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A DESCRIPTIVE ANALYSIS OF MUNDARI: A STUDY OF THE STRUCTURE OF THE MUNDARI LANGUAGE ACCORDING TO THE METHODS OF LINGUISTIC SCIENCE, WITH PARTICULAR ATTENTION TO THE UNITS OF SOUND, THE UNITS OF MEANING, THE UNITS OF GRAMMAR, AND THEIR MUTUALLY CONTRASTIVE ARRANGEMENT PATTERNS.

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A DESCRIPTIVE ANALYSIS OF MUNDARI

A Study of the structure of the Mundari language according to the methods of linguistic science, with particular attention to the units of sound, the units of meaning, the units of grammar, and their mutually contrastive arrangement patterns.

A Dissertation

Submitted to the Faculty of the

Graduate School of Georgetown University

In partial fulfillment of the requirements for the

Degree of

Ph.D. in Theoretical Linguistics

by

Rev. Walter Anthony Cook, S.J.

Washington, D.C.

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GEORGETOWN UNIVERSITY
GRADUATE SCHOOL

The dissertation of Walter Anthony Cook, S.J. entitled

A DESCRIPTIVE ANALYSIS OF MUNDARI

submitted to the department of Languages and Linguistics in partial fulfillment of the requirements for the degree of Ph.D. in Theoretical Ling. in the Graduate School of Georgetown University has been read and approved by the Committee:

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PREFACE

Mundari is a language spoken by the Munda tribe in the Chota Nagpur region in South Bihar State, in the northeast section of India. It is a member of the Munda family of languages, including Santhali, Kharia and Ho in the immediate vicinity. It has two principal dialects, Hasada Mundari and Naguri Mundari. In the Indian Census of 1961, the Mundari language is listed as having .585 million native speakers. Taken together with Ho, a language listed as having .629 million native speakers, and closely allied to the Mundari group both by linguistic similarity and geographical location, the Mundari group lists well over a million speakers.

The author lived among the Mundas and Hos in the Singhbhum District of South Bihar State almost continuously from October,1953 until February, 1962, a period of a little over eight years. During part of that time, he worked with Menas Orea of village Buruma, one of the native informants listed by the Rev.John Hoffman as a main contributor to the Encyclopedia Mundarica. Menas Orea is also the author of a novel, written in Hoffmann's time, which is now being revised for publication. Through the cooperation of the Ranchi Catholic Mission, part of this novel, as well as the unpublished "T" and "U" volumes of the Encyclopedia Mundarica were made available. The originals remain in the archives of the Ranchi Mission.

In the production of a doctoral dissertation, the number of acknowledgements required would suppose an endless list. First of all, in India, thanks must be extended to the Rev.Martin Topno,S.J. head of the Munda publications division of the Ranchi mission, a native Munda speaker who supplied the Menas Orea manuscript and answered many questions about the language; to Rev.C.DeBrouwer,S.J. the archivist, who supplied the U-volume of the Encyclopedia on microfilm; to the Rev.John K.Bingham,S.J.,of the Jamshedpur Mission, who supplied tapes of a passion play done by native Munda speakers at Bandgaon.

Here in the United States, thanks are due first of all to NDEA, which supplied a grant to support work on this dissertation; to the Chicago University Research Program in Munda languages under the direction of Dr.Norman Zide, for their helpful cooperation; also to Dr.D.Terence Langendoen, now of Ohio State University, who supplied his own excellent treatment of Mundari Phonology done under the same program.

Finally, for our own formation in linguistic science, we must acknowledge a debt of gratitude to the Institute of Languages and Linguistics of Georgetown University, to its Dean, Dr.Robert Lado, and its many staff members, including Dr.Charles C.Fries in language structure, Rev.Francis P.Dinneen,S.J. in theory, and Dr.Charles A. Ferguson in Sociolinguistics. With their help,anything is possible.

Anyone who has attempted an initial description of the total structure of a language, including its phonology, morphology and syntax, realizes that such a description can be at most tentative. The initial description is most necessary, but can hardly hope to be definitive. What we can hope for is that the continued attempt to produce these definitive descriptions will bring to focus some of the main problems within the language, and eventually leads us towards ever more accurate statements of the structure of the language under consideration, as well as towards the development of a consistent theory of language which will make further attempts at description more fruitful. If the present work should succeed in focussing attention upon some of the main problems in Mundari, and in presenting at least the broad outlines of the language structure for comparative work and the future development of more complete studies of Mundari grammar, it will have accomplished its purpose.

Walter A.Cook,S.J.
Georgetown University
June, 1965.

INTRODUCTION

LANGUAGE AND METHOD

The Mundari language is a language spoken by the Munda tribe in the Chota Nagpur region in South Bihar State in the Republic of India. It is one of the Munda family of languages, which also includes the Santhali, Ho, and Kharia languages in the immediate vicinity, and other Munda languages scattered throughout India. The Munda family of languages is distinct from both the Indo-European Family and the Dravidian Family of languages. The Munda family has existed in India from Vedic times side by side with the other two major language families, in the relative isolation of the Indian sub-continent.

An initial description of a language requires as introduction an initial identification of the language, an explanation of the method to be used in its description, and an outline of the main sources in which former work on the language is available. This introduction has three parts corresponding to these three requirements:

(a) The Mundari Language: a description of the language, including its family, its relationships to other languages, and its dialects.

(b) Modern Linguistic Science: including the study of languages as systems of communication, and language as a sign system.

(c) The works of the Rev.John Hoffmann,S.J. on the Mundari language.

1. THE MUNDARI LANGUAGE

The standard work of the language of the Indian sub-continent is the Linguistic Survey of India, by George A. Grierson. Because of the massiveness of this survey, done at the turn of the century, it has never been supplanted by a more modern version. Within this survey, the volume of the Munda languages, Vol.IV, was the work of Dr.Sten Konow, of Norway. For his information on the Mundari language, he asked for information and samples of the language from the Rev.John Hoffmann,SJJ., who had previously published his Mundari Grammar. As a result, three of the five examples of the Mundari language cited are contributions made by Hoffmann. Unfortunately, these selections were edited and the phonology changed to conform to the survey.

