted. Instead of having a mixture of respondents, the experts advised the researcher to classify them into homogenous groups of age ranges and sex.

Having completing the recommended suggestions the researcher is able to represent the final copy of the linguistic items which are to be recorded.

6.2. Reliability:

When the final copy of the linguistic items has been reached, five homogenous groups of age and sex were selected randomly from the native speakers of Daju to record. The total number of the recordings is twenty five. These recordings were subjected for testing reliability. They were analyzed auditory by the aid of the computer programme speech transcribers' tavultesoft keyman version 6.2 that was conducted by the researcher.

CHAPTER FOUR

4.0 Introduction

Language is the honor of Allah that put into Humans. Speech sounds are the most expressive tool that every normal human uses to express his needs and feelings. Speech is primary to the other expressive tools such as writing. Speech sounds are categorized into two categories; namely consonants and vowels. Daju is ingressive language in the production of its sounds the air is pushed outward like most known languages. . In this research the researcher present an analysis of the Lagawa Daju phonological system, based on a corpus of words collected over a period of two years. The corpus began as a word list elicited by Us.Alzain in the Lagawa villages. Then the researcher revised it with two native speaker Daju language Mohammed Yagoob teacher in University of Kurdufan Faculty of Education section part of Geography and Mohammed Gasim student in higher secondary school, with input from several other people. The transcriptions were also checked in various Lagawa Daju villages during informal linguistic sessions. This research is divided into five chapter covering consonants, vowels, and syllable structure, morphophonemic and consonant germination.

4.1 The distribution of consonants:

4.1.1 Plosive consonants:

Daju has four series of non-implosive stops: voiced, voiceless, nasal and prenasalized. Plosive consonants are produced when a complete closure is made at some point in the vocal tract. The air is blocked behind this closure and then released to escape out violently. There are three phases involved; the closure phase according to Daju language; the articulators move to form the obstruction; hold phase; the blockage is held resulting in a compression of the air; the release phase; the articulators set apart to release the air to pass out. Voiced plosives are quite distinct from their voiceless counterparts along the

closure as they have longer duration than voiceless plosives these are shown down in details;

Table (4.1.1) the phoneme /p /

In Daju language the following table (4.1) shows the distribution of the sound /p/.

Phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/p/	*/pʰɛndɛ*	*Wound*	*Kapagi*	*Little*	--------	-------
/p/	*/pʰʊksɛ*	*Rabbit*	*Ipe*	*Tail*	*Timap*	*Cut*
/p/	*/pʰʊʃ/*	*Gray*	----------	-------	--------	------

The plosive /p/ is a voiceless bilabial plosive; in Daju it appears initial and intervocalic. No word in Daju ends in /p/. The sequence 'pr' is used in Daju language as a prefix to mean small as in the example below:

(1) /pɾɪcɛ / *child*

(2) /prʃulʃulɛ/ *frog's child*

(3) /prʃɪlʃɪl/ *bicycle*

(4) /pr.tiɲɛ/ *the cow's child*

Table (4.1.2) the phoneme /b/

Phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/b/	*Batal*	*Fatigue*	*Lubikɛ*	*soak*	*Jəhɪb*	
/b/	*Bɒtkɛ*	*Reclaim*	*ɾubikɛ*	*Follow*	*ɲæɾb*	*Tongue*
/b/	*Bɒɾnɛ*	*Hyena*	*ndobikɛ*	*choose*	*ndab*	*Field*
/b/	*bɪdɪcɛ*	*Saddle-strap*	*kəbəge*	*shoe*	*Dob*	*Tie*

/b/ in Daju language discusses as a voiced bilabial plosive. It is voiced the vocal cords are vibrating. Complete closure is made by the lips. Then the lips set apart and air escapes out through the mouth in burst. The velum is raised so that the air cannot escape through the nose. The table above; (4.1.2) shows the different distributions of the plosive /b/, which is classified as a voiced bilabial plosive. In Daju this phoneme appears initially, intervocalic and final. Sounds /p/ and /b/ in tables (4.1.1) and (4.1.2) are homorganic; they share the same place and manner of articulation both are bilabial and produced and plosives. The only difference between them is voice and word final /p/ exception. The two consonants appear initially and intervocalic. But there is the inspiration in the phoneme [p] and it has more than one realization. These different realizations of /p/ are allophones. The allophones are [p] and [pʰ]. The following examples illustrate this notion: /pʰʊksé/ 'rabbit' and / pɔksé/ ' bring this'. In these examples the absence of the aspiration does not make misunderstanding.

Table (4.1.3) the phoneme /t/

Phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
$/t^h/$	*/t^hɶɾí/*	*Inside*	*/titi/*	*Over*	*Akot-*	*Wall*
/t/	*/t^hū:ɲ/*	*Outside*	*/ɓatal/*	*Fatigue*	*Awat*	*Bird*
$/\acute{t}/$	*/tə́w/*	*Under*	*/mɒtɛ/*	*Type of grass*		------
/ f/	*/tbə̀/*	*At home*	*/ʊnʊtɛ/*	*Ear*	------	------

In Daju /t/ is an alveolar plosive; so every language has phonemes and variants of that phoneme, which calls allophones. The appearance of allophones depend on rules; for example: a phoneme can be pronounced in different ways according to its context; as the different between /t/ in Daju language. Complementary distribution explains that, phones appear in differing environments; are allophones of the same phoneme.

[t^h] [t] [$\acute{t}$] [ɾ]

(1)[t^h] spirited in word-initially and in front of Stressed syllables as in Daju words: /t^hɾe/ 'in side', /t^hbe/ 'at home', /t^hbeede/ 'in the middle'. (2) Inspirited /t/→ flap [ɾ], intervocalic, when second vowel is unstressed: /tɒɾɪ/ 'in the yard of valley'/mɒɾe/ 'type of grass'. (3) /t/→ unreleased [$\acute{t}$] word finally as: /tɪ$\acute{t}$/ 'above'. /t/→ [t] and /e$\acute{t}$te/ 'fast' while /eɾˈɾe/ with primary stress is 'tree'.

(4) Elsewhere: as / tʊhe/ 'type of wild animal', /teŋgɑne/ 'type of wild animal'. Therefore geminating has been observed as in the example:

(1)/satté/ ' gourd' singular.

(2) /otteké/ ' places ' plural

(3) / lutteké/ 'waists' plural

Another observation has been found in the phoneme /t/; in Daju Language; as shown, below (1) and (2), which the phoneme /d/ change to /t/ and geminating /tt/, as found in example above (1), (2) and (3).

(1) Ode valley

(2) otte valleys

The rules that covered the above example are:

(1) Two or more sounds are allophones of the same

Phoneme if: they have a predictable complementary

(2) It is not create a semantic contrast

(3) It is phonetically similar.

More examples in Daju words

/kɒ̀ɾɛ́/ rain

/kɒ̀ɾé/ sky

Table (4.1.4) the phoneme of /c/

Phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/c/	*Caŋane*	*Scorpion*	*Kɛrwıce*	*millet*	*pilic*	*Placeof fire*
/c/	*Cili*	*Parrot*	*Mocce*	*Liver*	*tilic*	*Lake*
/c/	*Curne*	*Store-house*	*Kʊcce*	*Seed*	*toc amic*	*Forhead Neck*

In Daju /c/ It is a voiceless palatal stop is a type of consonantal phoneme that used in Daju vocal language. The symbol in the International Phonetic Alphabet that represents this sound is /c/, and the equivalent symbol is [c]. It is similar to a voiceless post-alveolar affricate [tʃ] as in English chip, and because it is difficult to get the tongue to touch just the hard palate without also touching the back part of the alveolar ridge, [c] is less common than [tʃ]. It is common for the symbol [c] to represent [tʃ] or other similar affricates, for example in the Daju language /cıɾkɛ/ it means to have diarrhea. This may be considered appropriate when the place of articulation needs to be specified and the distinction between stop and affricate.

