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Proto-Reconstruction of Selected Indigenous Languages of Adamawa State

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ABSTRACT
The aim of this research is to carry out a proto reconstruction of indigenous languages spread across the zones of Adamawa State with a view to highlighting the similarities in the languages of the state. Based on the linguistic premise that language is an embodiment of culture, a means of integration and a means of identity, the major goal of this research is to identify similarities in the indigenous languages of Adamawa state in order to expatiate on the hypothesis of the research that languages of the state and by implication, the indigenes are from the same roots or origin. The comparative analysis of this research will be based on theComparative Method and the Lexical and Morphological Comparisons method. The descriptive and quantitative methods were adopted as words were studied. The counting system of the languages were collected to form the corpus of the research. Representativeness was a criteria in order to ensure that the 3 zones of the state were represented. In line with the hypothesis, findings revealed similarities in most of the languages, the differences in zones notwithstanding.

Key Words: *Protoreconstruction, Indigenous Languages, Adamawa State*

I. INTRODUCTION

1.1 Background of the Study

The importance of language to humanity cannot be overemphasized. Language as the vehicle of communication is a determining factor of either the success or failure of every endeavor in life including peace and unity which is a prerequisite for the development of any state or nation as a whole. This is due to the fact that without communication, it is difficult to make progress. Robins (2021), defines language as a system of continual spoken, manual or written symbols by means of which human beings as members of a social group and participants in its culture express themselves. He further states that the functions of language include communication and the expression of identity, amongst other things. Omachonu (2016) also itemizes some functions of language as medium of thought, referential function, abnatural function, affective function, phatic function, identification, recording and transmission of culture. An overview of the functions of language gives credence to the fact that, language is a means of integration, an embodiment of a people's culture and therefore, a means of identification. The power of language as a means of identification and integration is evident in the Nigerian situation (Adamawa state inclusive) where even political affiliations seem to most often than not, be determined by an individual's language or tribe. It is common knowledge in Nigeria that the effect language has on a Nigerian is similar to the effect that the power of religion has on him/her.

The language situation in Nigeria is a multilingual one. The number of languages in the world is placed at over 6000 and Nigeria is said to be home to 520 languages (Ekpe, 2010). This implies that, Nigeria alone accounts for nearly ten percent (10%) of the world languages. Omachonu (2016) tracing language family tree states that Nigerian languages comprise of Chadic languages, Niger-Congo, Nile-Saharan languages and one language isolate. However, though these groups are only four in number, most Nigerians are not aware of this fact and hence diversity increases with over 500 languages at play. The situation in Adamawa State is a similar one as Benson (2020) mentions between 80-90 languages. Most social associations and even political affiliations in the state are most often than not, formed based along the lines of these languages.

Yule (2010) traces the concept of language family trees to 1786 when Sir William Jones, a British government official in India noted the strong

affinity between Indian Sanskrit language, the Greek and the Latin languages; there were similarities in the meaning and alphabetical composition of some words. Jones concluded that these similarities were not accidental and argued that geographical differences notwithstanding, the languages share a common ancestral origin and therefore come from the same source. By implication, users of the language are also from the same source and therefore same. The language family tree as a concept emerged in the 19th century to capture the fact that languages that seem different have a common source of origin. The source language is the original form from which other languages emanate and it is called proto. Cognates provide relatedness of languages and according to Yule (2010), a cognate is a word in one language found in another language that has a similar form and 'is' or 'was' used with a similar meaning. Cognates involve looking for ancestral connection between languages by identifying similarities in them. The language family tree brings to the fore, the fact that modern people whose languages belong to the same language family tree have the same ancestors.

1.2 Statement of the Problem

Adamawa state like other parts of Nigeria or the world has not been devoid of her own share of conflict especially along tribal/ethnic affiliations. For example, clashes between the Bwatiye and Fulanis garnered national and even international attention. Livinus (2018) reports that since 2016, armed Fulani militia attacks over grazing land around the Benue River banks in Numan, Demsa and Girei have claimed over 222 lives, according to Pene Da Bwatiye (the socio-cultural umbrella group for natives living around the Benue trough of Adamawa). It is important to state here that conflict and peace cannot coexist. Therefore, when there is conflict, there will be no room for peace or unity which are both a sine qua non and prerequisite for societal development. Furthermore, as far as indigenes of the state continue to see themselves as different or separate, based on their different ethnic groups or languages, it is easy for conflict to occur in certain instances e.g. the struggle for scarce resources and leadership positions. This is due to the fact that feelings of isolation, alienation and division certainly do not auger well for the state as even politics which embodies governance is affected by ethnicity. Uwaifo (2016) states that the origin of ethnicity in Nigeria can be traced to the nation's colonial experience, particularly the amalgamation of the Northern and Southern protectorates of Nigeria in 1914. He further listed some of the factors that amplified ethnicity and ethnic politics as: power struggle, resource allocation and control as political parties are more or less formed based on ethnic and religious lines and successful political leaders are expected to either support and favour indigenes that share same language with them or otherwise be assessed or viewed as bad leaders. This is notwithstanding the fact that a good leader is expected to be free and fair to all indigenes.

Holmes (2015) states that language is one of the most important parts of any culture. It is the way by which people communicate with one another, build relationships, and create a sense of community. Therefore, knowing a language automatically enables someone to identify with others who speak the same language. This connection is such an important part of cultural exchange The realization of a language family tree through the process of proto reconstruction will expatiate on the similarities between the indigenous languages of Adamawa state and this information when disseminated, can foster a feeling of togetherness and oneness and by implication, peace and unity.

1.3 Aim and Objectives of the Study

The aim of this study is to carry out a proto-reconstruction (comparison) of selected indigenous languages of Adamawa state.The study will be guided by the following objectives:

i. to identify indigenous languages of Adamawa state.
ii. to identify which of them have an orthography in order to determine which can represent Adamawa state.
iii. to carry out a proto reconstruction (analyze by identifying similarities in alphabetical order, pronunciation and meaning) of the selected indigenous languages spread across Adamawa State.

1.4 Research Questions

In line with the objectives stated above, the study will attempt to answer the following questions:

i. which are the indigenous languages of Adamawa state?
ii. which indigenous languages of Adamawa state have an orthography?
iii. what are the similarities in the selected indigenous languages across Adamawa State?

1.5 Significance of the Study

One of the Sustainable Development Goals (SDGs) of the United Nations (UN) is Peace, Justice and Strong institutions. Language performs many

important functions which include the embodiment of culture and identity and an agent of integration and peace. The outcome of this research which is the similarities in the languages of Adamawa state when disseminated, can foster peace and unity as indigenes realize the similarities and closeness between their shared languages and begin to see themselves as one based on the premise or hypothesis that all the languages of the state and by implication, all the indigenes are from the same roots or origin and hence one and the same. This is to propel indigenes towards unity and not division. The research will also be valuable as it will add to the limited data on the selected languages as searches online indicate that data is very limited in respect to Adamawa indigenous languages.

1.6 Limitations of the Study

Not much data is available on the selected languages of Adamawa State and available data indicate differences in spelling in same language; an indication that the orthography is still undergoing the process of standardization.

1.7 Scope of the Study

This study is limited to the counting system of six (6) selected indigenous languages of Adamawa State.

II. LITERATURE REVIEW

2.0 Introduction

This chapter reviews relevant review under the following subheadings: The Origin of Language, The Concept of Proto-Language,The Concept of Proto Reconstruction,Methods and Techniques in Proto-Language Reconstruction, Challenges and Limitations in Reconstructing Proto-Languages, Language Family Trees, Languages in Adamawa State and Theoretical Framework.

2.1 The Origin of Language

According to Munawar, (2020) no one in the whole world knows how exactly language was formed or came into being. Evidence of what kind of language was used by human ancestors is lacking. It is however said that, before any kind of written language, some kind of spoken language was developed between 100,000 and 50,000 years ago.

There are therefore, many theories about the origins of language, and the dates cited for its first appearance vary greatly from one author to another. They range from the time of Cro-Magnon man, about 40,000 years ago, to the time of Homo habilis, about 2 million years back.The hypothesis that language dates as far back as the time of Homo habilis is supported by the resilience of tool cultures in Homo habilis and later hominid species. Vaneechoutte (2014) lends credence to this by stating that, regarding the vocal precursors of human language, many continuity theorists hypothesize that language evolved from early human capacities.