In the Indian sub-continent, there are three major language families, the Indo-Aryan, the Dravidian, and the Munda families. The Indo-Aryan languages, sometimes called the Indic branch of the Indo-European family, include classical Sanskrit and the modern Indian languages, such as Hindi-Urdu, Bengali, Gujerati, Marathi, Assamese, Punjabi, Kashmiri, Rajasthani, and Oriya. Most of these languages are highly standardized, and many have extensive literatures. Together they numbered over 330 million speakers in the 1951 census.
The Dravidian languages, predominant in South India, include Tamil, Malayalam, Kannarese, and Telegu, all highly standardized and with

extensive literatures. Besides the major languages of South India, the Dravidian family also includes a few scattered tribal languages, such Oraon and Brahui. Collectively this group numbered more than 90 million speakers in the 1951 census.

The Munda family, located principally in the Chota Nagpur region, includes Santhali, Mundari, Ho and Kharia, as well as a few scattered tribal groups outside of Chota Nagpur, such as the Korku and Sora groups. These are non standardized vernacular languages used by tribal groups, and have little or no literature. They numbered over 5 million native speakers in the census of 1951. Within the Munda family, the Santhali is the largest group, with 2.8 million speakers in 1961. They are located principally in the Santhal Parganas region of Bihar State, and the neighboring regions of Hazaribagh, Singhbhum and Mayerbanj. The Ho tribe is next in numerical count, with .629 million speakers in 1961, located almost entirely in the western part of Singhbhum District, a region known as the Singhbhum Kolhan. The Munda tribe is next in numerical count, with .585 million speakers in 1961, located just north of the Ho country in northern portions of Singhbum district, and the East and South portions of Ranchi district. Mundas are also found as far north as Hazaribagh, and as far west as the Biru district. Isolated working groups are found in the Andaman islands, and in the tea gardens of Assam and West Bengal. The Kharia tribe is a much smaller group than any of the others, with approximately 150,000 native speakers listed in the 1961 census.

The Mundari language consists of two principal dialects, the Hasada and the Naguri dialects. The Hasada dialect is that dialect which Grierson calls the dialect of the Mankipatti districts. The Hasada speakers live in the Southeast corner of the Ranchi district, in an area bordering on and east of the Ranchi-Chaibasa road, in a district roughly centered around the village of Sarwada. This dialect is distinguished by its rejection of aspiration as a phonemic feature, which eliminates all of the voiced and voiceless aspirated stops. It also resists loan words and grammatical structures from Hindi or Sadari. The Naguri dialect is spoken west of the Ranchi-Chaibasa road, extending west as far as Biru district, and south to the border of Orissa state. They outnumber the Hasada speakers about two-to-one. This dialect accepts aspiration as a phonemic feature, and makes use of Hindi and Sadari loan words and constructions.

The Ho language,also, may be considered as a dialect of Mundari. If mutual intelligibility is any criterion, Ho and Mundari are a single language. The difference,in the Ho language, is that all of the oral resonants [r̥] are deleted in Ho, and the nasal retroflex [n̥] becomes a simple dental nasal [n]. Such forms as [riring],'forget'; [horo],'man' become ring,'forget', and hō,'man', in the Ho language. Forms such as sena,'wisdom' and pahan,'sacrificer', become sena and pahan in Ho.There are also minor grammatical differences. but not such as to interfere with mutual intelligibility.

Historically, the Munda tribe belongs to that larger group of Adibasi, or aboriginal, races that inhabited India before the Aryan invasion. At the time of this invasion, when the Dravidian forces were defeated by the advancing Aryans, the Munda tribes were displaced in turn from their former home in the north, and driven back by these Dravidians. In his monograph,"The Mundas and Their Country",(Calcutta: The Kuntaline Press,1912.), Sarat Chandra Roy describes the wanderings of the Munda tribes towards their present home.

> "Some of the Kol tribes, such as the Korwas, the Asurs the Birjias and the Kisanrs, appear to have followed the course of the Koel river till they reached the present districts of Palamau and Ranchi."
> (op.cit.,p.110)

The Mundas and the Santhals then proceeded southeast along the border of the former Lohardaga district towards the village of Omedanda, where the present districts of Ranchi, Palamau and Hazaribagh meet. The Mundas and Santhals now separated from each other, the Santhals moving on towards the present Santhal district, and the Mundas staying in the forested regions of the Chota Nagpur plateau in Ranchi district. The Linguistic Survey of India also attests the antiquity of the Munda race and Mundari language, placing their origins somewhere around the 8th century B.C.before the Tamulian conquest. Hoffmann, in an article in the Encyclopedia Mundarica entitled "horo", also confirms this antiquity of race, but believes that it was the Santhali races which absorbed the first shock of the Aryan invasion in pre-Vedic times. Whatever the case, the Munda tribes migrated south at this time.

Even after being established in their new home, the Mundas were forced gradually down into the south portion of the Ranchi district by the pressure of the Oraon tribe, a tribe of Dravidian origin. The Santhals had already separated from the Mundas, crossing the Damodar river into the present region of the Santhal Parganas.

The separation of the Ho tribe from the Mundas occurred much later. The Hos originally lived in the Hasada country near Sarwada, and many of their clan names are still identical with the names of villages in this part of the country. The Hos migrated to the plains of Singhbhum district by way of the Porohat estate before the Rajas,or kings, were established in the Munda district. [EM.1763, Article,"Ho"] The Hos claim both racial and linguistic independence of the Munda tribe, but the Ho language is really no more than a Munda dialect.