In Daju /c/ is produced by obstructing the airflow in the vocal tract. Since the consonant is also oral, with no nasal outlet, the airflow is blocked entirely, and the consonant is a stop. Its place of articulation is palatal, which means it is articulated with the middle or back part of the tongue which is raised to the hard palate. Its phonation is voiceless, which means it is produced without vibrations of the vocal cords. It is an oral consonant, which means the air is allowed to escape through the mouth only. It is a central consonant, which means it is produced by directing the airstream along the center of the tongue, rather than to the sides. In the final position of the phoneme /c/, the researcher observed that the phoneme formed final position just at the root of the word and the vowel [e] will be omitted. As in the examples below :

(1) Pilice *plic-* *place of fire*

(2) Tilice *tilic-* *lake*

(3) Toce *toc-* *forehead*

(4) Amice *amic-* *neck*

(5) kəmc *dirty*

The table (4.1.5) the phoneme /k/

Phon-eme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/k/	*/kʰə́ndə̀nɛ́/*	*Hen*	*/mɛ̀kɛ̀/*	*Gum*	*/muduk/*	*Five*
/k/	*/ kɒ́ ɾɛ́/*	*Rain*	*/ʃəkɛ́/*	*Sheep*	*/mesk/*	*Protect*
/k/	*/kɾǣsɛ́/*	*Hunger*	*/círíkɛ́/*	*Diarrhea*	*/ləgidik/*	*Know me*
/k/	*/ki:nɛ̀/*	*Human*	*/ɒ̄nɒ́kə̄/*	*We*	---------	--------

The phoneme /k/ is frequent in the Daju language. It is classified as a voiceless, velar fricative. Total closure is made by the back of the tongue and the soft palate. The velum is raised, thus blocking access to the nasal cavity the following table (4.1.5) shows the phonemic distributions of /k/. Phoneme /k/ has been found in all position initial intervocalic and final, as in above table the aspiration and the geminating are two of its features as in examples below:

(1) /kəmbʊŋe/ ' crow'

/kʰəndənɛ/ ' hen'

(2) / təkke/ 'cows'

/ kokkoloké/ ' cocks'

The phoneme [-ke] is used as a suffix for the plural in alternative with the morpheme /g/ as:

(1) / pʊksé/ singular a rabbit

(2) / pʊksiké/ plural rabbits or / pʊksige/

In the examples above the vowel is dropped off from the root; in the singular form /e/ is replaced by the vowel /i/ in the plural form.

Another example :

(a) /ise/ singular ' dog'

(b) /izike/ plural ' dogs' or /izige/

In example (2) when the suffix [-ike] is added to the root the phoneme /s/ is changed to /z/.

Table (4.1.6) the phoneme of /g/

Phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/g/	*/gɪm/*	*Mark out*	*/pæge/*	*Water pot*	*/ag/*	*I'm*
/g/			*/mæge/*	*Water*	*/ɪg/*	*You*
/g/			*/təlgne/*	*Shelter*	*/krog/*	*Crow*
/g/			*/soge/*	*Road*		

In Daju /g/ is a voiced velar stop, uses in Daju language. The symbol in the International Phonetic Alphabet that represents this sound is /g/, and the equivalent symbol is [g].

In Daju /g/ is produced by obstructing airflow in the vocal tract. The consonant is also oral, with no nasal outlet, the airflow is blocked entirely, and the consonant is a stop. Place of articulation is velar, which means it is articulated with the back of the tongue at the soft palate. It is phonation is

voiced, which means the vocal cords vibrate during the articulation. It is an oral consonant, which means air is allowed to escape through the mouth only. It is a central consonant, which means it is produced by directing the airstream along the center of the tongue, rather than to the sides.

Table (4.1.7) the phoneme /d/

Phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/d/	*/dʊŋgɛ*	*Not existent*	*/əʊdɛ/*	*Place*	*/ɗed/*	*Share*
/d/	*/dəŋgɛ*	*Stand on*	*/kòdòs/*	*Three*	*/sed/*	*Head butt*
/d/	*/dæŋɛ/*	*Step on*	*/ŋædə/*	*Say*	*/gʊdgʊ/*	*Stump*
/d/	*/dimke*	*Circumcise*	*/lɪgɪdɛ/*	*Shadw*	*/wud/*	*Tweny*

In Daju /d/ is voiced alveolar stop. The symbol in the IPA that represents voiced this sound is d.

The soft palate is raised and tongue tip touch alveolar ridge that no air escapes through the nose. Air is restricted; air is released with sudden explosion, then articulators return to normal position.

Table (4.1.8) the phoneme of /h/

Phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/h/	*/hai/*	*No*	*/jəheke/*	*calling*	*/pɪdeh/*	*Two*
/h/	*Hogne*	*Valley*	*/tuːhe/*	*animal*	---------	--------
/h/	-------	-------	*/ŋoɟohe/*	*Blind*	*/ŋoɟoh-/*	*Blind*
/h/	------	---------	*/osohe/*	*Lion*	*/osoh-/*	*Lion*

/h/ in Daju is voiceless glottal transition, commonly called a fricative, is a type of sound used in Daju language which patterns like a fricative or

approximant consonant phonologically, but often lacks the usual phonetic characteristics of a consonant. The symbol /h/ in the IPA; represents /h/ sound.

In Daju language, /h/ is the constricted manner of articulation of a fricative. However, in many if not most it is a transitional state of the glottis, with no manner of articulation other than its phonation type. There is no other constriction to produce friction in the vocal tract. In the languages they are familiar with; many phoneticians no longer consider [h] to be a fricative. However, the term "fricative" is generally retained for historical reasons. It may have a glottal place of articulation. However, it may have no fricative articulation, in which case the term 'glottal' only refers to the nature of its phonation, and does not describe the location of the stricture. All consonants except for the glottal, and all vowels, have an individual place of articulation in addition to the state of the glottis. As with all other consonants, surrounding vowels influence the pronunciation [h], and [h] has sometimes been presented as a voiceless vowel, having the place of articulation of these surrounding vowels, because some words of Daju, that barrowed from Arabic language, [h] is pronouncing as voiceless vowel 'hılıne' and other words in Daju language ' hai' means no and 'hɒ́ŋɛ̀' means valley. It is voiceless, which means it is produced without vibrations of the vocal cords. It is an oral consonant, which means air is allowed to escape through the mouth only; because the sound is not produced with airflow over the tongue.

Table (4.1.9) the Phoneme /ɗ/.

Phoneme	***Initial***	***Gloss***	***intervocalic***	***Gloss***	***Final***	***Gloss***
/ɗ/	/ɗæɲə/	Step on	/əɗəho/	Going	/wɑɗ/	Spit
/ɗ/	/ɗəŋgə/	Step on by feet	/kòɗ̀os/	Three		
/ɗ/	/ɗʊərɑjɛ/	Pot of milk	Kʌɗəɲ	To build with mud		

In Daju /ɗ/ is a voiced alveolar implosive consonantal sound, used in Daju language. The IPA symbol is lowercase letter [d] with a rightward hook protruding from the upper right of the letter. Thus takes this shape [ɗ].

/ɗ/ is produced by obstructing airflow in the vocal tract. the consonant is also oral, with no nasal, the airflow is blocked entirely, and the consonant is a stop. Its place of articulation is alveolar, which means it is articulated with either the tip or the blade of the tongue at the alveolar ridge. Its phonation is voiced, which means the vocal cords vibrate during the articulation. It is an oral consonant, which means air is allowed to escape through the mouth only. It is a central consonant, which means it is produced by directing the airstreams along the center of the tongue, rather than to the sides./ɗ/ rarely appears in the final position in Daju.

Table (4.1.10) the phoneme of /ɓ/

Phoneme	***Initial***	***Gloss***	***intervocalic***	***Gloss***	***Final***	***Gloss***
/ɓ/	*/ɓodike/*	*Perspire*	*/kʊɓinə/*	*Fruit bat*	---------	--------
/ɓ/	*/ɓənə/*	*Reclaim*	*/kaɓaricce/*	*Frost*	----------	---------
/ɓ/	*/ɓuge/*	*Chief*	*/təɓane/*	*Snuff or country*	----------	---------

In Daju /ɓ/ is voiced bilabial implosive is a type of consonantal phoneme that used in Daju language. The symbol in the International Phonetic Alphabet that represents this sound is /ɓ/, and the equivalent symbol is [b].

/ɓ/ is produced by obstructing airflow in the vocal tract. Since the consonant is also oral, with no nasal outlet, the airflow is blocked entirely, and the consonant is a stop. Its place of articulation is bilabial, which means it is articulated with both lips. Its phonation is voiced; the vocal cords vibrate during the articulation. It is an oral consonant; air is allowed to escape through the mouth only, because the sound is not produced with airflow over the tongue. This phoneme does not appear in the final position in Daju.

Table (4.1.11) the phoneme /ʃ/.

Phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***final***	***Gloss***
/ʃ/	*/ʃille/*	*Black*	*/ŋoʃohe/*	*Blind*	------	-------
/ʃ/	*/ʃurcce/*	*Clay*	*/toʃe/*	*Forehead*	------	------
/ʃ/	*/ʃabre/*	*Mountain*	*/prɪʃe/*	*Child*	------	-------

In Daju the phoneme /ʃ/ is a voiced palatal implosive is consonantal sound, which used in spoken Daju languages. The symbol in the International Phonetic Alphabet that represents this sound is /ʃ/, and the equivalent symbol is [J]. The IPA symbol is a dot-less lowercase letter j with a horizontal stroke the symbol

for the voiced palatal plosive, and a rightward hook the diacritic for implosives.