Tool making techniques must be passed from generation to generation to be sustained over long spans of time. This can be accomplished by imitation (younger members of the group learned by watching more skillful and experienced tool makers) or by verbal instruction or by a combination of both. Homo habilis retained their tool cultures despite many climate change cycles at the timescales of centuries to millennia each, [suggesting that Homo habilis and later] species had sufficiently developed language abilities [including grammar] to verbally describe complete procedures for tool making.

Research with non-human primates' indicates that tool making skills based on imitation alone, without verbal instruction, are lost under environmental changes like the changes in climate referred to above. Chimpanzees, macaques and capuchin monkeys are all known to lose tool techniques under such circumstances. Many experts content that the resilience of tool culture in Homo habilis supports the view that language existed in these early human ancestors.

Munawar (2020) lists different theories on the origin of language given by linguists as follows: The Divine Source, The Natural Sound Source, The bow-bow theory, The Social interaction Source, The Physical Adaptation Source, The tool-making Source and The Genetic Source briefly discussed as follows:

2.1.1 The Divine Source

There appears to be a divine source, in many religions, who provides humans with language. The legendary story (the tower of Babel) tied to this theory is acknowledged by both Christians and Muslims. A few experiments have attempted to rediscover this original divine language. The hypothesis was that if infants were allowed to grow up without hearing any language around them, then they would spontaneously begin using the original God-given language. King James the Fourth of Scotland carried out a similar experiment around 1500 and the children were reported to have spontaneously started speaking Hebrew, confirming the king's belief that Hebrew had indeed been the language of Eden. But it was not correct for further experiments.

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2.1.2 The Natural Sound Source

This theory of language was developed by Jespersen (1922) on the premise that primitive words were derived from imitations of natural sounds that early men and women heard around them. The human auditory system is already functioning before birth, allowing humans to make a connection between a sound and the thing producing that sound.

2.1.3 The bow-bow theory

This theory is closely related to the **Natural Sound Source and has to do with** sounds (the names of the things are associated with their sounds). For example, in English, Cuckoo and Coo-Coo are examples of onomatopoeia; the names of the things associated with their sounds, where a human tries to imitate the sounds of objects made by other humans. In addition to the cuckoo are words like splash, bang, boom, rattle, hiss, screech, and of course bow-wow. These theory however cannot account for many words in languages today as the words are not onomatopoeic.

2.1.4 The Social Interaction Source

According to this theory, ancient humans who lived in larger groups because of protection and survival used to work in a group so they might generate a set of grunts, hums, curses, and groans for calling each other. The theory however, does not answer the question of the origin of language as animals like chimpanzees also used to call each other by using those sounds but they did not initiate speaking language.

2.1.5 The Physical Adaptation Source

This theory takes into cognizance, different distinct physical features of humans which make them unique and different from other creatures. Unlike other species of apes, the human **teeth**are not inclined outwards and that helps them to produce language. Moreover, human **lips**have more complex enlacing muscles than apes. This flexibility helps in the production of sounds. For example, in all over the world, 1-year babies mostly speak their first word with “m” or “b” no matter what language their parents speak. In addition to this, the human **mouth**is smaller than other species and can easily move faster. In comparison to apes, the human **tongue**is shorter, thicker, and muscular which helps to produce strong sounds through different shapes. The voice box or vocal cords of humans also called **the larynx** is also clearly different from other species through which they easily can produce sounds.

2.1.6 The Tool-making Source

The traces of tool making are evidence that previous humans used their brains to work. The left and right hemispheres of the human **brain** have different functions to perform. At the initial stage, it seems that the previous humans used to indicate the object by using a single sound in their environment. But after time, human-produced language by combining and organizing single words referring to certain situations. In other words, humans started by using their naming ability to message-building capacity in order to produce language. This ability is not present in other primates and makes humans different from other species.

2.1.7 The Genetic Source

At birth, the larynx of a human baby is like that of a chimpanzee then after a short period of time, the larynx drops, the brain develops and the infant starts talking and walking. This fact made scholars look into other factors than those physical sources for language. Even children who are born deaf become fluent sign language users very early in life. This seems to suggest that human offspring are born with a special capacity for language. It is innate, no other creature seems to have it, and it isn't bound to a specific variety of languages.

These different theories are given according to different scholars and linguists and indicate that at first when humans were not able to get how language started, they simply put it all on the divine but later came to think there were other sources. Humans then started observing their surroundings and gave other theories and ended up on the fact that there is some natural ability in humans to produce language. The last theory twins up with that Chomsky’s innate hypothesis that children are born with special and natural abilities to produce language and learn grammar. Furthermore, the origin of language wrapped in intricacies does not in any way underscore the importance of language to humanity today. It is required for success in every aspect of life.

2.2 The Concept of Proto-Language

A proto language is a hypothetical, reconstructed, and unattested ancestor of alanguage, believed to have been spoken in the past. The Online Oxford Dictionary defines a proto language as a hypothetical lost parent language from which actual languages are derived. In other words, this reconstructed language serves as a common source from which the languages in that family evolved. Jaber, Omari and Abudalbuh (2021) state that

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recently, language origin (and evolution) has been a hot topic among both linguists and scientists interested in solving the puzzle of the development of the most influential invention in human history, language. Language, as a cognitive niche, lays the basis for human survival and development. In the field of Evolution of Language, researchers use various approaches in an attempt to explain how our species moved from a wholly a language state to the complete possession of the complex language we have in modern times. Understanding proto languages is therefore, of great significance in the field of historical linguistics. They allow linguists to trace back the history and origin of modern languages and analyse language change and development over time.When it comes to linguistic studies, proto languages play a significant role in understanding the evolution and development of modern languages, as well as offering insight into the historical and social context in which these languages were spoken. Furthermore, proto languages can contribute in the following ways:

i. Reconstruction of phonetics: By comparing related languages, linguists can reconstruct the phonetics, phonology, morphology, and syntax of the proto language. This helps in understanding the structural and functional properties of modern languages.

ii. Internal reconstruction: Linguists use the internal reconstruction process to identify the earlier stages of a language without the need for comparisons with other languages. This involves analysing patterns of irregularities to speculate about the proto language's characteristics.

iii. Cultural implications: The study of proto languages provides valuable information about the culture, history, and society of ancient communities. This information is crucial for anthropological and archaeological investigations.

iv. The study of proto languages permits linguists to classify modern languages into distinct families and sub-families, providing a greater understanding of the relationships between languages.

Proto languages therefore play a crucial role in linguistic studies, offering vital information about the development, evolution, and connections between modern languages, as well as insights into the history and culture of ancient societies. Language change across space and time is one of the main concerns in historical linguistics (Alina and Dinu, 2019).

2.3.1 The Concept of Proto Reconstruction

Proto reconstruction is the process by which cognates are deconstructed in order to discover the original word of the language that metamorphosed into different words of different languages and this highlights language family trees (Omachonu, 2016). According to Holma (2018), the entire method is based on the assumption of regular and systematic sound change.Reconstructing proto languages involves comparing the features, vocabulary, and grammar of multiple, related languages, and using the similarities and differences to extrapolate their common ancestor – the proto language. It is a critical aspect of linguistic studies. It allows researchers to trace the origins and development of languages through time and uncover connections within language families. To achieve this, linguists employ various methods and techniques, while also facing challenges and limitations.