> "There is much less difference between the Hasada and Ho dialects than between the Hasada and Naguri dialects." [EM.1763, Article,"Ho"]

The probable sequence of events suggested by Hoffmann is (1) the first migration under Risa Munda to the Chota Nagpur plateau,(2) the establishment of the first Raja over Mundas and Oraons around 500 B.C., (3) the second migration of Mundas under Matura Munda to Khunti, and (4) the separation of the Mundas from the Hos. Whatever their origin, the Hos were well established in Singhbhum in the early 18th century, and expelled all invaders from their land. They submitted to British rule in 1836, and the Singhbhum Kolhan region was established.

The Linguistic Survey of India, in Vol.IV, The Munda and Dravidian Families, Part I: The Munda Family, describes the Mundari language. First, the characteristics of the Munda family of languages are given, then a list of the principal Munda languages with a description of each, and finally a list of 241 words and phrases are listed for a comparison of the various languages of the Munda family. The relationships of the Munda family of languages to other languages of the world is given in the following selection from that volume:

> "The Mundas, the Mon-Khmer, the wild tribes of the Malay peninsula, and the Nicobarese all use forms of speech which can be traced back to a common source, though they mutually differ from each other."
> [LSI.Vol.IV.Part I/p.15]

This opinion, given in 1906 with the publication of Volume IV, has never been substantially changed. All refer back to this source. The Linguistic Bibliography also associates the Munda-group with the Mon-Khmer languages in its language index, but there is little evidence of any useful information on the Munda languages, except the dissertation of Dr.Norman Zide on the Munda language,Korku. No references at all are given which deal specificly with the Mundari language.

Edward Sapir (Language,1921) points out the structural relationship between Munda, Malayo-Polynesian, and Mon-Khmer languages. According to Sapir, these languages show a morphological structure which can only be explained in terms of a common source, that has left vestiges in these languages. The similarities of morphological structure are too great to be explained by a mere borrowing process.

Leonard Bloomfield, (Language,1933), refers to the Munda languages as spoken "on the southern slopes of the Himalayas and round the plateau of Chota Nagpur", including the Munda tribe in its natural home and the tea garden workers who have emigrated to West Bengal and Assam.

> "Some scholars believe both the Munda and the Mon-Khmer families to be related to the Malayo-Polynesian family, (forming the so-called Austric family of languages)."
> (op.cit.p.70)

John B.Carroll, (The Study of Language,1959) mentions the Munda family of languages as among the least known in the entire world.

Final conclusive evidence of the relationships of the Munda family of languages to other families of languages will depend in large part upon basic analytical work in a whole series of Munda languages. This type of basic research program is what has been undertaken at Chicago University under the direction of Dr.Norman Zide. Until the results of this research are available, the only guide for the number and kinds of languages to be included within the Munda family is the Linguistic Survey of India by Grierson, which gives this list of names.

Kherwari	Asuri	Birhor	Juang(Patna)
Santhali	Korwa	Koda	Sarara
Karmali (Kalha)	Mundari	Kurku	Godaba
Mahle	Ho (Larka Kol)	Nahali	
Turi	Bhumij	Kharia	

2. MODERN LINGUISTIC SCIENCE

Linguistic science has developed considerably from the time of Hoffmann. The linguistic insights of Ferdinand De Saussure, in his "Cours de Linguistique Generale"(Geneva,1916), which separated the diachronic from the synchronic approach, the psychological insight of Edward Sapir, in his "Language"(1921), and the methodology of Leonard Bloomfield, in his "Language"(1933), had their full effect upon modern linguistic science after Hoffmann had produced his monumental works. This science did not reach full maturity in America until the early 1940s, during the course of the Second World War.

This approach represents a methodology in variance with the traditional method of writing grammars. The emphasis is upon the external formal signal,- the formal signs and their distribution,- rather than upon the content of the sign. In this study of forms, the spoken form is considered to be logically and psychologically prior to written forms of the language. This emphasis upon the external spoken form allows an objectivity on the part of the analyst that was not always present in the construction of traditional grammars, a development which Hoffmann himself would have approved.

> "It is to be hoped that the rapidly increasing study of non-Aryan languages may soon create a rational terminology which will be applicable to isolating and agglutinative,as well as to organic languages."
> (MG.Intro.lvii)

2.A. LANGUAGE AS COMMUNICATION

Language may be described in terms of a communications model. This model describes the sending of a message from a source to some destination by means of a transmitter and receiver which are built to send and receive this message in some coded form. The message in coded form, called the signal, is made up of bits, which are then transmitted through a channel, with or without the interference of noise. The terms used in such a model can be outlined in three steps: the message at its source, the message in transition, and the message at destination.

(1) The Message at its Source

(a) The source is the place where the message originates;

(b) The transmitter is the apparatus for sending the coded message;

(c) The encoding process is that process by which the message is reduced from its original form to a coded form, called the signal, which the transmitter is capable of sending.

(2) The Message at its Destination

(a) The destination is the place where the message is received;

(b) The receiver is the apparatus for receiving the coded message;

(c) The decoding process is that process by which the message is restored, by means of a code reader, from the signal to its original form. The receiver receives only signals. It is required that the source and destination possess a code in common, in order that the coded messages might be received, decoded and understood.

(3) The Message in Transition

(a) The Channel is the route from transmitter to receiver;

(b) The signal is the coded message from traverses the channel;

(c) The "bits" are minimum parts of a signal;

(d) Noise is anything which interferes with the signal in the channel; Noise is added to the signal after it leaves the transmitter and before it reaches the receiver; noise is produced in the channel.

(e) Redundancy is the transmission of more bits than is necessary in order to convey a given message from source to destination.