/ʃ/ is produced by obstructing airflow in the vocal tract. Since the consonant is also oral, with no nasal outlet, the airflow is blocked entirely, and the consonant is a stop. Its place of articulation is palatal; it is articulated with the middle or back part of the tongue raised to the hard palate. It is phonation is voiced; the vocal cords vibrate during the articulation. It is an oral consonant; air is allowed to escape through the mouth only. It is a central consonant, which means it is produced by directing the air stream along the center of the tongue, rather than to the sides.

Table (4.1.12) the phoneme /ʃ/.

Phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/ʃ/	*/ʃæle/*	*Young lady*	*/tomoʃɛ/*	*elephant*	*/pʰuʃ/*	*Gray*
/ʃ/	*/ʃme/*	*Belly*	*/malaʃɛ/*	*Wild hen*	*/Paʃ/*	*white*
/ʃ/	*/ʃɔke/*	*Urine*	*/meɾʃɛ/*	*lame*		
/ʃ/	*/ʃiŋde/*	*A knee*				
/ʃ/	*/ʃʌnde/*	*A sheep*				

In Daju /ʃ/ is a voiceless the vocal cords are not vibration. Post-alveolar the narrow groove is formed by the blade of the tongue being closer to the pre-palatal region. The velum is up so that it prevents the air from escaping through the nose.

/ʃ/ fricative alveolar voiceless sound, the vocal folds are not vibrating. The half closure is caused by the tip and blade of the tongue drawing close to the upper teeth and the alveolar ridge. The velum is up so that it prevents the air from escaping through the nose.

Table (4.1.13) the phoneme /s/:

Phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/s/	/sərɛ/	Porridge	/uːsukɛ/	Blow	/kədɗoss	Three
/s/	/səlɛ/	Sword	/assiŋ/	Ten	/kamas/	Dry
/s/	/soɾɛ/	Book				
/s/	/səʊgɛ/	Road				
/s/	/səŋgɛ/	Sleep				

In Daju /s/ is a voiceless alveolar fricative which appear initial, intervocalic and final and alternative with /z/ in plural case (a) and (b). Example:

(a) /ise/ singular 'dog'

(b) /izike/ plural 'dogs' or /izige/

Table (4.1.14) the phoneme / z/

Phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/z/			*ɪze*	*Dog*		
/z/			*Kazɪbege*	*Crocodile*		
/z/			*Bozo*	*To dig*		
/z/			*Uzu*	*To blow*		

In Daju /z/ is a voiced alveolar fricative that appear only in intervocalic position and a assimilation with /ʃ/ in case of plural and became /ʃʃ/.

Example:

(a) /mɑlɑʃɛ/ wild hen singular

(b)/mɑlɑʃʃɛ/ wild hens plural

The phonological system of a language includes various units plus patterns which are used to combine the units. The units of phonological system are features; aspects or characteristics of a speech sound that arise from the way the sound is articulated or the received it sounds to the ear. Voicing is a feature that varies according to whether or not the vocal cords vibrate during the

articulation of a sound; for example the phonemic fricatives /s/ and /z/. The voiceless fricatives /s/ becomes voiced preceding a voiced consonant as shown in example :

/iis-e/	'dog'	[iise]
/iis-ge/	'dogs'	[iizge]

The environment in which the voiceless fricative /s/ becomes [ʃ] is a case of mutual assimilation in which the phoneme /s/ becomes a palatal before the voiceless palatal stop /c/. The phoneme /c/ also becomes a palatal fricative [ʃ], thus /s/ and /c/ mutually assimilate and become [ʃʃ]. This assimilation is shown in examples (1-4)

(1)	/kɑlɑs-ce/	'ember'	[kɑlɑʃʃe]
(2)	/mɑlɑs-ce/	'lance'	[mɑlɑʃʃe]
(3)	/tuss-ce/	'testicle'	[tuʃʃe]
(4)	/testes-ce/	' pimple'	[testeʃʃe]

Table (4.1.15) the phoneme / m/

phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/m/	/mæse/	Fire	/kəməle/	camel	/rɒm/	Added
/m/	/muːne/	Nose	/kəmes/	Dry		
/m/	/mɒɾtæne/	Horse	/cʌmdʊne/	Date		
/m/	/mə/	This	/ʃime/	stomach		
/m/	/məke/	Gum	/læmɪce/	prayer		
/m/	/meɪne/	Father	/timoʃe/	elephant	/gɪm/	Mark out

In Daju /m/ is a bilabial nasal consonant, which appears in all positions, with the exception of the final position rarely finding. The phoneme combines with other bilabial plosive /b/ to make a cluster or pre-nasalized implosive /mb/

Table (4.1.16) the phoneme /n/:

Phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/n/	/nə/	3p take	/jʌneɪ/	Hitter	/eræn/	Six
/n/	/nəunɒkə/	Ours	/muːne/	Nose		
/n/	/neɪneɪ/	Theirs	/ŋənje/	Stone		
/n/	/nʌn/	Yours	/nəunɒkə/	2p Ours	/nʌn/	Yours

In Daju /n/ is a bilabial nasal that appears in all positions and combines with the alveolar bilabial plosive /d/ to make a cluster pre-nasalized implosive /nd/.

The table (4.1.17) the phoneme /ɲ/

phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/ɲ/	*ɲalane*	*Story*	*Baɲage*	*Wild animal*	*Karaɲ*	*soar*
/ɲ/	*ɲʊrmʊcce*	*Ant*	*Təɲe*	*cow*	*Kaɗaɲ*	
/ɲ/	*ɲæbre*	*Tongue*	*ɗəɲe*	*build*		
/ɲ/	*ɲærɪce*	*Grass*	*Rəɲe*	*Mosquito*		
/ɲ/	*ɲæne*	*Brother*				

In Daju /ɲ/ is voiced palatal nasal that appeared in all position. The symbol in the IPA that represents this sound is [ɲ]. The tongue rises to the hard palate.

The table (4.1.18) the phoneme /ŋ/

phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/ŋ/	*/ŋæse/*	*Stream*	*/roŋe/*	*Sun*	*/pʊŋpʊŋ/*	*Sand*
/ŋ/	*/ŋæde/*	*Say*	*/ɓrɒŋe/*	*Baankhi*	*/nʌŋ/*	*Mine*
/ŋ/	*/ŋædəke/*	*Talk*	*/laŋekke/*	*Singing*	*/æsɪŋ/*	*Ten*
/ŋ/	*/ŋædige/*	*All*	*/woŋe/*	*Night*	*/ŋtoŋ/*	*Zero*
/ŋ/	*/ŋæɾæde/*	*Cousin*	*/ŋəlɪŋəlɪ/*	*Snake*		

In Daju /ŋ/ is a velar nasal; the tip of the tongue presses against the teeth ridge and forms a closure. The soft palate is lowered and the back of the tongue is

raised until they touch. The air stream has to pass through the nose and vibrating the vocal cords.

Table (4.1.19) the phoneme /l/:

phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/l/	*/lɪgɪde/*	*Shadow*	*/səllɛ/*	*Sword*	*/ʃil*	*black*
/l/	*/læʃɾ/*	*Green*	*/ʃælɛ/*	*Youth girl*	*Dɪkɪl*	*chimpanzi*
/l/	*/lɒgəʊnɪce/*	*Nubain*	*/culucɛ/*	*coal*	--------	-------
/l/	*/lɒgɒke/*	*A drum*	*/cəlɛ/*	*Slave*	--------	--------
/l/	*/leɾke/*	*Quarrel*	*/selecɛ/*	*Fox*	--------	--------

In Daju /l/ is alveolar lateral which is the air pass dawn the centre of the mouth; it passes through the side of tongue. The tip of the tongue is placed against the teeth ridge, but instead of forming a complete closure.

Table (4.1.20) the phoneme /ɾ/:

Phoneme	*Initial*	*Gloss*	*Intervocalic*	*Gloss*	*Final*	*Gloss*
/ɾ/	*/ɾɒŋɛ/*	*Sun*	*/mɒɾɛ/*	*Well*	*/pr/*	*Red*
/ɾ/	*/ɾəskɛ/*	*Death*	*/kɒɾɛ/*	*Rain*	*/læʃr/*	*Green*
/ɾ/	*/ɾmɛ/*	*Follow*	*/ɗɛrə/*	*what*	*/wœɾ/*	*Thin*
/ɾ/	*/ɾɒŋdəgɛ/*	*Days*	*/ɗirə/*	*Cut it*	*/oɾ/*	*Saw*
/ɾ/	*/ɾəɲɛ/*	*Mosquito*	*/ʃuɾuccɛ/*	*clay*		

In Daju /ɾ/ is a lateral consonant is formed by a partial closure on both side of the tongue allowing the air stream to pass out. The air is so weights in pronunciations as /ɾɒ́ŋɛ̀/ indicates for sun.