2.3.2 Methods and Techniques in Proto-Language Reconstruction

Proto reconstruction is a fundamental aspect of historical linguistics, aiming to reconstruct the features of a proto-language by comparing its descendant languages. This process involves various methodologies, each with distinct approaches and principles. This review outlines the primary types of proto reconstruction methods, focusing on the Comparative Method, the Internal Reconstruction Method, and the Computational Methods, highlighting their applications, advantages, and limitations.

i. **The Comparative Method:** The Comparative Method is the cornerstone of historical linguistics and proto reconstruction. This technique involves systematically comparing cognates—words in different languages that derive from a common ancestral language—to reconstruct the proto-language's phonological, morphological, and syntactical characteristics. For instance, the comparison of Latin *pater*, Greek *patḗr*, and Sanskrit *pitṛ́* leads to the reconstruction of Proto-Indo-European *pəter* (Campbell, 2017). This method relies heavily on the identification of regular sound correspondences and the establishment of linguistic rules governing phonological changes over time. The Comparative Method's strength lies in its rigorous and systematic approach, which allows for high precision in reconstruction. However, it has limitations when dealing with languages with sparse documentation or those that have undergone extensive borrowing and convergence (Hock & Joseph, 2019). Additionally, it requires a sufficient

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number of related languages for effective comparison, which is not always available.

ii. The Internal Reconstruction Method: The Internal Reconstruction Method operates differently by examining irregularities and anomalies within a single language to infer earlier forms. This method focuses on identifying patterns that deviate from the regular phonological rules and uses them to hypothesize about the language's historical development. For example, irregular verb forms in English, such as *went* from *go*, can provide insights into older stages of the language (Fox, 2014).While internal reconstruction is useful for languages with limited external comparanda, it is less reliable than the Comparative Method due to its reliance on a single language's data. This method often serves as a preliminary step or supplementary tool when comparative data is insufficient (Bowern & Evans, 2015). Its major drawback is the difficulty in distinguishing between genuine historical changes and analogical formations.

iii. **Computational Methods:** In recent years, computational methods have gained prominence in proto reconstruction. These methods employ algorithms and statistical models to analyze large linguistic datasets, identifying patterns and making inferences about proto-languages. Techniques such as Bayesian phylogenetics and machine learning allow for the automatic detection of sound correspondences and the construction of language family trees (Chang et al., 2015). Computational methods offer several advantages, including the ability to handle extensive datasets and uncover subtle patterns that may be missed by manual analysis. They also facilitate the reconstruction of proto-languages with extensive and complex language families. However, these methods are highly dependent on the quality and completeness of the input data and require careful calibration and interpretation of results (List, 2022). Moreover, they often need to be integrated with traditional methods to ensure the validity and reliability of the reconstructions.

Proto reconstruction methods each have their unique strengths and limitations. The Comparative Method remains the most robust and widely used technique, offering high precision through systematic comparison of cognates. The Internal Reconstruction Method provides valuable insights, especially for languages with limited external data, though it is less reliable on its own. Computational Methods represent a significant advancement, leveraging modern technology to enhance reconstruction efforts but requiring careful integration with traditional approaches. Together, these methods contribute to a more comprehensive understanding of historical linguistics and the evolution of languages.

In summary, there are multiple methods and techniques used in reconstructing proto languages. Some key techniques include the internal reconstruction, lexical and morphological comparisons, and more recently, computational approaches:

1. **The Comparative Method**: This method involves comparing and analysing languages. Looking at their vocabulary, grammar, phonetics, and phonology. By identifying similarities and differences, linguists infer the characteristics of their common proto language. Steps in the comparative method include:

i. Establishing a set of cognates (words that share a common origin) among related languages.

ii. Reconstructing shared features such as phonetic and phonological systems, grammatical structures, and vocabulary.

iii. Determining the most likely relationships and patterns of change among the languages.

iv. Establishing the reconstructed proto language.

2. **Internal Reconstruction**: This technique analyses a single language without comparing it to other languages. It involves identifying irregular patterns and hypothesising about the earlier states of that language based on the patterns observed.

3.**Lexical and Morphological Comparisons:** These comparisons focus on the shared vocabulary and morphological features, such as inflectional patterns or word formation strategies. By identifying common elements, linguists can deduce the characteristics of the proto language.

4. **Computational Approaches**: In recent years, computational techniques have been increasingly used in proto-language reconstruction. These approaches utilise mathematical models, algorithms, and statistical analyses to process and compare linguistic data efficiently. This allows for the evaluation of large datasets and the identification of more subtle relationships and patterns. Regardless of the methods and techniques employed, it's essential to remember that reconstructed proto languages are still hypothetical, and their conclusions are built upon the available data and the inherent assumptions within the chosen method.

2.3.3 Challenges and Limitations in Reconstructing Proto-Languages

Reconstructing proto-languages is a complex and intricate task within the field of historical linguistics, fraught with numerous challenges and

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limitations. These challenges stem from various factors, including data scarcity, methodological constraints, and the intricate nature of linguistic change. This review explores these challenges, focusing on issues related to incomplete data, borrowing and language contact, methodological limitations, and computational complexities.

i. Incomplete Data: One of the most significant challenges in proto-language reconstruction is the incomplete and uneven nature of available linguistic data. Many ancient languages lack comprehensive documentation, and the surviving evidence is often fragmentary. For example, the Proto-Indo-European language is reconstructed based on a limited number of ancient texts and inscriptions from its descendant languages (Mallory & Adams, 2017). This scarcity of data can lead to gaps in the reconstructed proto-language, making it difficult to achieve a fully accurate reconstruction.

ii. Borrowing and Language Contact: Another major challenge is the impact of borrowing and language contact on languages. Languages do not evolve in isolation; they frequently borrow words, sounds, and grammatical structures from neighboring languages. This phenomenon complicates the task of distinguishing inherited linguistic features from borrowed ones. For instance, the influence of Norman French on English following the Norman Conquest introduced numerous French loanwords, complicating the reconstruction of Old English (Thomason, 2015). Identifying and accounting for these borrowed elements is crucial to avoid erroneous reconstructions.

iii. Methodological Limitations: The methodologies used in proto-language reconstruction, while powerful, have inherent limitations. The Comparative Method, the primary tool for reconstruction, relies on identifying regular sound correspondences between cognates in different languages. However, this method can be limited by the availability of related languages and the degree of linguistic divergence. When the number of related languages is small or the languages have significantly diverged, the accuracy of reconstruction can be compromised (Hock & Joseph, 2019). Additionally, the Internal Reconstruction Method, which analyzes irregularities within a single language, is often less reliable due to its limited scope and potential to misinterpret analogical formations (Fox, 2014).

iv. Computational Complexities: With the advent of computational methods, new challenges have emerged. Computational approaches, such as Bayesian phylogenetics and machine learning, offer advanced tools for handling large datasets and complex language families. However, these methods are highly dependent on the quality and completeness of the input data. Poor data quality can lead to inaccurate models and reconstructions (List, 2022). Furthermore, computational methods require sophisticated algorithms and significant computational resources, which can be a barrier for some researchers. Additionally, the results of computational methods need careful calibration and interpretation to ensure they align with linguistic theory and evidence.

v. **Subjectivity:** Different linguists may have varying interpretations of the data, leading to disagreements or alternative reconstructions of the same proto language. This issue highlights the subjectivity of the conclusions drawn in proto-language reconstruction.

vi. **Time Depth:** As languages change and diverge, the similarities between descendant languages and their proto language may diminish, making the reconstruction process increasingly difficult the further back in time the proto language is believed to have been spoken.

vii. **Theoretical Assumptions:** The methods and techniques employed in proto-language reconstruction rely on certain assumptions about language change, development, and relationships. These assumptions may affect the accuracy and validity of reconstruction efforts.

Determining the oldest proto language is a challenging endeavour, as the age of a proto language may depend on various factors, such as the quality of linguistic evidence and methods of reconstruction. However, one candidate often mentioned for being the oldest proto language is Proto-Afro-Asiatic. Proto-Afro-Asiatic is regarded as the ancestor of the Afro-Asiatic language family, which includes languages such as Arabic, Hebrew, Amharic, Berber, and Hausa. Linguists estimate that Proto-Afro-Asiatic was spoken between 10,000 and 15,000 years ago. By reconstructing Proto-Afro-Asiatic, researchers can gain insights into the ancestral language and the development and evolution of the Afro-Asiatic family. Key features of Proto-Afro-Asiatic include:

i. A root system with consonants as the main structure and vowels serving a secondary role.

ii. The use of prefixes and suffixes to create new meanings from root words.

iii. Phonetic distinctions, such as between consonants, and between dental, alveolar and consonants.

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iv. Use of noun and verb templates to convey grammatical information, such as tense, aspect, and mood.

It is important to note that there are other proto languages that may be ancient, too, but due to the limitations and challenges in reconstructing proto languages, determining the oldest remains a complex task. Despite these challenges, reconstructing proto languages remains an indispensable aspect of linguistic studies, allowing researchers to gain invaluable insights into language evolution, development, and the connections between language families. When discussing proto languages, several examples stand out as particularly notable due to their significant influence on the development and evolution of language families. Some of these key proto languages include Proto-Indo-European, Proto-Germanic, Proto-Slavic, Proto-Semitic, and Proto-Sino-Tibetan. These proto languages serve as the hypothetical ancestors of many modern languages, underpinning their respective linguistic families and contributing to our understanding of linguistic relationships. Reconstructing proto-languages is an endeavor that faces numerous challenges and limitations. Incomplete data, the impact of borrowing and language contact, methodological constraints, and the complexities of computational approaches all pose significant hurdles. Despite these challenges, advances in both traditional and computational methods continue to improve the accuracy and scope of proto-language reconstructions. Ongoing research and the development of more refined techniques hold promise for overcoming these limitations and enhancing our understanding of linguistic history.