Language is a system of thought communication, which consists of two elements: the content, or thought to be communicated, and the expression, the formal outward spoken sign, arbitrary in its origins, but fixed by human convention, by which men communicate thought.
In human speech, the source is the person who is speaking, or more precisely, the mind of the speaker where the spoken message originates The transmitter is the vocal apparatus, designed for other purposes, but adapted by the speaker for use in transmitting spoken messages. This includes the lungs, larynx, pharynx, vocal cords, oral and nasal cavities, the tongue, lips, teeth,- whatever physical apparatus is used in the production of speech sounds. The encoding process is the association, in the mind of the speaker, of the mental concept with those articulatory images which represent that concept. This encoding process is a psychological process,and the true origin of language.

In human speech also, the destination is the person who hears, or more precisely, the mind of the hearer who receives the message. The receiver is the auditory apparatus designed expressly for the reception of all types of sounds, including speech sounds. This includes the outer ear, the ear drum, the inner ear and its bone structures, whatever contributes to sound reception. The decoding process is the association, in the mind of the hearer, of the acoustic image of the sounds heard with the mental concepts which those acoustic images represent in his own language. This process is likewise psychological.

Human speech travels from speaker to hearer, by way of a transmitting and receiving apparatus. The message to be conveyed is coded so that it can be handled by this transmitter and receiver. The signal is the coded message as it travels from the transmitter to the receiver. It is physical speech sound, and may be measured by means of acoustic instruments and described in terms of acoustic properties. The channel is the route traveled by the speech sounds from the articulatory apparatus of the speaker to the auditory apparatus of the hearer, whether this be directly through the physical action of the air waves, or indirectly through such mechanical aids as radio, telephone, television, or various speech amplifiers. The bits are minimum parts of the speech signal in the channel, the minimum sound units, lexical units and grammatical units of the language. Redundancy is the transmission of more bits than is necessary to convey a message.

In spoken English it has been estimated that redundancy is normally about 50%, that is, that the English speaker habitually transmits half again as much as is necessary to convey a given message. This generous redundancy is a guarantee that the message will be properly conveyed. Noise in human speech includes whatever might interfere with the spoken signal in actual transition. Noise is added to the signal after it leaves the transmitter, and before it reaches the receiver. Such noise includes all extraneous sounds, such as other people talking, but does not include the mental distractions of the hearer.

A model such as the communications model gives us a framework within which to discuss the facts of speech, with a wide range of analogy with other means of signal transmission, such as the codes used by animals to communicate with each other, and the various mechanical transmission systems developed by man for communication. Within this model, language is placed in the psychological processes of encoding and decoding. The routes from source to transmitter, and from receiver to destination, are physiological. Actual transmission of the message by way of a signal in the channel is purely physical. The model adequately distinguishes the message, or language content, from the signal, or language expression, and describes these in terms of an encoding-decoding process, by which the content and expression of language are habitually associated, for purposes of communication, by the members of each single speech community.

2.B. LANGUAGE AS A SIGN SYSTEM

Language is a system of communication between the members of a single speech community, by which the thoughts of the speaker are transmitted to the hearer through a system of formal outward signs. Linguistic science studies language from the point of view of its outward structure or expression, but at no point in this study can the external formal signs be completely cut off from a consideration of the concepts which they signify. It is a study of expression, but always with respect to the content that underlies expression. The objects of linguistic science are linguistic forms, considered in relation to what they signify.

The linguistic analyst must approach the study of a specific language objectively, with the intention of isolating the various units which carry meaning, the bits by which these units are distinguished from each other, and the ways in which these units are put together into meaningful propositions. This involves him in a three level process of analysis; a study of the minimum units which differentiate lexical units,- the study of phonology; a study of the lexical units which carry meaning,- the study of morphology; and a study of the ways in which these lexical units are used in complete utterances,- the study of grammar.

Phonology studies the minimum sound units of language. These units are called phonemes. A phoneme is defined as that minimum unit of

sound which has the capacity of changing the meaning of a lexical item. These sound units do not have meaning, but they have the power to distinguish meaningful units. This type of meaning is sometimes called differential meaning. The phonological hierarchy is the classification of all sounds. At the lowest level are all the possible sounds that might be heard in a given language. These sounds are called phones. At the next level, these phones are organized as allophones, or other phones, belonging to a class of sounds called the phoneme. This phoneme is not a sound, then, but a universal which contains certain essential features in its comprehension, and is realized in its extension in a concrete set of allophones. These phonemes are then mapped into the next hierarchy, in which meaningful lexical units are formed. Specific sequences of sound units are arbitrarily assigned a meaning, and thus become the meaningful units of the language.

Morphology studies the minimum meaningful units of language. These units are called morphemes. A morpheme is defined as a minimum unit, a sound sequence which has its own meaning. This meaning of the morpheme is called its referential meaning, or content. The lexical, or morphological, hierarchy involves the classification of all forms. At the lowest level, all the forms which recur with any specifiable meaning are listed; but at a higher level, these forms, called morphs, are grouped into classes of forms with the same meaning, as allomorphs of the same morpheme. This morpheme is a universal which has some referential meaning as comprehension, and is extended in allomorphs.

These morphemes are then mapped into the grammatical hierarchy as morpheme classes which assume a grammatical function, and enter into the grammatical structure of the language.

Syntax, or grammar, studies the minimum grammatical units of a language. These units, in one system of grammatical analysis, are tagmemes, or arrangements. A tagmeme is defined as a correlation between a morpheme filler class and a functional slot in a construction frame. This function-form composite carries with it a meaning over and above the lexical meanings of the items involved. This meaning is called grammatical meaning. The grammatical meaning, plus the lexical meaning, of an utterance equals the linguistic meaning. Other associated social and cultural meanings are attached to utterances, but these are considered to be non-linguistic, that is, not carried by the forms or constructions as such. The grammatical hierarchy then involves a classification of the grammatical structures in which lexical units are found. At the lowest level, these units are tagmas, or arrangements. At a higher level in the same hierarchy these tagmas are grouped into sets in which they are considered as allotagmas of a single tagmeme. This tagmeme is a universal which has a specified function, to which is attached a grammatical meaning as its comprehension, and this is realized in extension in a specific set of morpheme class sequences which are said to manifest a particular construction. These tagmemes are further arranged in constructions at particular levels, such as the phrase level, the clause level, and the sentence level of grammar.