Table (4.1.21) the phoneme /w/:

phoneme	***Initial***	***Gloss***	***Intervocalic***	***Gloss***	***Final***	***Gloss***
/w/	*/wɪnɪccɛ/*	*Claw*	*/dawɪccɛ/*	*Sweeper*	*/kaw/*	*Hit*
/w/	*/woccɛ/*	*Stick*	*/eweɪgɛ/*	*Trees*		
/w/	*/wœnɛ/*	*Empty*	*/awœdɛ/*	*Bird*		
/w/	*/wɪdkɛ/*	*Walk*	*/nowanɛ/*	*One*		
/w/	*/Wəŋgɛ/*	*Left*	*/ɗuwɛ/*	*Thing*		

This table (4.1.21) /w/ discusses and analyses with the next table, (4.1.22) because it is similar in features.

Table (4.1.22) the phoneme /j/:

Phoneme	*Initial*	*Gloss*	*Intervocalic*	*Gloss*	*Final*	*Gloss*
/j/	*/jinɛ/*	*Year*	*/æjəkɛ/*	*encapsulation*	*/ŋɪljŋɪlj/*	*Snake*
/j/	*/jəhkɛ/*	*Call*	*/æjɛ/*	*Hang*	*/wəj/*	*Much*
/j/	*/jæwəkɛ/*	*Collect*	*/əʊɾæjɛ/*	*animal*		
/j/	*/jukɛ/*	*Seed*	*/æjdənɛ/*	*kinsman*		
/j/	*/juːɾɛ/*	*Bird*	*/ɪjɛ/*	*Meat*		

The two tables (4.1. 21) and(4.1.22), /w/ sound and / j / sound are classified as semivowels or glides. this sounds can be created with slightly restriction in the vocal tract than vowels, but less restriction than other consonants, because the phoneme [w] and [y] can be used to spell vowel sounds also each of them a portion of two-sound vowels in fact two sounds are not vowel sounds, because they cannot be syllabic; if the they created syllable why the words of English, 'we' , 'you' and 'year' cannot pronounced with two syllables. The phonemes [w] and y are usually associated with a vowel sound. When the phoneme [w] and [y] are used in vowel spellings, they are representing the vowel sound, and not /w/ sound or /j/ sound.

4.2 Minimal pairs of Daju phonemes (consonants):

The phonemic accuracy of the sounds has been proved by comparing minimal pairs that demonstrate contrast in identical environment and differ only in one segment to verify the status of phonemes as illustrated in the following, table

Table (4.2.1) the minimal pairs of Daju phonemes

Phoneme	***Transcription***	***Tone***	***Gloss***
[s] [k]	Sɛ̀lɛ̀ Kɑ̀ lɛ̀	LL LL	Sword Type of birds
[m] [p]	Mɛ̀nɛ̀ Pɛ̀nɛ̀	LL LL	Father Son or daughter
[s] [m]	Sɒ́rɛ̀ Mɒ́rɛ̀	HL HL	A book Well
[c] [k]	cuɾnɛ kuɾnɛ	HH HH	Small granary Seat
[s] [w]	Sə́rɛ̀ Wə́rɛ̀	HL HL	Prorridge Woman
[ʃ] [ɟ]	ʃʊ́kɛ́ ʃʊ́kɛ́	HH HH	Urinate Seed
[ʃ] [h]	Tómɒ̀ʃɛ̀ Tómɒ̀hɛ̀	HLL HLL	Elephant Honey
[ɲ] [m]	ɲɛ́ŋgɛ̀ mɛ́ŋgɛ̀	HL HL	Star Milk

[s] [L]	Sɒ̀gɛ̀ Lɒ̀gɛ̀	LL LL	Street Broth
[w] [j]	[wahkɛ] [jahkɛ]		Things Calling
[l] [j]	[loŋgɛ] [joŋgɛ]		Small vally Keeping
[t] [ɾ]	[teɲɛ] [ɾeɲɛ]		Cow Mosquito
[ʃ] [h]	[aʃkɛ] [ahkɛ]		Throwing Cookig
[ɲ] [ŋ]	[ɲanɛ] [ŋanɛ]		Brother Count
[ɲ] [ɟ]	[ɲruccɛ] [ɟuruccɛ]		Claw Clay
[t] [ɗ]	[tiginɛ] [ɗìginɛ]		Axe Black smith

Sounds are contrasted in analogous environments to check the existence of the phonemic similar segments. Contrasts also aimed to decide which sounds in the language are phonemes and which have complementary distribution or free variation with each other, and thus allophones of phoneme. Some contrastive sounds are single segments and other are composed of several segments working

together to make up some contrastive sounds. These contrastive sounds are represented in the phonemic chart of Daju language in chapter five.

4.3 The phonemes of Daju Language:

A phoneme of a language or dialect is an abstraction of speech sound or of a group of different sounds which are all perceived to have the same function by speakers of that language or dialect. For example the Daju words 'pukse' 'p' sound, 'u' sound, 'k', 's' sound, and 'e' sound. There are twenty two phonemes in Daju language shown in table (4.3.1) Symbols from the International Phonetic Alphabet are used in this table and throughout the research. All root forms are written phonemically and all other forms are written phonetically.

Table (4.3.1) the phonemes of Daju language (consonants).

	Bilabil	**Post-alveolar**	**Alveolar**	**Palatal**	**Velar**	**Glottal**
Stops, voiceless	P		t	c	k	h
Stops, voiced	b		d		g	
Implosives	ɓ		ɗ	ʄ		
Fricatives, voiceless and voiced		ʃ	s z			
Nasals	m		n	ɲ	ŋ	
Lateral Approximate			l			
Flap			ɾ			
Semivowels	w			j		

All consonants occur word-initially and word-final with the exception of the phonemes /z/ is not occurring in word-final. All consonants occur intervocalic. The palatal consonants /c/ is pure stops. The /ʄ/ phoneme is less frequent than other implosives, but contrasts with other phonemes and occurs in clearly native words. All consonants, occur finally with the exception of the phonemes /ʄ, ɓ, z and w /.

1.6 The vowels in Daju Language :

The phonemic inventory contains ten vowels, counterparts, as shown in.

Vowel Phonemes of Daju language :

Table (1.6.1)

i	**u**
e	**o**
	ə

phonetic

Table (1.6.2)

ɪ	**ʊ**
ɛ	**ɒ**
	ɑ

phonemic

Examples of the vowel /i/:

/i/	*/ ʃiŋdé/*	*knee*
/i/	*/ ligide/*	*shadow*
/i/	*/ izige/*	*Dogs*
/i/	*/sitte/*	*rope*

Examples of the vowel /e/:

/e/	/leɾe/	Playing ground
/e/	/teɾe/	booking
/e/	/meɾte/	Thorn fence
/e/	/ɾɒŋe/	sun

Example of the vowel /ə/:

/ə/	/kəndəne/	hen
/ə/	/məŋge/	Milk
/ə/	/bəŋge/	Swelling
/ə/	/təkke/	cow

Example of the vowel /o/

/o/	/joŋe/	keeping
/o/	/loŋe/	Small valley
/o/	/ŋoꟻohe/	Blind person
/o/	/owde/	Bird

Example of the vowel /u/ː

/u/	/uzu/	To below
/u/	/cuɾne/	Granary
/u/	/buke/	Ruler
/u/	/ubuŋe/	Deaf

The alternation between [a] and [ə] is due to stress. If the syllable with /a/ is stressed sound /a/ and if not sound /ə/./ɪ/ front closed vowel it differs from vowels /iː/ that is not so close and much nearer the half close than the close position, and it is ashort vowel. The tongue is raised. It is raised a little above ' half-close'. The lips are spread or neutral.

Examples of the vowel /ɪ/ː

/ɪ/	/ɪke/	Mouth
/ɪ/	/ɪtte/	Faster
/ɪ/	/ɪje/	Meat
/ɪ/	/ɪske/	Kind of trees

Examples of the vowel /ɛ/ː

/ɛ/	/ɗɛɾɑ/	what
/ɛ/	/ɑwɑtɛ/	Bird
/ɛ/	/ɑwɛtɛ/	Walk
/ɛ/	/sɒɾɛ/	Abook

Examples of vowel /ʊ/:

/ʊ/	/ʃʊke/	urinate
/ʊ/	/kʊrɛ/	Rain
/ʊ/	/wʊrɛ/	Woman
/ʊ/	/ɟʊkɛ/	Seed

Examples of the vowel /ɒ/

/ɒ/	/pɒksɛ/	Bring things
/ɒ/	/lɒgɛ/	Liquid
/ɒ/	/kɒrɛ/	Rain
/ɒ/	/mɒrɛ/	well

Example of the vowel/ ɑ/

/ɑ/	/mɑge/	water
/ɑ/	/pɑge/	Pot of water
/ɑ/	/kɑcɪ ne/	Donkey
/ɑ/	/ɲɑbrɛ/	Tongue

1.6.1 the mid vowel /e/ and /o/

/e/ and /o/ have allophones [e ɛ] and [o ɔ] determined by syllable structure: the close allophones [e o] occur in open syllables, and the open allophones [ɛ ɔ] occur in closed syllables. Examples with close allophones in open syllables are shown in the example:.