2.4 Language Family Trees

Language family trees are a fundamental tool in historical linguistics, used to illustrate the relationships among languages and trace their development from a common ancestral language. This review examines the concept of language family trees, their construction, applications, and limitations. Language family trees, also known as phylogenetic trees, are constructed based on the principles of genetic linguistics. The Comparative Method plays a crucial role in this process, involving the systematic comparison of languages to identify cognates—words that share a common origin—and establish regular sound correspondences. This method allows linguists to infer the structure of proto-languages and map out the branching relationships among their descendant languages (Campbell, 2017).

Advances in computational methods have significantly enhanced the construction of language family trees. Techniques such as Bayesian phylogenetics and network analysis employ statistical models to analyze large linguistic datasets, providing more detailed and accurate representations of language relationships. For instance, computational approaches have been used to refine the Indo-European language tree, offering new insights into the timing and sequence of language splits (Chang et al., 2015).

Language family trees have several important applications in historical linguistics and related fields. They help linguists understand the historical processes of language divergence and convergence, offering a visual representation of how languages evolve over time. These trees also assist in reconstructing proto-languages, providing a framework for identifying the features of ancient languages that are no longer spoken (Mallory & Adams, 2017). Moreover, language family trees are valuable in studying human prehistory and migration patterns. By mapping the geographical distribution of languages and their historical relationships, linguists can infer the movements and interactions of ancient populations. This interdisciplinary approach, combining linguistic data with archaeological and genetic evidence, has been particularly fruitful in studying the peopling of the Americas and the dispersal of the Austronesian languages (Gray et al., 2018).

Despite their utility, language family trees have several limitations. One major issue is the challenge of accurately representing the complexities of language contact and borrowing. Languages often influence each other through trade, conquest, and other forms of interaction, leading to features that do not fit neatly into a tree model. This phenomenon, known as horizontal transmission, complicates the depiction of purely vertical inheritance from a common ancestor (Dunn et al., 2015). Additionally, the quality of language family trees depends heavily on the availability and accuracy of linguistic data. Incomplete or biased data can lead to incorrect tree structures, misrepresenting the relationships among languages. For example, lesser-documented languages or those with significant dialectal variation can be difficult to place accurately within a family tree (Heggarty et al., 2021).

Furthermore, the assumptions underlying computational models can influence the resulting trees. Different models and parameters can produce varying tree structures, highlighting the importance of critically evaluating and cross-validating results

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with traditional linguistic methods (List, 2022). Language family trees are a vital tool in historical linguistics, offering insights into the evolutionary relationships among languages and aiding in the reconstruction of proto-languages. While advances in computational methods have improved their construction and accuracy, challenges such as language contact, data quality, and model assumptions remain. Ongoing research and interdisciplinary collaboration continue to refine these tools, enhancing our understanding of language history and human prehistory.

Language family trees can be determined by carrying out a Proto Reconstruction. A proto language or proto word is the original language or original word from which other languages or similar words of other languages diversified. Proto reconstruction entails the process by which cognates are deconstructed in order to discover the original word of the proto language that metamorphosed into different words of different languages. Yule (2010) identifies comparative reconstruction as the procedure for doing this.

In comparative reconstruction, a language historian uses information derived from the cognates to "reconstruct" what must have been the original or proto form in the common ancestral language. To achieve this, the language historian must stick to certain principles. Examples of such principles are the majority principle and the most natural development principle. In the majority principle, one looks out for a sound that appears more in the cognates. Words of different languages that have more of such sounds point the way to what the original word of the original language was like. Writing on this, Yule (2010) holds that if, "in a cognate set, three words begin with a [p] sound and one word begins with a [b] sound, then our best guess is that the majority have retained the original sound (i.e. [p])." On the other hand, the most natural development principle assumes that certain types of sound change are common whereas others are extremely unlikely.

Omachonu (2016) tracing language family tree states that Nigerian languages comprise of Chadic languages, Niger-Congo, Nile-Saharan languages and one language isolate. However, though these groups are only four in number, most Nigerians are not aware of this fact and hence diversity increases with over 500 languages at play. A proto reconstruction of the languages of Adamawa state will reveal the language situation in Adamawa state.

2.5 Languages in Adamawa State

Benson (2020) gives an overview of Adamawa languages thus. Greenberg (1963) classified Adamawa languages as one branch of the Adamawa–Ubangi family of Niger–Congo languages and among the least studied languages in Africa which include many endangered languages. Greenberg postulated the Adamawa languages as a part of Adamawa–Ubangian (then called Adamawa–Eastern), and divided them into 14 numbered groups. Group G3, Daka (or Dakoid), is now kno wn to be a branch of Benue–Congo while the relationships of the other branches have undergone considerable revision.

Boyd (1989) added the Day language but excluded the Fali languages (G11). Blench (2012) concludes that the Adamawa languages are a geographic grouping, not a language family, and breaks up its various branches in his proposed Savannas family. He places some of the western Adamawa languages closer to the Gur languages than to other Adamawa families. Fali is tentatively excluded from Savannas altogether. Güldemann (2018) on the other hand, recognizes 14 coherent Adamawa "genealogical units", but is agnostic about their positions within Niger-Congo. Furthermore, the Adamawa Languages Project website, recognises 17 groups as Adamawa languages (ADAMAWA Ulrich Kleinewillinghofer Institute for Ethnologie & Afrikastudien Basic Linguistic Research in Adamawa Languages, 2019). Blench (2020) retains a connection between Mumuye and Yendang, but breaks up Kleinewillinghöfer's Samba-Duru.

There are 58 languages spoken as first languages in Adamawa State (*adamawastate.yolasite.com<languages*). Major languages of Adamawa State are Bacama/Bata (Bwatiye), Bura-Pabir, Fulfulde, Huba (Kilba), Longuda, Mumuye and Samba Daka. Most other languages in Adamawa State are extremely small and endangered minority languages, due to the influence of Hausa and Fulfulde. Holma is reported to be dying out.

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Table 1: 58 languages in Adamawa State

Languages	Local Government Area
Bacama	Numan and Guyuk LGA's
Bali	Numan LGA
Bata	Numan, Song, Fufore, and Mubi LGA's
Bena	Guyuk, Gombi, and Song LGA's
Bile	Numan LGA
Boga	Gombi LGA
Bura-Pabir	Gombi LGA
Daba	Mubi LGA
Dadiya	Numan LGA
Dera	Guyuk LGA
Dijim-Bwilim	Numan LGA
Dong	Mayo-Belwa LGA
Dza	Numan LGA
Fali	Mubi and Michika LGA's
Fulfulde	center in Yola
Gaa	Ganye LGA
Ga'anda	Gombi LGA. Some also in Song, Guyuk, and Mubi LGA's
Gengle	Mayo-Belwa and Fufore LGA's
Gevoko	Michika LGA
Gude	Mubi LGA
Gudu	Song LGA
Higgi	Michika LGA
Holma	Spoken north of Sorau on the Cameroon border
Huba	Hong, Maiha, Gombi, and Mubi LGA's
Hwana	Gombi LGA, and some in Song and Hong LGA's
Jarawa	
Kaan	Shellen, Song, and Numan LGA's
Kamwe	Michika LGA, in the Mandara Mts
Kofa	Song LGA
Koma	Ganye and Fufore LGA's

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Kpasham	Numan LGA
Kugama	Fufore LGA
Kumba	Mayo-Belwa and Fufore LGA's
Kwa	Numan LGA
Laka	Yola LGA
Lala-Roba	Gombi LGA
Lamang	Adamawa State
Lamja-Dengsa-Tola	Mayo Belwa LGA
Longuda	Guyuk LGA
Marghi	Mubi and Michika LGA's
Mboi	Song, Fufore, and Gombi LGA's
Mbula-Bwazza	Numan, Guyuk, Song, and Demsa LGA's
Mom Jango	Yola and Fufore LGA's, Verre hills
Mumuye	Ganye, Fufore, Yola, Numan, and Mayo Belwa LGA's
Ngwaba	Gombi and Hong LGA's
Nyong	Mayo Belwa LGA
Nzanyi	Maiha LGA
Peere	Ganye LGA
Psikye	north and east of Michika, south of Madagali, in the Mandara Mts
Samba Daka	Ganye and Mayo Belwa LGA's
Sukur	Michika LGA
Teme	Mayo Belwa LGA, along the banks of the Mayo Belwa River
Tso	Numan LGA
Vemgo-Mabas	Michika LGA, Madagali district
Waja	Michika LGA
Wom	Fufore LGA
Xedi	Michika LGA
Yendang	Mayo Belwa and Numan LGA's
Ziziliveken	Mubi LGA, Jilvu village

Source: Benson 2020

In present day there are about 150 different languages being spoken in Adamawa State. A more detailed representation according to zones is given on the website of Adamawa State at a glance as shown below. This research will adopt the second representation for its analyses.