3. THE WORK OF JOHN HOFFMANN

Almost all of the work done on the Mundari language is the work directed by one man, the Rev.John Hoffmann,S.J., a German Jesuit who joined the Ranchi Catholic Mission in the Chota Nagpur region. Prior to the introduction of the Christian missions in Chota Nagpur, nothing was known about the Mundari language. The Lutheran Mission was founded in Chota Nagpur in 1845, and after a schism in this church a group joined the Anglican Mission in 1869. During this same year, the Catholic mission was inaugurated by the advent of Fr.Stockman,S.J. to the district capital at Chaibasa. Due to the work of these pioneers the language was committed to paper, an orthography devised in Roman script, and initial attempts were made to construct grammars, and to transcribe the Bible and other teaching materials.

Hoffmann was a linguist before he became a missionary. In the introduction to the "A" Volume of his Encyclopedia, he mentions that he gathered materials on the Mundari language before he was assigned to the mission, as early as 1888. The only sources available to him at this time were grammatical notes and Bible translations from the Lutheran and Anglican missions. Hoffmann was assigned to Chota Nagpur in 1892. By 1903 he had published his Mundari Grammar, and because of this work,- still the standard grammar for Mundari-, he was able to cooperate in the publication of the Munda volume of the Linguistic

Survey of India, published in 1906. Sensing that his reference grammar was not the best vehicle for rapid mastery of the language, he began the publication of his Mundari Grammar with Exercises, Part I of which appeared in 1906, and Part II in 1908. These two volumes consider all of the tenses of the Active voice, but not the passive and reflexive. Apparently Hoffmann had intended to enlarge these exercise books into a complete series for the learning of the Mundari language. These two volumes are extent, but out of print at this date.

Meanwhile Hoffmann had obtained a grant of Rs.1000 from the Lieutenant-Governor of Bengal for the publication of what was to be his most significant work, the 12 volume Encyclopedia Mundarica. Beginning this work around 1906, he was repatriated to Germany during the First World War, and was allowed to take along his manuscripts. In 1919 he received further assurance from Bengal that the Government would print the material when it was prepared. Working in cooperation with the missionaries still in India, particularly Rev.Arthur Van Emelen,S.J.,he continued work on the Encyclopedia, and published it with the dateline Dortmund,Germany, October 4th,1924.

These works,then, are all of the sources for Mundari:

(1) Mundari Grammar, 1903. Calcutta:Bengal Secretariat Press [MG.]

(2) Mundari Grammar with Exercises,1906,1908,Calcutta.Catholic Press.

(3) Encyclopedia Mundarica, 1930,Superintendent,Gov't Printing,Patna[EM]

In his treatment of phonological questions, Hoffmann was quite accurate in his transcriptions, but meager in his description. The first four pages of his grammar are devoted to a description of the Mundari vowels and consonants, and the first nine pages of the later Encyclopedia are given to Mundari sounds and their representation. Most of this description is confined to the checked vowels and consonants.

The checked vowels, which modern phoneticians would describe as a sequence of vowel-glottal stop-vowel,[V?V], are described by Hoffmann in the following manner, with reference to their production:[EM.p.(5)]

> "Pronounce the vowel in its ordinary way, and then check it quite suddenly by a rapid contraction of the upper throat muscles; and then, by a relaxation of these muscles, allow the breath or sound to flow out without giving it any further modulation."

The checked consonants, which modern phoneticians would describe as a homorganic post-nasalization, are described by Hoffmann. [MG.p.3].:

> "The consonant b', thus checked, sounds somewhat as though it were followed by a slight m: ub'= ub-m. The consonant d' sounds as if it were followed by a slight n: med'= med-n. In reality, however, there is neither an m nor an n attached to these consonants."

In speaking of his transcription of the glides in Mundari, Hoffmann reveals his conscientious approach to the recording of phonetic material.

> "It is not easy to distinguish au and ao, but the Mundas maintain that there is a distinction..... Pains are taken to write au where the Mundas feel an u. A similar difficulty exists for the distinction between ai and ae. [EM.Vol."A",p.(2)]

With this type of approach, it is easy to accept as valid the phonetic representation of the language as given in Hoffmann's orthography.

However, Hoffmann, with his work substantially complete by the year 1924, shows no knowledge of the phonemic principle which was not clearly expressed until the work of Sapir in 1925. Consequently, his orthography may be accepted as phonetically sound, but not phonemically valid. The checked consonants, for example, are merely positional variants of the regular consonants, in a distribution which Hoffmann himself recognized and clearly stated in the Encyclopedia.[EM.p(6)].

> "The consonants b and d are always checked at the end of a word....In the body of a word they are checked when they are followed by a consonant."

Given this distribution, it is not necessary to check the consonants at all in writing them, since it is clear from Hoffmann's distribution rule that these consonants are checked finally,and in medial position only before consonants. A native speaker of Mundari, reading a b or d, would automatically check these consonants in the proper position.

Again, Hoffmann objects to the use of the symbols y and w for the glides in Mundari, which he marks as [ĕ],[ĭ], or as [ŏ],[ŭ]. His reason for rejecting y and w is that these are "fricative" sounds.

> "Though very short, these glides never cause those fricative sounds, which give rise to the so-called semi-vowels, y and w." [EM.p.(2)].

In modern phonetics, the sounds /y/ and /w/ are vocoid glides used as consonants,and are not associated with a fricative sound. The /y/glide is forward and upward, as in [ĕ] and [ĭ] following a vowel,and the /w/ glide is a glide backward and up, as in [ŏ] and [ŭ].