/boie/	*'rooster'*	*[boie]*
/kooni/	*'now'*	*[kooni]*
/lede/	*'owner'*	*[lede]*
/pene/	*'son'*	*[pene]*

While examples of the open allophones in closed syllables are shown below:

/bodke/	*'to reclaim'*	*[btke ~ bodike]*
/ndolke/	*'to loosen'*	*[n dlke]*
/deke/	*'to climb'*	*[_kkedeike]*
/edke/	*'to crawl'*	*[__tke ~ _edike]*

These vowels become open before geminates vowels as in the fallowing example

/okkce/ *'caterpillar'* *[_kkice]*

/ette/ *'tree'* *[tte]*

Long vowels become open in a closed syllable as shown in

/meeske/ *'to lose'* *[mske]*

/mooske/ *'to rot'* *[mske]*

1.6.21Vowel length:

Vowel length is contrastive in both verbs and nouns. Contrastive pairs exist in the fallowing example:

/meeske/	*'to lose'*	*[meeske]*
/mes-ke/	*'to have intercourse'*	*[meske]*
/wiiske/	*'to satiate'*	*[wiiske]*
/wis-ke/	*'to metamorphose'*	*[wiske]*
/mooske/	*'to rot'*	*[mooske]*
/moske/	*'to squeeze'*	*[moske]*
/uuke/	*'to cough'*	*[uuke]*
/uke/	*'to drink'*	*[uke]*

1.7 The Tones in Daju language:

Daju is a tonal language, that each of its ten vowels /i e u ə o - ɪ ɛ ɑ ɒ ʊ/ have low tone and high tone. In a preliminary study of tones suggest there are two tones: high (H), low (L) . There are only two patterns on two syllable nouns, namely all high or all low, examples of which are given in Table (4.5.1)

Table (1)he tone melodies in noun:

Low Tone	High Tone
/sògè/ LL ‘ road’	*HH /ízé/ ‘goat’*
/pììdè/ LLL ‘middle’	*HHH /wane/ ‘other’*
/tùmnè/ LL ‘ostrich’	*HH /cénné/ ‘half’*
/ùndè/ LL ‘ear’	*HH /éré/ ‘foot’*

There are few high tone nouns. Verbs with short root vowels can take one of two tone patterns. The two groups as H-tone verbs and L-tone verbs since H-tone verbs contain always begin with a H tone, while L-tone verbs begin with a L tone in most forms. In table,(2) L-tone verb is shown in the present and non-present tense .Verbs with two syllable roots show similar patterns, but further research needs to be done.

Table (2) the tone melodies in verb:

Present	tone	Non-Present	tone
/ág álè/	*H L*	*/àg álì/*	*H L*
/ ìg álè/	*H L*	/ìg ál /	*H L*
/àní álè/	*H L*	*/ àni álì /*	*H L*

The verbs with short root vowels only take one of two tone patterns, H or L, verbs with long root vowels exhibit one of two tone patterns, all of which begin with H. The patterns are shown in Table (4.5.2) Pattern two HL.

1.8 The vowel Harmony in Daju language:

As the case with a large number of Nilo-Saharan languages, Daju language seems to exhibit full symmetric of vowel harmony, because the root vowel of certain words influence the suffixes and few prefixes, they are ten vowels:

[i] [u] [ɪ] [ʊ]

[e] [o] [ɛ] [ɒ]

[ə] [ɑ]

+ATR − ATR

Table (4.6.1) the distribution of the vowel harmony in Daju language:

Vowel	First root vowel	Examples in Daju	Gloss in English
ə a	ə ə	kə̀ndə̀né àrtə̀gé	Hen Grass horses
i	I	ìzìgé dìgìné tìgìné	Dogs black smith Axe
e	e		
u	u	ɟúrúccé	Clay
u	u	ɲúrúccé	Claw
o	a	Òlágé Òrágé	Eggs Animals
a			
o o	ə ə	Òttə́gé Còrtə́ké	Places Drums
ɒ	ɒ	Cɒ́pɒ́ŋɛ́ Pɒ́kókɛ́	Beard Fox
ɪ ɪ	ɪ ɪ	Lɪ́gɪ́dɛ́ Kɪ̀wɪ̀ntɪ́ccɛ́	Shadow Thorn
ʊ	ʊ	ɲʊ́rmʊ́ccɛ́	Ant
ɑ	ɑ	ɑ̀ pɑ̀ hɪ́ccɛ́ kɑ́ dɑ́ nɛ́ cɪ̀pɑ̀ rnɛ́	Hair Net Spindle
ɛ	ɛ	Bɛ́rkɛ́ncɛ́ Tɛ́rɛ́ Lɛ́rɛ́	Wild dove Booking Playing ground
		Mɛ́rtɛ́	Thorn fence

ATR harmony as described above is appearing in great majority of Daju language. There is a quite different type of vowel harmony, which again appears to be unique to Africa. This type has three common variants according to the vowel system.

a. ɪ u i ʊ ɛ ɒ a	/ɪ/ is replaced by	/ɛ/ after stem	/ɛ ə/
	/ʊ/ is replaced by	/ə/ after stem	/ə/
B. i u e o ɛ ə a	e is replaced by	ɛ after stem	ɛ ə
	O is replaced by	ə after stem	ɛ ə
c. i u ɛ ə a	i is replaced by	ɛ after stem	ɛ ə
	u replaced by	ə after stem	ə

Vowel harmony if the first vowel of the root is u/ʊ or o/ɒ

then the prefix vowel is u/ʊ as in /ɲʊ́rmʊ́ccɛ́/, ɑ̀ pɑ̀ hɪ́ccɛ́

4.7 The syllable in Daju language:

The individual phones making up the word sequence in which those phones are produced. The other factors of pronunciation are general rules governing how words of Daju are pronounced. When the speakers pronounce a word like ‘kəndənɛ’, people don’t pronounce or perceive it as a simple string of sounds. The phones are grouped together into ‘beats’, these ‘beats’ making up the word give it a rhythm. These ‘beats’ and rhythm come out natural, when the speakers speak words slowly a person can receive it in syllable as in the examples below:

[kən.də.nɛ]	*' hen'*	*[dʊ.ŋge]*	*'not exists'*
[pʊŋ.pʊŋɛ]	*' sand'*	*[ŋæ.ɾæ.dɛ]*	*'cousin'*
[Ən.də]	*'hand'*	*[iː.sɛ]*	*' dog '*
[wən.wən]	*' hot '*	*[ɾmə]*	*' follow'*

The beats making up the sound-structure of the word are called syllables. Syllabification: is the process of diving speech into discrete syllables. Any speakers know when they know their language is how to divide words into syllables, so the knowledge of how to do that is represented in our brains in

some way. Perhaps we just memorize it on a word-by-word basis. For every word of a language, there's a lot you have to memorize (sound, meaning, part-of-speech, etc.). Maybe the way that the word is broken down into syllables is just one of those things. Breaking down a word into syllables is called syllabification. The syllabification of word is being memorized in to a word-by-word basis. The study of general rules that govern how words are pronounced in a language; is called the internal structure of syllables.

4.7.1 The Structure of Syllables:

Phonology aims to understand the rules of particular language's syllable structure. In phonology each syllable is broken down further into smaller parts. There were many theories that discussed the syllables structure. The researcher fallow two theories to investigate Daju structure multi-tiered and cv tier theories.

4.7.2 C V Tier Theory:

The Cv tier which defines functional positions within the syllable, as well as allowing a simple account of such syllable-related phenomena. A diphthong can be shown as two vowel qualities functioning as, or filling the position of, a single vowel; or lengthened or geminate consonants can be represented as a single segment spreading over two C position. It is a theory of syllable representation which characterizes the syllable as autosegmental system.