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Table 2: Languages Based on Zones

SENATORIAL DISTRICT	FEDERAL CONSTITUENCY	LOCAL GOVERNMENT	ETHNIC GROUPS
Adamawa North	Michika/Madagali	Michika	Higgi
		Madagali	Marghi, Sukur
	Mubi North/Mubi South and Maiha	Mubi North	Fali
		Mubi South	Gude
		Maiha	Nzanyi
Adamawa Central	Hong/Gombi	Hong	Kilba, Marghi
		Gombi	Ga'anda, Hona, Bura, Lala, Ngwaba
	Song/Fufore	Song	Yungur, Mboi
		Fufore	Bwatiye, Fulbe
	Yola North/Yola South and Girei	Yola North	Lakka
		Yola South	Fulbe, Verre
		Girei	Fulbe, Bwatiye, Tambo
Adamawa South	Demsa/Lamurde and Numan	Demsa	Mbula, Bwatiye, Bile Bali
		Lamurde	Kwa, Bachama
		Numan	Bachama, Waaja, Kaam
	Guyuk/Shelleng	Guyuk	Lunguda
		Shelleng	Kanakuru
	Ganye/Jada/Mayobelwa and Toungo	Ganye	Chamba, Peere, Fulbe
		Jada	Fulbe, Chamba, Koma
		Mayobelwa	Yangdang, Fulbe
		Toungo	Chamba

2.6 Empirical Review

Proto reconstruction is a crucial aspect of historical linguistics, aiming to infer the features of ancient languages by comparing their descendant languages. This review provides an empirical overview of research on proto reconstruction, with a special emphasis on African languages, highlighting methodologies, findings, and challenges faced by linguists in this field. Proto reconstruction relies on several methodologies, primarily the Comparative Method and the Internal Reconstruction Method. The Comparative Method involves systematically comparing cognates across related languages to identify regular sound correspondences and reconstruct the proto-language.

This method is fundamental in reconstructing proto-languages of large and well-documented language families like Bantu and Afroasiatic (Nurse & Philippson, 2014). Internal Reconstruction, on the other hand, analyzes irregularities within a single language to infer its historical development. This method is particularly useful for languages with limited external comparanda. For instance, studies on Proto-Bantu utilize both methods to cross-validate findings and enhance the robustness of reconstructions (Bostoen & de Schryver, 2015).

Bantu languages, spoken across much of Sub-Saharan Africa, have been a major focus of proto reconstruction. Proto-Bantu reconstruction has significantly advanced our understanding of the

linguistic history of Africa. Using the Comparative Method, scholars have reconstructed a substantial part of Proto-Bantu vocabulary and grammar. For example, the works of Bastin, Coupez, and Mann (1999) have been pivotal in identifying common lexical items and phonological patterns across Bantu languages (Nurse & Philippson, 2014).

Recent computational approaches have further refined Bantu reconstructions. Studies using Bayesian phylogenetics have provided more detailed insights into the diversification and migration patterns of Bantu-speaking populations. These approaches integrate linguistic data with archaeological and genetic evidence, offering a more comprehensive picture of Bantu expansion (Grollemund et al., 2015).

The Afroasiatic language family, encompassing languages like Arabic, Hebrew, and Hausa, presents another significant area of research. Proto-Afroasiatic reconstruction faces challenges due to the vast time depth and the geographical spread of its descendant languages. However, researchers have made substantial progress using both traditional and computational methods. Diakonoff's (1988) work laid the foundation for much of the current understanding of Proto-Afroasiatic. Recent studies have built on this foundation, employing computational methods to refine phonological and lexical reconstructions. These studies have also explored the impact of language contact and borrowing, which complicate the reconstruction process (Blench, 2015).

Recent advances in computational linguistics and interdisciplinary approaches have significantly enhanced proto reconstruction efforts. The integration of linguistic data with archaeological and genetic evidence provides a more holistic understanding of language evolution and migration patterns. For instance, the use of Bayesian phylogenetics in studying Bantu expansions has shed light on the timing and pathways of migration (Grollemund et al., 2015).

Proto reconstruction of African languages has made significant strides, offering valuable insights into the continent's linguistic history. The Comparative Method and computational approaches have been particularly effective in reconstructing proto-languages like Proto-Bantu and Proto-Afroasiatic. However, challenges such as data scarcity, language contact, and computational complexities remain. Ongoing research and interdisciplinary collaboration are essential to overcoming these challenges and furthering our understanding of African linguistic heritage. Future research should focus on expanding and improving linguistic databases, particularly for under-documented African languages. Collaborative efforts involving linguists, anthropologists, archaeologists, and geneticists can provide richer and more reliable data for reconstruction. Additionally, developing more sophisticated computational models that can better handle the complexities of language contact and borrowing will be crucial.

2.7 Theoretical Framework

The comparative analysis of this research will be based on the **Comparative Method and the Lexical and Morphological Comparisons method**. While the comparative method involves comparing and analysing languages by looking at their vocabulary, grammar, phonetics, and phonology and by identifying similarities and differences, the **Lexical and Morphological Comparisons** on the other hand focus on the shared vocabulary and morphological features, such as inflectional patterns or word formation strategies. By identifying common elements, linguists can deduce the characteristics of the proto language.

The Comparative Method is a cornerstone of historical linguistics and proto reconstruction, providing a systematic approach to uncovering the relationships among languages and reconstructing their common ancestors. The method's origins can be traced back to the early 19th century, a period marked by significant advancements in the understanding of language change and the relationships among Indo-European languages. The Comparative Method emerged from the efforts of early linguists to understand the historical connections between languages. One of the pivotal figures in the development of this method was Sir William Jones, a British philologist and judge, who in 1786 famously observed the striking similarities between Sanskrit, Greek, and Latin. Jones suggested that these languages must have a common source, laying the groundwork for comparative linguistic studies (Robins, 2014). Building on Jones' insights, Franz Bopp, a German linguist, published his work *Conjugationssystem der Sanskritsprache* in 1816, where he compared the grammatical structures of Sanskrit with those of Greek, Latin, Persian, and Germanic languages. Bopp's comparative analysis demonstrated systematic correspondences in morphology, significantly advancing the method (Auroux, 2019).

Another key figure was Rasmus Rask, a Danish linguist, whose work in the early 19th century further refined the method. Rask's systematic comparison of phonological and morphological features across languages contributed to the identification of regular sound correspondences, which are central to the Comparative Method (Hock & Joseph, 2019). The Comparative Method was further formalized by the work of August Schleicher and the Neogrammarians. Schleicher introduced the concept of the linguistic family tree (Stammbaumtheorie), visually representing the relationships among languages as branches of a tree originating from a common ancestor. This model helped to conceptualize language divergence and proto-language reconstruction (Heggarty, 2021).

The Neogrammarians, a group of German linguists active in the late 19th century, emphasized the regularity of sound change, encapsulated in their motto "sound laws suffer no exceptions." This principle underscored the importance of identifying consistent phonological correspondences in the reconstruction process. Karl Brugmann and Hermann Osthoff, prominent Neogrammarians, significantly contributed to the method's rigorous application and theoretical foundation (Hock & Joseph, 2019). Since its establishment, the Comparative Method has been applied extensively to various language families beyond Indo-European, including Bantu, Afroasiatic, and Uralic. Modern linguists continue to refine the method, integrating advances in computational linguistics and leveraging large linguistic databases to enhance the accuracy and scope of reconstructions (List, 2022).