Hoffmann's phonology, then, errs in the direction of being more accurate than the phonemics of the language would require. As a result, it is possible, by and large, to accept the whole of his phonetic transcription as the basis for phonemic work, with the assurance that his whole Encyclopedia, as transcribed, is as good as any body of material that could be acquired directly in the field by a modern phonetician trained to recognize and describe the sounds of language.

In morphology, Hoffmann has made his most substantial contribution. Beginning with an agglutinative language, with no prior model or set of terminology to work with, he has established the morphology of the language in a way that is of lasting value. According to the more modern terminology, many of his reasoned explanations will be disregarded as being too much under the influence of traditional grammar. But Hoffmann was able, even with this framework, using a broader philosophical background, to point out the differences between agglutinative and other types of languages, to separate primary roots from formative elements, and cite forms to establish his conclusions.

Syntax is perhaps the weakest link in the chain. Although Hoffmann devotes part of the introduction of his grammar to the Mundari sentence or proposition, this is not carried through to a real description of the order of elements in the Mundari phrase, clause, and sentence. The emphasis of the grammar is upon word formation.

In conclusion, the work of Hoffmann is the only starting point for a study of the Mundari language, as his works have become the classical works in their field. The work has been very thoroughly done, and the phonetic transcription may be taken as reliable,- very likely the most reliable transcription of any of the Munda languages. In his morphology, the essential analysis is complete, but can be reworked in modern terms. The syntax, with a solid morphology as a basis, must be developed from hints in the grammar, and the citation forms available.

With the methods that have been developed in modern linguistic science, and faithful to the tradition that has made the works of John Hoffmann the classics that they are, it should be possible to evolve a complete description of the Mundari language which would both satisfy the rigid requirements of the modern science and keep the traditional value of the works of Hoffmann,- a development which Hoffmann himself would have desired.

John Hoffmann had a great interest in the Munda people. His work included the formation of the Catholic Credit Cooperative in Ranchi, as well as his works on language. While helping the Mundas toward economic stability, he feared that their language would one day be lost to the scientific community. This fear was unjustified. Today Mundari remains a vital language, with over a million speakers, open to the investigation of linguists today.

PART I

THE PHONOLOGY OF MUNDARI

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Language is a code by which a message is sent from a source to a destination. The message is encoded at the source, and then sent by means of a transmitter through a channel to the receiver, where it is decoded and relayed to its destination. In the study of Phonology, we consider the coded message or signal in the channel as made up of bits. The significant bits of the signal are the phonemes of the language. These bits, taken singly, do not have meaning, but they have the power to change the message. Whenever a significant bit is changed, the message which is being carried by the signal is also changed. The first great problem of language is to isolate and classify these minimum significant units of sound out of which the signal is constructed.

Phonology is the study of the minimum significant bits of sound in a language, and the ways in which these sound units are arranged in patterns. This study includes phonetics, which is the initial study and description of all the sounds that occur in the language, regardless of the way in which they are organized, and phonemics, which is the organization of these same sounds into distinctive sound units which are capable of signalling a change in the meaningful symbols of this specific language. The number of sounds found within a single language is infinite, but the organized sound units are less than fifty.

Phonemes often are represented by more than one sound. Each of the different sounds associated with a single sound unit is called a phone (from the Greek word, phone',' sound'). When several different sounds are associated with a single sound unit, these sounds are said to be allophones, or 'other sounds' of the same phoneme. The phoneme then represents a set of class of sounds which act as a single sound unit within the sound system of the language. It is a universal, whose comprehension consists of the distinctive features of sounds by which it is distinguished from other sound units, and whose extension is the specific set of sounds by which the unit is manifested in the sound transmission of particular messages.

Phonemic Analysis is that process by which the phones of a language are isolated and grouped into sets called phonemes. This analysis is based on the following presuppositions:

(1) Sound Differences: Phonemic Analysis presupposes that the meaning differences in the message are signalled by the sound differences in the signal transmitted. Consequently, the only sound differences which are significant, are the sound differences which can change the message.

(2) Limitation: Phonemic Analysis of spoken and written language presupposes that the number of sound units is finite. Otherwise the transmission of messages by rapidly changing sound units would become an impossibility, because of the physical and physiological limitations of the human person. Languages have a finite number of sound units.

The Principles of Phonemic Analysis by which the utterances of a language are segmented into sound units, which are then identified and classified as phonemes, can be reduced to four general rules:

(1) The Principle of Identity: Sounds are similar or dissimilar. Dissimilar sounds must belong to different phonemes. Similar sounds may belong to the same phoneme. By similar sounds is understood that these sounds have some of their identifying features in common.

(2) The Principle of Contrast: Sounds in contrast in identical environments, when the sound difference is paralleled by a meaning difference, must belong to different phonemes. Sounds, however, which are not in contrast, and are either in complementary distribution in mutually exclusive environments, or are in partial complementation with some free variation, may belong to one and the same phoneme. The positive fact of contrast establishes a phoneme. Once a phoneme always a phoneme. The negative principle of complementary distribution leads to the assumption that since these sounds are not,de facto, found in contrast, therefore they will not occur,and cannot occur in contrast.

(3) The Principle of Symmetry: It is assumed that phonetic patterns tend towards phonetic symmetry or neatness of pattern. Phonemic systems which do not show this pattern congruity are considered less likely.

(4) The Principle of Economy" A phonemic interpretation should tend towards the establishment of the least number of phonemes. However, the least number of phonemes per utterance is also part of economy, even when this demands a larger number of phonemes in absolute count.