The phonological structures in Daju for the nouns roots after the singular classificatory suffixes –ne, -ce, and –e are removed from the noun; and therefore longer structures do exist in Daju language. C indicates to any consonants, while V indicates any vowels for example:

Soce	cv-	'tear'
Ise	vc-	'head'
Murtine	cvcc-	'horse'
Kəməlgine	cv.cv.cc-	'camels'
Mirmirce	cvc.cvc-	'root'

The longer structures find in reduplicated words:

Bos.bos.oŋ-ce	cvc.cvc.vc-	'bush'
/ pʊŋ.pʊŋɛ/	cvc.cvcv	sand

Another case in Daju structures including the suffixes and vowel ending are :

/Le.ge /	cv.cv	smoke
/ʃiŋ.de/	cvc.cv	knee
/kɒcce/	cvccv	cat
/dɪ.ɾəŋ/	cv.cvc	what?
/ən.də/	vc.cv	hand
/iisɛ/	vvcv	dog
/pr/	cc	red
/mu.cce/	cv.ccv	liver
/ahkɛ/	vccv	cooking
/ɗə.ppɪŋ.ɗɛ/	cv.ccvc.cv	mat
/kokk.olo.gɛ/	cvcc.vcv.cv	cock

These are the most common patterns of syllables structure in Daju words.

4.7.3Multi-tiered phonological theory:

Onset is the consonants that begin the syllable .Nucleus is the sound in the middle of the syllable usually a vowel and Coda is the consonants that end of the syllable. Syllables can differ in size: Some syllables do not have onsets, they are called zero onset. e.g. [ɪkɛ, ɪtɛ] some syllables do not have codas. e.g. [sɛ, sɛɛ, mɛ, mɛɛ]. Any language has a nucleus, but there is exception; in Daju language there is a word with no nucleus: e.g. [pr]. 'means red'. These rules found in Japanese word [aoi], Hawaiian's word [Aiea] and Serbian adjective [srpsk].

Table (4.7.1)Syllables brake in multi-tier.

Here are some syllables, broken down into their parts:

Syllable	Onset	Nucleus	Coda	Nucleus	Gloss
[pr]	[pr]	-	-	-	red
[mɛ]	[m]	[ɛ]	-	-	this
[tɪtɪ]	[t]	[ɪ]	[t]	[ɪ]	Over
[ŋæsɛ]	[ŋ]	[æ]	[s]	[ɛ]	stream
[ɲæbrɛ]	[ɲ]	[æ]	[br]	[ɛ]	tongue
[rɒŋɛ]	[r]	[ɒ]	[ŋ]	[ɛ]	sun
[meinɛ]	[m]	[ei]	[n]	[ɛ]	father
[clɛ]	[cl]	[ɛ]	-	-	slave

Both parts of a diphthong count as being in the ‘nucleuses of the syllable. The major generalization, the researcher capture from these syllable types are: Daju syllables have neither one consonant onset nor combine with two or more consonants onset as in mb ,nd, and ŋg as illustrated below in phonotactics. Daju allows coda that contains at most tow consonants it is a (cc).

4.8 Phonotactics or sequence of sounds

The study sequences of phonemes that occur in languages and sound structures that they form. In this study it is usual to represent consonants in general with the letter ' C' and vowels with the letter ' V'. The IPA symbol used to show a division between syllables is the dot [**.**].

The pre-nasalized stops /mb/, /nd/ and /ŋg/ are being interpreted as unit phonemes rather than clusters because they occur in all stem consonants positions. In Daju language the voiced pre-nasals have fallen together with the equivalent non-glottal, oral voiced stops. In addition to pre-nasalized stops in Daju interpreted as a clusters rather than unit phoneme as Ehret claimed. For example fallow three tables below (4.7.2), (4.7.3) and (4.1.4) discussed the phonotactics.

Table (4.8.1) of the phoneme /m͡ɓ/:

Phoneme	Initial	Gloss	Intervocalic	Gloss	Final	Gloss
/m͡ɓ/			/kəmbonɛ/	Ax		
/m͡ɓ/			/kəmbɑne/	Eagle		
/m͡ɓ/			/tomboleŋe/	Fly		

Table (4.8.2) the phoneme /n͡ɗ:

Phoneme	*Initial*	*Gloss*	*Intervocalic*	*Gloss*	*Final*	*Gloss*
/n͡ɗ/			/kəɓɓʊn͡ɑcce/	Bark		
/n͡ɗ/			/ʃʌn͡œ/	A sheep		
/n͡ɗ/			/ən͡œ/	Where		
/n͡ɗ/						
/n͡ɗ/	/n͡ɑmaŋe	Wild cat				

Table (4.8.3) of the phoneme /ŋ͡g/:

Phoneme	*Initial*	*Gloss*	*Intervocalic*	*Gloss*	*Final*	*Gloss*
/ŋ͡g/	/ŋgænɛ/	Count	/meŋgɛ/	Milk	/ɑŋ͡ʠ/	Name
/ŋ͡g/	/ŋgeloke/	Salt	/ɲeŋgɛ/	Stars	/ɗiŋ͡g /	Lick
/ŋ͡g/	/ŋguruʃke/	Money	/suŋge/	Sleep		
/ŋ͡g/	/ŋ͡goske/	Smell	/wəŋgə/	Leave		
/ŋ͡g/	/ ŋ͡gidice/	Breast				

Prenasalized stops contrast with regular stops and simple nasals in almost all positions. All of the prenasalized stops, /mb/, /nd/, and /ŋg/ occur word-initially as shown in tables (4.8.1), (4.8.2) and (4.8.3). In initial position the prenasalized stops are being lost in certain geographic areas where people are shifting from Daju to Sudanese Arabic, and thus losing consonants that do

not exist in Sudanese Arabic. This language shift can most clearly be noted in the town of lagawa, the area most affected by Sudanese Arabic. Younger speakers generally do not speak Daju, as Arabic has taken over as the language of preference and many adult middle-age speakers do not make the prenasalized distinction. An example of this phenomenon is illustrated with the words /cʊmdunɛ/ 'date',/ɲɑlɑnɛ/ 'chat' /pʰɑʃrnɛ/ 'the people of Sultan' and /ʃɑlɑnɟɛ/ 'the beautiful girl ' . In any other towns of the Sudan, /ʃendɛ/; sheep' this word may be pronounced as[tə.mɒɾɾ.nɛ], [nyalane], [fashirne] and [zalinge] depending on the speaker. This variation does not occur in lagawa's village settings where the contrast between prenasalized stop and simple nasal is maintained. The equence [mb,nd, and ŋg] is a possible onset in Daju syllable. The first syllable ends with [mb] the sequence [mb] is not a possible coda.

4.9 Phonotactics Constraints in Daju language :

The rules that characterize permissible syllable structures in a language are called phonotactics constraints (or just 'phonotactics'). 'phono' = sounds ; 'tactic' = touching (which sounds can 'touch') .Different languages have different phonotactic constraints.

Table (4.9.1) Phonotactic constraints.

Sound	*Initial*	*Intervocalic*	*Final*	*Gloss*
Mb	*mbas*	-------	-------	*Slap*
Nd	*ndɒb*	----------	-------	*Choose*
ŋg	*ŋgakɛ*	----------	--------	*Speech*
-------	----------	----------	----------	----------
Mb	----------	*dʊmbʊrnɛ*	----------	*Trunk*
Nd	----------	*Pɛndɛ*	----------	*Wound*
ŋg	----------	*Tuŋgrɪcɛ*	----------	*Louse*
Mb	----------	----------	*None*	---------
Nd	----------	----------	*wadand*	*Travel*
ŋg	----------	----------	*dɪŋg*	*Lick*

In Daju language [nd], and [ŋg] are possible onsets and coda. [mb] is possible onset, but is not possible coda. Thus the table explained first, it says that an

onset made up of two consonants has to start with [m, n, and ŋ]. Next, it says that the second of the two consonants must be [b], [d], or [g] Then, it says that if the second consonant is [b] then the first consonant has to be [m]. Then, it says that if the second consonant is [d] then the first consonant has to be [n] .Finally, it says that if the second consonant is [g], then the first consonant has to be [ŋ].

4.10 Phonotactics and Syllabification

These phonotactic constraints play a major role in syllabification. However, phonotactic constraints don't explain everything, because any language its own phonotactics and syllabification:

For example, in Daju language the word /pr/ "means red " it consistents with no vowel .it syllabifies as: Pr [cc] is possible in Daju syllable, this phenomena is not found in Daju only, but in other languages as Serbian language [srpsk] a form of the Serbian adjective; also some languages have words with no consonants at all such as the Hawaiīan place name [Aiea] and so Japanese word [aoi] means 'blue ' but not possible in English syllable, because no word in English has no nucleus.

4.11 Supra- segmental Features:

There are two features in Daju language to produce a word; voicing assimilation and epenthesis of /i/ the choice of which repair strategy to choose is quite possible idiolectal or dialectal as both are used for the same structures. People use one or the other, but the two forms do not alternate for the same speaker.