Computational approaches, such as Bayesian phylogenetics, now complement traditional comparative methods, allowing for more sophisticated analyses of language relationships and the reconstruction of proto-languages. These methods incorporate statistical models to handle complex datasets and provide insights into the timing and pathways of language divergence (Chang et al., 2015). The Comparative Method of proto reconstruction has its origins in the early 19th century, with significant contributions from linguists such as Sir William Jones, Franz Bopp, and Rasmus Rask. The method was formalized and expanded by August Schleicher and the Neogrammarians, emphasizing the regularity of sound change and the systematic comparison of languages. Modern advancements in computational linguistics continue to enhance the method, making it a vital tool in historical linguistics.

On the other hand, the Lexical and Morphological Comparisons method is a critical component of the Comparative Method in historical linguistics. It involves comparing words (lexicon) and grammatical structures (morphology) across related languages to reconstruct aspects of their common ancestor, or proto-language. This review traces the origins and development of this method, with an emphasis on its foundational principles and key contributors, along with recent advancements.

The roots of the Lexical and Morphological Comparisons method lie in the early comparative studies of Indo-European languages. Sir William Jones's observations in the late 18th century about the similarities between Sanskrit, Greek, and Latin highlighted the potential for systematic language comparison (Robins, 2014). However, it was Franz Bopp who, in 1816, conducted the first detailed comparative analysis focusing on grammatical structures, thus laying the groundwork for morphological comparison (Auroux, 2019). Bopp's work demonstrated that languages evolve in systematic ways, and that regular correspondences in verb conjugations and noun declensions could reveal historical connections. This approach provided the basis for reconstructing the grammatical systems of proto-languages, showing that morphological comparison was as crucial as lexical comparison in historical linguistics (Hock & Joseph, 2019).

The Lexical and Morphological Comparisons method was further formalized by the Neogrammarians in the late 19th century. This group of German linguists, including Karl Brugmann and Hermann Osthoff, emphasized the regularity of sound laws and the systematic nature of linguistic change. They argued that sound changes occur uniformly and without exceptions, which reinforced the reliability of using morphological and lexical data to trace linguistic evolution (Hock & Joseph, 2019). The Neogrammarians' rigorous approach to identifying phonological and morphological correspondences provided a methodological framework that remains influential. They systematically compared cognates—words in different languages that descend from the same ancestral word—and morphological paradigms, ensuring that reconstructions were based on consistent patterns of change rather than isolated similarities.

The 20th century saw significant advancements in the application of lexical and morphological comparisons, particularly with the expansion of these methods to non-Indo-European

language families. Scholars like Joseph Greenberg pioneered the comparative study of African languages, applying the principles of lexical and morphological comparison to demonstrate genetic relationships among language families such as Afroasiatic, Nilo-Saharan, and Niger-Congo (Greenberg, 1963; Güldemann, 2018).

Recent research has integrated computational techniques with traditional methods of lexical and morphological comparison to enhance the accuracy and scope of proto-language reconstructions. For example, Bayesian phylogenetics and other statistical models have been employed to analyze large linguistic datasets, facilitating more detailed reconstructions and revealing complex patterns of language evolution (Chang et al., 2015). Computational methods have also allowed for the handling of extensive and diverse data from under-documented languages, providing new insights into the historical relationships among languages in regions like Africa and the Americas. These advancements underscore the continued importance of lexical and morphological comparisons in historical linguistics (List, 2022). Despite their strengths, lexical and morphological comparisons face challenges, particularly in dealing with incomplete data and distinguishing between inherited features and borrowed elements. The complexity of language contact and borrowing can obscure true genetic relationships, necessitating careful analysis and cross-validation with other methods (Blench, 2015)

The Lexical and Morphological Comparisons method is foundational to the field of historical linguistics, tracing its origins to early comparative studies and the rigorous methodologies developed by the Neogrammarians. This method has been crucial in reconstructing proto-languages and understanding language evolution. Recent advancements in computational linguistics have further enhanced its application, although challenges remain. Ongoing research continues to refine these methods, contributing to a deeper understanding of linguistic history.

III. METHODOLOGY

3.1 Description of the Study Area

Adamawa State is located in the North eastern part of Nigeria. There are over 150 ethnic groups spread across the 21 Local Government Areas of the State namely: Fufore, Ganye, Gombi, Guyuk, Hong, Jada, Shelleng, Demsa, Madagali, Maiha, Mayo-Belwa, Michika, Mubi, Numan, Song, Yola, Mubi-South, Jimeta, Girei, Toungo and Lamurde (Ladan, 2012). The State falls under three (3) zones name;ly: Adamawa Central Senatorial District, Adamawa North Senatorial District and Adamawa South Senatorial District (Samuel, 2022).

3.2 Research Design

This is a corpus-based study which involved the analysis of language items used on a daily basis (numerals/counting). The descriptive and quantitative methods was adopted as the research design as words were studied (they were described, analysed).

3.3 The Corpus

The corpus for the study was drawn from selected indigenous languages of Adamawa state which comprises of 21 local governments. The rationale for limiting the corpus to selected indigenous languages is because it will be difficult to carry out an analysis of all the indigenous languages of Adamawa state within one research. The counting system of the languages were collected to form the corpus.

3.4 Criteria for Data Selection

Representativeness was one of the criteria for data selection as the languages selected for analyses were a representation of the zones of the state. The level of standardization or viability of the languages determined their selection. Accessibility and Availability were factors that were considered as criteria for data selection.

3.5 Method of Data Collection

Data was collected by the use of interviews and questionnaires.

3.6 Method of Data Analysis

The frequency of occurrences of similarities in the languages were presented in tables to help determine the frequency of occurrence in similarities.

3.7 Expected Outcome

The hypothesis of the research is that at the end of the language comparative analysis or proto-reconstruction, the results will highlight that languages of Adamawa State are from the same origin and language being a representative of identity, implies that the people of Adamawa State are of same origin and this will promote unity.

IV. DATA PRESENTATION AND ANALYSIS

This chapter deals with the presentation of result. The results of the data collected and analyzed for the research questions and hypothesis are presented in this chapter. The result is presented in line with the research questions and hypothesis that guided the study.

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4.1.1 Research Question 1: Which are the indigenous languages of Adamawa State?

Below is a table showing indigenous languages of Adamawa State.

Table 3 Languages Based on Zones

SENATORIAL DISTRICT	FEDERAL CONSTITUENCY	LOCAL GOVERNMENT	ETHNIC GROUPS
Adamawa North	Michika/Madagali	Michika	Higgi
		Madagali	Marghi, Sukur
	Mubi North/Mubi South and Maiha	Mubi North	Fali
		Mubi South	Gude
		Maiha	Nzanyi
Adamawa Central	Hong/Gombi	Hong	Kilba, Marghi
		Gombi	Ga'anda, Hona, Bura, Lala, Ngwaba
	Song/Fufore	Song	Yungur, Mboi
		Fufore	Bwatiye, Fulbe
	Yola North/Yola South and Girei	Yola North	Lakka
		Yola South	Fulbe, Verre
		Girei	Fulbe, Bwatiye, Tambo
Adamawa South	Demsa/Lamurde and Numan	Demsa	Mbula, Bwatiye, Bile Bali
		Lamurde	Kwa, Bachama
		Numan	Bachama, Waaja, Kaam
	Guyuk/Shelleng	Guyuk	Lunguda
		Shelleng	Kanakuru
	Ganye/Jada/Mayobelwa and Toungo	Ganye	Chamba, Peere, Fulbe
		Jada	Fulbe, Chamba, Koma
		Mayobelwa	Yangdang, Fulbe
		Toungo	Chamba

Source: https://adspc.ad.gov.ng/adamawa-state/

4.1.2 Research Question 2: Which indigenous languages of Adamawa State have an orthography?

This research has identified the following twenty (20) indigenous languages of Adamawa as having an orthography:

1. Chamba
2. Bwatiye
3. Kilba
4. Mumuye
5. Margi
6. Higgi
7. Lunguda
8. Mbula
9. Fulani
10. Verre
11. Jenjo
12. Bura
13 Ga'anda
14. Yungur
15. Laka
16. Bille
17. Fali
18 Dera (Kanakuru)
19 Maya
20 Jukun