The Results of Phonemic Analysis are the phonemes of the language, listed in a contrastive phonemic chart, and accompanied by a description of the allophones by which each of the phonemes is represented, and the distribution of these allophones in the meaningful units of the language. Phonemes are the sounds of which words are made. Since the phoneme is a universal, the words are not composed directly of phonemes, but of the particular allophones by which the phoneme is manifested here and now. Phonemes of the following types are found: (a) Segmental phonemes,-the phonemes which occur in regular linear order within the word structure,- are the consonants and vowels of the language. Included also are the glides, which may be either consonants or vowels, depending upon how they are used in the language. (b) Supra-segmental phonemes,- the phonemes which occur simultaneously with segmental phonemes,- include the phonemes of tone, stress, pitch, and juncture. These supra-segmentals are of two classes: the supra-fixes attached to individual sound units, such as tone, stress and juncture, and the supra-segmentals that act as part of the intonational pattern, sentence stress, terminal contours, and pitch levels.

The phonological hierarchy which emerges from the analysis is a triangular structure with all occuring sounds at its base, grouped into phones, then into phonemes, then into phoneme classes. At each step in this abstractive process, something is retained and something left behind. The analyst must retain all distinctive features.

The description of sounds may be either articulatory or acoustic In articulatory description, the sound is described in terms of the physiological movements of the vocal apparatus; in acoustic description the sounds are described in terms of the physical characteristics of the sound in actual transmission. These descriptions are not contradictary, but complementary. Whether the sound be described as it leaves the transmitter, or as it occurs in the speech channel, it is still the same sound. A description of sounds in terms of the articulatory process is more useful for the teaching of pronunciation; a description in terms of acoustic features is more susceptible to scientific measurement by machine.

According to their articulatory description, sounds of a language are divided into two classes, called contoids and vocoids. These terms are phonetic, and refer to the classification of sounds. The terms vowel and consonant are reserved for the functional use of sounds within a specific phonemic system. The term "vocoid" includes what we would ordinarily consider as vowels and glides; the term contoid includes what we ordinarily consider consonants. All vowels are vocoids, but not all vocoids are vowels; for the glides are also vocoid in production whether they act as vowels or consonants in the language. All contoids are consonants, but not all consonants are contoids; some consonants may be glides, that occur in consonantal positions in the language, and so act as consonants of the language.

The Vocoid Sounds of Articulatory Phonetics are the sounds which are produced with the following essential characteristics:

1. Vocoid sounds are oral. They are produced by the air stream passing through the oral passage, as contrasted with those sounds which pass exclusively through the nasal passages, the nasal sounds.

2. Vocoid Sounds are frictionless. They are produced by an air stream which passes through the oral passage without any noticeable obstruction or turbulence. They are in contrast with stopped and fricative sounds.

3. Vocoid sounds are centered. They are produced by an air stream that passes through the oral passage directly over the center of the tongue. They are in contrast with lateral sounds, in which the air stream is diverted around the edges of the tongue.

The Contoid Sounds, on the other hand, are sounds which lack any one of the three essential features of a vocoid sound.

1. Some contoids are non-oral. These include the sounds in which the air stream passes through the nasal, and not the oral passages. These include the set of nasals, [m], [n], [ñ], [ɳ], [ŋ].

2. Some contoids are not-frictionless. These include all sounds in which the air stream is either stopped, or causes notable friction. They include the stops:[p],[b],etc.,and the fricatives [s],[š],etc.

3. Some contoids are not centered. These include the lateral sounds, in which the air stream is diverted around the edges of the tongue, rather than passing over its center. Such is the sound [l],[r].

1

MUNDARI PHONETICS

Mundari Phonetics is the study of the sounds which occur in the Mundari language, independently of the way in which these sounds are organized. This includes a study of the number and type of vocoids that occur, the number and type of contoids that occur, and the particular features by which these sounds are identified, classified, and differentiated from each other. The results of such a study produce a phonetic work chart of all the sounds which occur in Mundari, from which, by grouping into sets, a determination of the true sound units of the Mundari language can be obtained.

Mundari phonetics is considered under these headings:
(a) The Vocoid system, which includes the study of all the vocoid sounds which occur in the language, together with their identifying and contrastive sound features. These sounds are oral,frictionless,central.
(b) The contoid system, which includes the study of all the contoid sounds which occur in the language, together with their identifying and contrastive features. These are deficient in some one of the three features of the vocoids,that is,they are non oral,not frictionless,or not central. Some of these sounds will only occur in certain restricted positions,but all sounds must be listed,and then grouped into sets.

The vowels and consonants of a specific language are these same vocoid and contoid sounds, as used in the structure of that language. The heart of a language is its vocoid system. The vocoid sounds act either singly or in combinations, as the nuclei of syllables in that language. Any vocoid which acts singly as a syllable nucleus, or which combines with some other vocoid as part of a syllable nucleus, is called a vowel. The contoid sounds, on the other hand, act as the margins of syllables, either as an onset, which opens the syllable, or a coda, which closes the syllable. In some languages a sound will simultaneously close the preceding syllable and open the next syllable. This is called an interlude. Vocoid sounds also, which act as onsets, codas, or as interludes, are listed among the consonants of the language. All of the contoids of the language are ipso facto consonants. Like the vowels, the consonants sometimes act singly, sometimes in groups called clusters.

The key to a clear distinction between consonants and vowels of a specific language, is the use to which the glides ar semi-vowels are put in this language. The glides are definitely vocoid in production but may act as either vowels or consonants, depepding upon the language. This sounds are written as /i/ and /u/ when they act as vowels, and are written as /y/ and /w/ when they act as consonants. The decision as to whether they are vowels or consonants depends upon the patterns of the language. Those sounds found in positions known from other forms to be consonantal are consonants; otherwise they are vowels.

1. THE VOCOID SOUNDS OF MUNDARI

A vocoid sound is a sound which is oral, frictionless and also centered. In a vocoid sound, the air stream passes through the oral cavity, passes through that cavity without noticeable turbulence or friction, and passes over the center of the tongue.Vocoid sounds are distinguished from each other by the height of the tongue, whether high,mid, or low, the positon of the tongue, whether forward,central, or back, and the position of the lips, whether rounded or unrounded.