4.11.1 Voicing Assimilation:

/mɑlasigɐ/ spears [mɑlɑzgɐ]

/iise/ dogs [iize]

Assimilation with the phoneme /s/ becomes /z/

/ɑdikɐ- ɑpkɐ/ to tie

/todike-totk to stop

/ode/ bird

/ottige/ birds

So voicing is assimilation in only five sequences consonants /b/, /d/ and /g/, before /k/ and /s/ before /g/ or /n/.

The vowel /i/ epenthesis:

/kok-ne/ snake [kokin **]**

4.12 Geminating in Daju language:

There are certain common types of consonantal sequences which have special names in the phonetic literature and some of which function as single units in particular languages. All of the special sequences are homorganic, that is, they are articulated by the same organs. The first special sequence type is known as geminate.

Examples in geminations in Daju language:

(4.12.1) The phoneme /ss/

a. màːssɛ́ fire

b. assīˈncɛ́ hand/s

c. éŋˈassíncɛ́ finger/s

d. kˈíssɪ́pɪ́kɛ́ small lizard

e. āːssɪ́ŋ ten

(4.12.2) The phoneme /ll/

a. cɪ́llɛ̀ slave

b.ɟɪ́ll black

c. səllɛ́ swor

d. ʃəllɛ́ young woman

(4.12.3) The phoneme /kk/

a.ɟʊ́kkɛ́ seed

b. ʃʊ́kkɛ́ urine

c.kōsmɒ́kkɛ́ iron

d. pɪ́kkɛ́ persons

e. kúkúkkɛ́ laughing

(4.12.4) The phoneme /cc/

a. ŋāníccɛ̀ stone

b. ɟʊ́rʊ́ccɛ́ clay

c.ɲʊ́rʊ́ccɛ́ claw

d. mʊ́ccɛ́ liver

e. wʊ́ccɛ́ stitch

(4.12.5) The phoneme /tt/

a. sɪ́ttɛ̀ rope

b. dòttānɛ́ rock

c.sāttɛ́ gourd

d. oˈttəkɛ́ places

Through the examples above, the researcher observes:

all set between intervocalic a-ɛ, ɪ-ɛ, ʊ-ɛ,o-a, o-ə, with the exception /ll/ in example 2-b. also /ll/ , /cc/ and /tt/ set always in primary stress; in addition to phoneme /kk/ set in gourd, plural. /cɛ/ and /kɛ/ are suffixes. [e]

Ret-ne/ fish trap [retine]

When /i/ is epenthesized because the open vowels /ɒ/ and /ɛ/ become close in open syllables and the syllables structure must be change after voiceless stops.

CHAPTER FIVE

5.1. Summary of the study:

This research is an attempt to study the phonological system of Daju language in terms of phonetic inventory; arrangement of sounds and syllabic patterns that distributed in, the appendix (5.1). The study is then basically concerned with the description of Daju sounds in terms of place and manner of articulation and voicing. Appendixes (5.4), then the study investigate two theories cv-tier and multi-tier in terms of syllable structure, syllabification and fonotactics constrain, and geminating consonants, in addition to the study discusses vowels system, tones and vowel harmony. Eventually the study discusses supra-segmental features in terms of voicing assimilation.

5.2 The results of the study:

1. Daju language has twenty two consonants and ten vowels. All consonants occur word-initial and word-final with the exception of the consonat /z / is not occurring in word-final table (4.1.14). All consonants occur intervocalic. The palatal consonant /c/ is a pure stop. The consonant /ɟ/ is less frequent than other implosives, but contrasts with other consonants and occurs in clearly native words. All consonants occur finally with the exception of the consonants / ɟ, ɓ, z and w /. In Daju language voicing is a feature that varies according to whether or not the vocal cords vibrate during the articulation of a sound; for example the phonemic fricatives /s/ and /z/; the voiceless fricatives /s/ becomes voiced preceding a voiced consonant. Such as /iise/ dog /iizge/ dogs. In addition to the study gives insight into how Daju sounds are combined together along with coverage of the varying syllabic patterns that Daju phonology exhibits. In Daju language the nasals combine with bilabial plosive /b/ to mention [mb]; therefore alveolar ridge plosive /d/ combine with /n/ to mention [nd] and the nasal palatal /ŋ/ combined with a voiced stop velar /g/ to mention [ŋg]. Thus [nd], and [ŋg] are possible onsets and codas. [mb], is a possible onset, but is not a possible

coda. Thus the table (4.7.5), explaines that, an onset made up of two consonants has to start with [m, n, and ŋ]. It says that:

1-The second of the two consonants must be [b], [d], or [g].

3- if the second consonant is [b] then the first consonant has to be [m].

4-if the second consonant is [d] then the first consonant has to be [n], and

5-if the second consonant is [g], and then the first consonant has to be [ŋ]. In Daju vowel system the mid vowels /e/ and /o/ have allophones [e ɛ] and [o ɒ] determined by syllable structure: the close allophones [e o] occur in open syllables, and the open allophones [ɛ ɒ] occur in closed syllables. There are three tones in Daju language H, L, HL or LH. Germination in Daju language occurs in five consonants, /kk/, /tt/, /cc/ /ss/ and /ll/. All set between intervocalic a-ɛ, ɪ-ɛ, ʊ-ɛ,o-a, o-ə, with the exception /ll/; also /ll/ , /cc/ and /tt/ set always in primary stress; in addition to phoneme /kk/ set in grand, plural. /cɛ/ and /kɛ/ are suffixes. There are six patterns in Daju language the maximum sequences is ccc as in /askkɛ/ vcccv. Such as the phonemes in table (5.2).

5.3 further studies:

1. There are many subjects need to study as syntax, semantics as a whole.

2. A common believe that Daju speakers speak English easily when they are exposed to it and the researcher would like to prove or disprove this assumption through the phonological aspects of both, Daju language and English language

3. There are some issues needed to discusses in Daju language; vowel length in verbs and nouns and stress.

4. The death of Daju language; in specific area in North Kordofan State, (kasgail, khor Taggat and Nawa).

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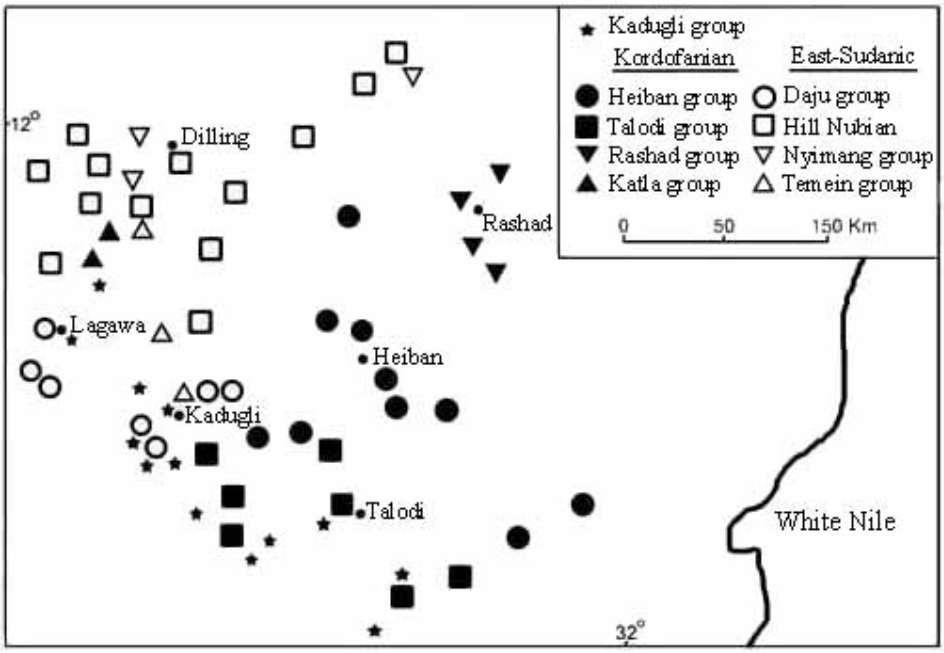
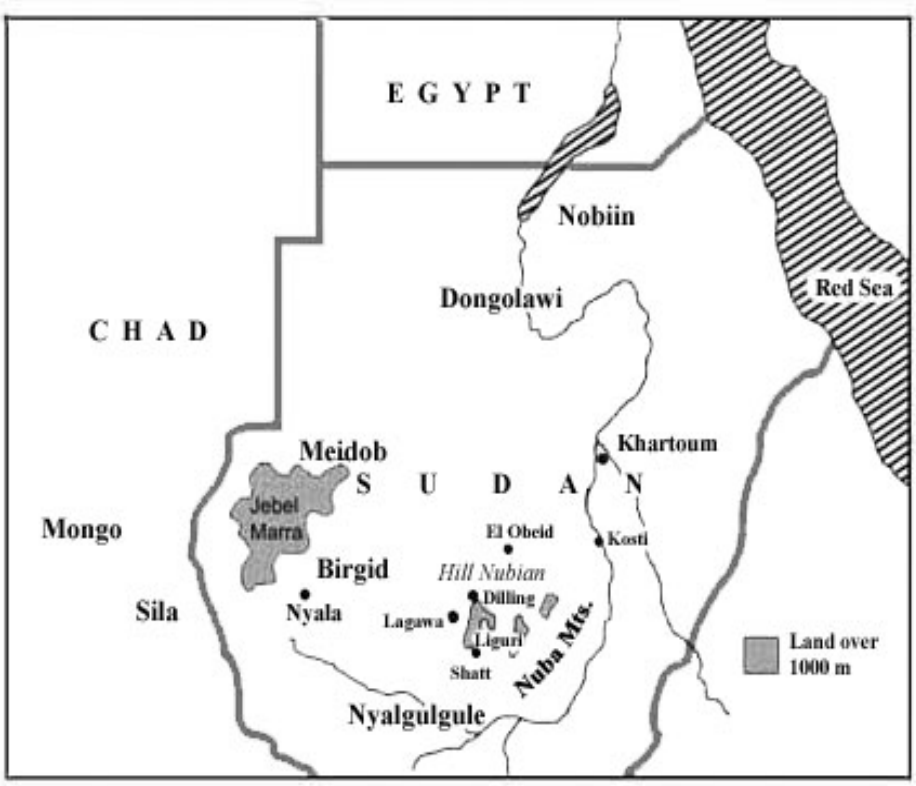
Appendix 1