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Table 4: Counting System

COUNTING SYSTEM				
No.	**Chamba**	**Kwabwatiye**	**Kilba (Haba)**	**Mumuye**
1.	Nning	Hyido	Zhang	Goro
2.	Eara	Kpe	Mutleu	Zitt
3.	Tora	Mwakun	Makru	Ta'at Nnero
4.	Nara	Fuaht	Fwadu	Mma,an Mango
5.	Nunna	Tuff	Tufou	Nawatatt
6.	Nungos	Tukol-Taka	Kwa	Nawanero
7.	Ningsena	Tuko-lu-kpe	Mudufa	Nunkwop-bego
8.	Daggwa	Fuah- Fuaht	Chisu	Kwoap
9.	Daningne	Do-mbi-do	Dlah	Kwoapi- tugoro
10.	Kub	Bou	Kumah	Kwoapi- tuzitt
11.	Kubje nning	Bou-a-mbidyi hyido	Kwabu zhang	Kwoapi- tu tatt
12.	Kubje eara	Bou-ambidyi Kpe	Kwabu metleu	Kwoapi- tunero
13.	Kubje tora	Bou-a-mbidyi mwakun	Kwabu makru	Kwoapi- tuman
14.	Kubje Nara	Bou-a-mbidyi Fuaht	Kwabu fwadu	Kwoapi- tumango
15.	Kubje nunna	Bou-a-mbidyi Tuff	Kwa bu tufou	Kwoapi- tunawatatt
16.	Kubje Nungos	Bou-a-mbidyi Tukol-taka	Kwa bu kwa	Kwoapi- tunawanero
17.	Kubje ninsena	Bou-a-mbidyi Tuko-lukpe	Kwabu mudufah	Kwoapi- tumukwoapibegoro
18.	Kubje daggwa	Bou-a-mbidyi Fuah-Fuaht	Kwabu chisu	Mmatt.
19.	Kubje daningne	Bou-a-mbidyi Ta-mbi-do	Kwabu ndlah	Goro
20.	La'aning	Bou-taluwo kpe	Mutleu kumu nyi	Zitt

Table 4: Counting System

COUNTING SYSTEM

No.	**Marghi**	**Michika**	**Lunguda**	**Mbula**
1.	Pathlu	Kute	Nakal	0 Nici
2.	Muthlu (Metlu)	Bwage	Naser	Mwashat
3.	Makir	Makene	Nakwai	Bari
4.	Fodu (Fudu)	Fware	Nanyer	Àréi
5.	Mtifu	Ncife	Nanyou	Ine
6..	Nkwa (Kwa)	Nkwange	Naki-Nakwai	Tongno
7.	Mudufu	Mburefunge	Nyi-nakwai	tongno-nong mwashat
8.	Tsisu (Cisu)	Tigesi	Nyi-thin	tongno-nong 6ari
9.	Mdlu (Adlu)	Tiye	Nyi-nanyou	tongno- nong tàrù
10.	Kumau (Kumu)	Munge	Nom	tongno-nong ine
11.	Kumu Gasirtan	Munge- Kuteghi	Nom-yirwu-Naka1	Lum
12	Kumu gapwa muthlu	Munge- bwage	Nom-yirwu- Naser	Lum-nong mwashat
13.	Kumu gapwa makir	Munge- makeneglii	Nom-yirwu- Nakwai	Lum-nong 6ari
14	Kumu gapwa fodu	Munge- fwareghi	Nom-yirwu-Nanyer	Lum-nong tàrù
15.	Kumu gapwa mtifu	Munge- ncifeghi	Nom-yirwu- Nanyou	Luin-nong ine
16..	Kumu gapwa nkwa	Munge- nkwangeghi	Nom-yirwu- Naki - nakwai	Lum-bwamda-tongno
17	Kumu gapwa mudufu	Bou-a-mbidyi Tuko-lukpe	Kwabu mudufah	Kwoapi-tumukwoapibegoro
18.	Kumu gapwa ntisu	Bou-a-mbidyi Fuah-Fuaht	Kwabu chisu	Mmatt.
19.	Kumu gapwa	Bou-a-mbidyi Ta-mbi-do	Kwabu ndlah	Goro
20.	Mthlu	Bou-taluwo kpe	Mutleu kumu nyi	Zitt

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Table 5: Counting System

COUNTING SYSTEM				
No.	**Fulani**	**Verre**	**Jenjo**	**Bura**
1.	Go'o	Bokko	Tsin	Ntang
2.	Didi	Ette	Bwang	Suda
3.	Tati	Tarc Narc	Bwata	Makir
4.	Nayi	Gbenaro	Bwanyah	Fwar
5.	Jowi	Gbenabojo	Bwahuin	Ntefu/Ntufu
6..	Joweego'o	Sette	Hyitsun	Nkwa
7.	Jowee cfi‹fi	Sataree	Hyiyu	Murfa
8.	Joweetati	Pitiboj	Flyita	Ncisu
9.	Joweenayi	Conno	Hyinyah	Umdla
10.	Sappo	Konno Wosu Bokko	Bwahya	Kuma
11.	Sappo e go'o	Konno Wosu Ette	Jitsin	Kum-ka-tang
12	Sappo e 4i‹fi	Konno Wosu Tare	Ji bwang	Kum-nya-Suda
13.	Sappo e tati	Konno Wosu Nare	Ji bwata	Kuin-nya-Malcir
14	Sappo e nayi	Konno Wosu Gbenaro	Ji bwanyah	I€um-nya-nfwar
15.	Sappo e jowi	Konno Wosu Gbenobojo	Ji bwahum	Kum-nya-Ntufu
16..	Sappo e joweego'o	Kono Wosu Sette	Ji hyitsun	Kum-nya-N1cwa
17	Sappo e jowee‹fii	Konno Wosu Sataree	Ji hyiyu	Kum-nya-Murfa
18.	Sappo e joweetati	Konno Wosu piti	Ji hyita	lsHmm-nya-Ncisu
19.	Sappo e joweenayi	Bojo	Ji hyinyali	Kum-nya-Umdla
20.	Nnogas	Juru	Wuntsun	Surkumari

Table 6: Counting System

COUNTING SYSTEM				
No.	**Ga'Anda**	**Yungur**	**Bille**	**Laka**
1.	Acta	Finni	Bako	Teen
2.	Sirri	Fata	Bari	Beek
3.	Mahkan	Talccn	Taro	maheka
4.	Foda	Iturun	Ine	Fwad
5.	Dirman	Wonon	Tongno	Tuf
6..	Mitcha	Mindike	Topurmuoh	Yidau
7.	Mud	Mbutu	TomBari	mburufung
8.	Fodfoda	Kunkurun	Tombitaro	teghes
9.	Wanhiha'arta	Wononlcurun	Toinbi-ine	Milin
10.	Kum	Bu	Lunn	Gemu
11.	Kum Girsi Arta	Buwuhñfini	Lumpuru-muoh	gemu tangekeneke
12	Kum girsi chap	Buwuhñfota	Lumpufiari	gemu bekeneca
13.	Kum girsi Mahkan	Buwuhñtalren	Lumputaro	gemuinahkanenaka
14	Kum gitsi Foda	Buwuhalcurun	Lumpuine	gemu fwadenoka
15.	Kum girsi Dirman	Buwuliñwonon	Lumputongno	gemu tufwenalco
16..	Kum girsi Mitcha	Buwuliñmindilce	Lumpuretopurinuoh	gemu yicfawenaka
17	Kum girsi Mud	Duwilhñmbutu	Lumpuretomfiari	gemu mburfuenalka
18.	Kum girsi Fodfoda	Buwuhñkunkurun	Lumpure tombitai'o	gemu taghosenaka
19.	Kum gitsi Wanhiha'arta	Buwuhñwononlcurun	Luinpure tombiine	gemu rnilipenako
20.	Kumcichap	Bus fota	Wuraniuoli	pubbuk

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Table 7: Counting System

COUNTING SYSTEM				
No.	**Dera**	**Maya**	**Jukun Kona**	**Laka**
1.	Dumoi	Bini	Ziu	Kara
2.	Rab	Lyi	Pena	Jo
3.	Kunu	Tat	Tsa'r	Muta
4.	Parau	Naat	Myeli	So
5.	Badt	Nong	Sono	Mi
6..	Bemci	Nibini	Sunji	Misha
7.	Boila	Ni'ii	Sunipe'nd	Shiri
8.	Torumen	Nitat	Weywey	Jijo
9.	Wandomoi	Ni naat	Zoruweywey	Jiltara
10.	Gum	Kob	Dub	Doku
11.	Gumdra Dumoi	Kob yan bini	Dub Gbana Ziu	Domu Gerelcara
12	Gumdra Rab	Kob yan iyi	Dub Gbana Pena	Doku Gerejo
13.	Gumdra Kunu	Kob yan tat	Dub Gbana Sara	Doku Geremuta
14	Gumdra Parau	Kob yan naat	Dub Gbana Myeh	Doku Gereso
15.	Gumdra Badt	Kob yan nong	Dub Ghana Sono	Dolcu Geremi
16..	Gumdra Bemei	Kob yan Nibini	Dub Gbana Sunjí	Doku Geremisha
17	Guindra Boila	Kob yan Ni'ii	Dub Gbana Sumpena	Dolcu Gereshiri
18.	Guindra Torumen	Kob yan Ni tat	Dub Gbana Weywey	Doku Gerejijo
19.	Gumdra Wanduinoi	Kob yan Ni naat	1Dub Ghana Zoruweywey	Doku Gerejikara
20.	Rabgumni	Ha Mini	Jirizwa	Dojo

4.1.3 Research Question 3: What are the similarities in the selected indigenous languages across Adamawa State?

The research will use the counting system (numerals 1 to 20) of the selected languages for the comparison. Areas of similarities are highlighted in green colour

Table 8: SIMMILARITIES

No.	**Bwatiye**	**Kilba (Haba)**	**Marghi**
1.	Hyido	Zhang	Pathlu
2.	Kpe	**Mutleu**	**Muthlu (Metlu)**
3.	**Mwakun**	**Makru**	**Makir**
4.	**Fuaht**	**Fwadu**	**Fodu (Fudu)**
5.	**Tuff**	**Tufou**	**Mtifu**
6.	Tukol-Taka	**Kwa**	**Nkwa (Kwa)**
7.	Tuko-lu-kpe	**Mudufa**	**Mudufu**
8.	Fuah- Fuaht	**Chisu**	**Tsisu (Cisu)**
9.	Do-mbi-do	**Dlah**	**Mdlu (Adlu)**
10.	**Bou**	**Kumah**	**Kumau (Kumu)**
11.	Bou-a-mbidyi hyido	Kwabu zhang	Kumu Gasirtan
12.	Bou-ambidyi Kpe	Kwabu **metleu**	Kumu gapwa **muthlu**
13.	Bou-a-mbidyi mwakun	Kwabu **makru**	Kumu gapwa **makir**
14.	Bou-a-mbidyi Fuaht	Kwabu **fwadu**	Kumu gapwa **fodu**
15	Bou-a-mbidyi Tuff	Kwa bu **tufou**	Kumu gapwa **mtifu**
16.	Bou-a-mbidyi Tukol-taka	Kwa bu **kwa**	Kumu gapwa **nkwa**
17	Bou-a-mbidyi Tuko-lukpe	Kwabu **mudufah**	Kumu gapwa **mudufu**
18	Bou-a-mbidyi Fuah-Fuaht	Kwabu **chisu**	Kumu gapwa **ntisu**
19	Bou-a-mbidyi Ta-mbi-do	Kwabu ndlah	Kumu gapwa
20	Bou-taluwo kpe	Mutleu kumu nyi	Mthlu

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Table 9: SIMMILARITIES

No.	**Michika**	**Ga'anda**	**Bura**
1.	Kute	Acta	Ntang
2.	Bwage	Sirri	Suda
3.	**Makene**	**Mahkan**	**Makir**
4.	**Fware**	**Foda**	**Fwar**
5.	Ncife	Dirman	Ntefu/Ntufu
6..	**Nkwa**nge	Mitcha	**Nkwa**
7.	**M**burefunge	**M**ud	**M**urfa
8.	Tigesi	**Fodfoda**	**Ncisu**
9.	Tiye	Wanhiha'arta	Umdla
10.	Munge	**Kum**	**Kuma**
11.	Munge- Kuteghi	**Kum** Girsi Arta	**Kum**-ka-tang
12	Munge- bwage	**Kum** girsi chap	**Kum**-nya-Suda
13.	Munge- **makene**glii	**Kum** girsi **Mahkan**	**Kum**-nya-**Malcir**
14	Munge- **fware**ghi	**Kum** gitsi **Foda**	**kum**-nya-**nfwar**
15.	Munge- ncifeghi	**Kum** girsi Dirman	**Kum**-nya-Ntufu
16..	Munge- nkwangeghi	**Kum** girsi **Mitcha**	**Kum**-nya-**Nicwa**
17	Munge- **m**burefungeghi	**Kum** girsi **M**ud	**Kum**-nya-**M**urfa
18.	Munge- tikesighi	**Kum** girsi **Fodfoda**	**kum**-nya-Ncisu
19.	Munge- tliyighi	**Kum** gitsi Wanhiha'arta	**Kum**-nya-Umdla
20.	Bakintswe	Kumcichap	Surkumari

Table 10: SIMMILARITIES

No.	**Fali**	**Yungur**
1.	Teen	Finni
2.	Beek	Fata
3.	**Maheka**	Talccn
4.	**Fwad**	Iturun
5.	**tuf**	Wonon
6..	yidau	Mindike
7.	**Mbu**refunge	**Mbu**tu
8.	Teghes	Kunkurun
9.	Milin	Wononlcurun
10.	Gemu	**Bu**
11.	gemu tangekeneke	Buwuhñfini
12	gemu bekeneca	Buwuhñfota
13.	Gemuinahkanenaka	Buwuhñtalren
14	gemu fwadenoka	Buwuhalcurun
15.	gemu tufwenalco	Buwuliñwonon
16..	gemu yicfawenaka	Buwuliñmindilce
17	gemu mburfuenalka	Duwilhñmbutu
18.	gemu taghosenaka	Buwuhñkunkurun
19.	gemu rnilipenako	Buwuhñwononlcurun
20.	Pubbuk	Bus fota

Though the eight selected languages compared are from different zones of the State, similarities are evident in all of them. The most common occurrence in all of them is the similarity in numerals 3, 4 and 5. Furthermore, Numeral 10 in Bwatiye of Adamawa South Zone has similar pronunciation and spelling with Numeral 10 of Yungur of the Adamawa Central Zone. These symbolise unity in diversity.

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V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0Introduction

This Chapter presents summary, conclusion, and recommendations based on the outcome of the study.

5.1Summary

The research on the proto-reconstruction of selected indigenous languages in Adamawa State presents the counting system of 20 indigenous languages and provides an analysis of the counting system of eight selected indigenous languages by shedding light on their unique features and commonalities. Through meticulous examination the study reveals the underlying structures and patterns that characterize these languages. It underscores the importance of preserving and revitalizing indigenous languages, highlighting their cultural significance and role in fostering identity and community cohesion.

5.2 Conclusion

The research concludes that the proto-construction of selected indigenous languages in Adamawa State offers valuable insights into the linguistic diversity and cultural heritage of the region as though the selected languages are from different zones of the State; similarities are still evident in spellings and pronunciations. By tracing, recording and comparing these languages, the linguistic evolution of these languages are indicated which deepens our understanding of their origins and connections. Moreover, it emphasizes the need for concerted efforts to document, study, and promote indigenous languages, recognizing them as integral components of Adamawa State's rich cultural tapestry. Preserving these languages is essential not only for safeguarding cultural heritage but also for promoting linguistic diversity and intercultural understanding.

5.3 Recommendations

Based on the findings of the research, the following recommendations are proposed. By implementing these recommendations, stakeholders can work together to preserve, revitalize, and celebrate the linguistic diversity of Adamawa State, ensuring that future generations have access to their rich cultural heritage.

i. Linguistic Documentation: Develop comprehensive documentation projects to record and analyze the lexicons, grammar, and phonological systems of selected indigenous languages in Adamawa State. This documentation should involve collaboration with native speakers and linguists to ensure accuracy and inclusivity.

ii. Language Revitalization Programs: Implement initiatives aimed at revitalizing indigenous languages, including language immersion programs, community language classes, and the production of educational materials in local languages. These programs should be tailored to the specific needs and contexts of each language community.

iii.Support for Indigenous Language Research: Allocate resources and funding to support research on indigenous languages, including scholarships, research grants, and academic partnerships. This will encourage interdisciplinary collaboration among linguists, anthropologists, historians, and community members to enrich understanding of these languages.

iv. Promotion of Multilingualism: Promote multilingualism in educational settings and public institutions by incorporating indigenous languages into curricula, signage, and official communications. Foster a culture of linguistic diversity and respect for all languages spoken in Adamawa State.

v. Community Engagement and Empowerment for Further Research: Engage indigenous language speakers as active participants in language preservation and promotion efforts. This will empower local communities to take ownership of their linguistic heritage through community-led language projects, cultural events, and language advocacy campaigns.

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