Map 1:Telwall, R.(1966:5), Language distribution in the Nuba Mountains:



Appendix 2

Map 2: Jungraithmayr, H (1983:3), the distribution of the Nubian and Daju language groups



Appendix 3

Table (5.1) Distribution of phonemes in Environment chart

Phoneme	Initial	Gloss	Medial	Gloss	Final	Gloss
[p]	Pʰɛ́ndɛ́	wound	Pʰúŋpùŋɛ̀	Sand	----------	----------
[t]	tʰbə	At home	mɒ̄rtɛ́nɛ̀	Horse	--------	-------
[tʃ]	cùlcɛ̀	Charcoal	wā cɪ́ nnɪ	Afternon	ʊ́cɛ̀	Stay
[k]	kɒ̄rɛ̀	Rain/sky	məkɛ̀	Gum	mədak	Five
[b]	Bədɪkɛ	Gossip	Tbɪːjdɛ	Meddle	---------	--------
[d]	Dul	Pass	gudardar	coagulat	ɗede	Share
[ɟ]	ɟɛjnɛ	Ladle	ŋgɒɟɪwɛ	Blinder	----------	----------
[g]	gɪm	Mark out	agɪrɛ	Sterile	Sag	Crack
[ɓ]	ɓadɛ	Painful	kʌɓəcɛ	Shoe	----------	----------
[ɗ]	ɗaɲɛ	Step on	Krɛɪɗɛ	Crane	----------	----------
[ʃ]	ʃukɛ	Urinate	ɪʃmeɪrɛ	Moon	Puʃ	Brown
[s]	səlɛ	Sword	muːsɪnɛ	Doe	bɪs	Fill
[z]			īzē	dogs		
[h]	hɪlnɛ	Village	Pʌhtɪndɛ	Seven	ɓɪdɪh	Two
[m]	mɑ̄sɛ̀	Fire	kəməlɛ́	Camel	rɒm	Duplicate
[n]	nʌŋ	mine	ʊ́nùtɛ̀	Ear	nʌn	Theirs
[ɲ]	ɲœbrɛ́	Tongue	wəɲwəɲ	Worm	wəɲ-wəɲ	Worm
[ŋ]	ŋœsɛ̀	Stream	Púŋpúŋɛ̀	Sand	ɓaŋ	Call
[l]	lɪ̀gdɛ̀	Shadow	səlɛ́	Sword	dul	Pierce
[r]	rʊ́ŋɛ́	Sun	ɛ́rɛ́	Foot	laːʃr	Green
[w]	walce	Egg	cawari	Clean	law	Hunt
[j]	jəhəkɛ	Call	ɪjɛ	Meat	wij	More

Appendix 4

Table 5.2 consonants of the Daju Lagawa orthography

	Bilabial	*Post-alveolar*	*Alveolar*	*Palatal*	*Velar*	*Glottal*
Stops, voiceless	*p*		*t*	*C*	*k*	*h*
Stops, voiced	*b*		*d*		*g*	
Implosives	*ɓ*		*ɗ*	*ʃ*		
Fricatives, voiceless and voiced		*ʃ*	*s z*			
Nasals	*m*		*n*	*ɲ*	*ŋ*	
Lateral Approximate			*L*			
Flap			*ɾ*			
Semivowels	*w*			*J*		

Appendix 5

Ŋdɛkɛ se æŋdeɪnɪ æŋɑdɛ ɑnɪ ɪkɛcɛgɛ kʌdɒs jkɛ pɒkɛ ɪk ɛrgɒnɛ lɛ ɪk ɪnglizkɛ

What I'm saying will be in three languages Daju language, Arabic language and English language

əŋgæŋ Elzain .

ægmn baɪnə.

baɪnə hɪlɪnə tɒ læwɛ

læwɛ ɑnlɪ tɒ wɪ lɑɪjən cɛnʊːb kʊrdɒfænɛ

my name is Elzain . I'm from Byna

Byna is a village in Lagawa .

Læwɛ ɒːdɛ ʃəgldɛ

æb kɛ wæl wælɑɪwɑː ɑnɪ ɟɛpɾkɛ lɛ ŋæsɛ ckcgɛjdɛ klɛŋ

Lagawa is a beautiful area it is surrounded by mountains and a big

Sandy stream.

Tgɒɾ ɛləe tɒ Elʊbjɪd ɑnɪ wɾæŋlɛ pɲcʌŋ əgəʊpeŋærn ɪɲ cɒkɛ pəbæŋgɛ kʌdɒs lɛ ɪɲcʊkɾɛgɛ kʌdɒs.

now I live in Elobeid with my wife, sons and daughters .

Simple sentences

1. **positive sentences**:
2. æŋgɛŋ Elzain
3. my name is Elzain
4. æŋgŋgə Suleiman
5. your name is Suleiman
6. meiŋgəe æŋgeinɛ Ibrahim
7. your father's name is Ibrahim

8. 2.Interrogatives sentences:

9. æŋgʌŋgə mnə?

10. what is your name ?

11. æŋgeneɪ mnə ?

12. what is her (his)name ?

13. æŋgŋ mnə ?

14. what is my name ?

15. ɗə́ʊɗə̄ ?

16. what are you going ?

17. mɒrtŋ mn ɗə?

18. Where did you come from?

19. mæ ɗijærə?

20. What is this?

21. məʌe ɗijærə?

22. What is that?

23. Sæ ɗijærə?

24. What are those?

25. Sæʌə ɗijærə?

26. What are those?

27. mæ mnənə

28. who is this

29. mæʌə mnənə

30. who is that

31. sæ mnənə

32. who are those

33. sæʌə mnənə

34. ɗijærə səʊ nɪ?

35. What are you doing?

36. In this case the pronoun implicit used for both male and female singular present person

37. ɗìjærə ən səʊ nɪ?

38. What are they doing?

39. In this case the pronoun "ən" used implicit for the plural male and female .

40. 3. wh-question words :

41. krem how (many, much)

42. pɒhkɛ when

43. ɗirə why

44. ɗiærə what

45. nemnænə whose

Examples :

A. Kəcne mə nemnænə ?

B. Whose donkey is this?

A. ʃʊkəŋge sə ɑnɪ krem ?

B. how much are these clothes ?

A. kəʊeŋgæsɪɲce krem ?

B. how many fingers do you have ?

A. əbwndŋ pɒhkə?

B. When is he coming ?

A. ɗiərə knəʊɟʌnə ?

B. why did you run ?

A. æŋkɪɟɪg pɒhkə?

B.When were you born?

A. ɗijærə ksɒgnə ?

B. what did you do

Numeral in Daju language

nwæ.nɛ	one	two syllables
pdɛh	two	one syllable
kədɒ.s	three	three syllables
tʃʃ.pɛ	four	two syllables
əræn	six	one syllable
pʌh.tɪn.dɛ	seven	three syllables
kɒ.sɒ.ndɛ	eight	three syllables
tbʃ.tæ.ndɛ	nine	three syllables
æ.sɪːŋ	ten	two syllables

APPENDIXES

5.1 Language distribution in the Nuba Mountains.

5.2 Distribution of the Nubian and Daju language groups.

5.3 Distribution of phonemes in Environment chart.

5.4 Consonants orthography of Daju Lagawa.