The vocoids of Mundari are based upon five distinguishable simple vocoid sounds, which may be further modified by a particular set of features. The five essential vocoid sounds are the vowels of the Romance languages, [a], [e], [i], [o], [u]. These five vocoids are further modfied and marked with certain diacritics,distinguishing

(a) Long vowels, marked with the macron, for lenth: [a̅]

(b) Very short vowels, marked for shortness: [a̯]

(c) Nasalized vowels, marked with the circumflex [â]

(d) Glottalized vowels, marked with a check, [a']

The sound represented by the glottalized vowels is written more accurately with a glottal stop [ʔ], as [aʔa]. These are called the checked vowels of Mundari. The vowel is pronounced, checked in the glottal region, and then the pronuntiation of the vowel is allowed to continue. The glottal stop occurs,in Mundari,only in the combination VʔV.

1.A. THE UNMODIFIED VOCOIDS

The simple unmodified vocoids of Mundari are the five simple vowel sounds of the romance languages, namely, [i], [e], [a], [o], [u]. These five vowel sounds are distinguished from each other by the three characteristics of tongue height, tongue position, lip position.

(a) According to the height of the tongue, the vowels are classed as

1. High vocoids: [i] [u]
2. Mid Vocoids: [e] [o]
3. Low Vocoids: [a]

(b) According to the position of the tongue, the vowels are classed as

1. Front Vocoids, with the tongue far forward, [i]. [e]
2. Central Vocoids, with the tongue centered, [a]
3. Back Vocoids, with the tongue far back, [u], [o].

(c) According to the position of the lips, the vowels are classed as

1. Rounded, if the lips are rounded, [u], [o]
2. Unrounded, if the lips are flat, [i], [e], [a].

The third characteristic, that of lip rounding, although it is a descriptive phonetic feature, is not an essential distinguishing characteristic in a five vowel system. The five vowels are already adequately distinguished from each other by the first two features, which offer a 3 x 3 or 9 position matrix for distinguishing vowels. Of the 9 possible positions described, the vowels fill five positions.

The simple vocoids of Mundari are described as follows:

[i]	High front unrounded vocoid	[kili],	'clan'
[e]	Mid front unrounded vocoid	[coke],	'frog'
[a]	Low central unrounded vocoid	[haga],	'brother'
[o]	Mid back rounded vocoid	[boro],	'fear'
[u]	High back rounded vocoid	[kumu],	'dream'

Within a five vowel system, there will be a considerable range of variation possible with each vowel. Some points about this variation of sounds in the vowels should be noted.

(a) Even in word final position, the pure vowels of Mundari never have the glides associated with these five vowels in English; that is, the vowels are never pronounced as [iy], [ey], or as [ow], [uw]. As in the romance languages, the vowel is pronounced in a single position, without the accompanying glide.

(b) In open syllables, which end in a vowel, the vowel has its longest duration and consequently its purest sound. In closed syllables, which end with a consonant, the vowel is clipped short by that consonant,and may sound, to the English speaking person, like their short vowels, but this shortness in length is more comparable to the English time difference in such sets as 'beat',[biyt],'bead',[biyd],'bean',[biyn].

(c) In open non-final syllables, which are not followed by a stop, this shortening of the vowel is also evident. Before stops,however, the preceding open syllable sounds like a final syllable.

[i]	VOWEL CHARTS					
	-iC#	-iCi-	-iCa-	-iCu-	-iCC-	Tri-syll.
[-ip-]		ipil,			dipli,	
[-it-]				itu,		
[-iṭ-]	piṭ,					
[-ik-]		ikir,	rika,	siku,		ikurum
[-ib-]		sibil,				
[-id-]	bid,	idi,	nida,	idu,		
[-iḍ-]						
[-ig-]	bing,					
[-ic-]			bica,			
[-ij-]			lija',	hiju',		
[-ih-]	-----	-----	-----	-----	-----	-----
[-is-]		hisi,		isu,		
[-im-]	sim,	imin,			imta,	iminang,
[-in-]				inung,	nindir,	dinaki,
[-ir-]	bir,	birid,			sirma,	iralia,
[-il-]		kili,	jilad,	jilu,	bilka,	
[-iw-]			kiwa,			
[-iṇ-]		siṇi,				
[-iṛ-]		piṛi,				
[-iy-]	-----	-----	-----	-----	-----	-----
[-ia-]			baria,	turia,		upunia,
[-iu-]	biur,		ciula,	giu'		

[-ei-]	(None)					
[-ea-]	ea,	konea,	moɲea,	area,	gelea,	meang,
[-eo-]	deoɲa,					
[-eu-]	heu,					
[-ep-]	(None)					
[-et-]	eton,	cetan,	ete'	seta,	etkan,	
[-eṭ-]	keṭe',	eṭa',	eṭe',			
[-ek-]	leka,	sekṛa,				
[-eb-]	teba',	lebe',	ḍebel,			
[-ed-]	ked,	led,	mered,	hered,	med,	sered,
[-eḍ-]	(None)					
[-eng]	enga,	sengel,	denga,	lenga,	renge,	engel,
[-ec-]	keco',	keca',				
[-ej-]	mej,	tej,				
[-eh-]	(None)					
[-es-]	bes,	esel,	eskar,	neskan,		
[-el-]	lel,	berel,	gelea,	esel,	ḍebel,	
[-er-]	her,	pere',	merom,	leser,	erang,	berel,
[-em-]	heṛem,					
[-en-]	ken,	len,	men,	hende,	soben,	gena,
[-eṛ-]	heṛem,	keṛa,	peṛe',			
[-eɲ-]	seɲa,	ceɲe,	ceɲṭa,			
[-ey-]	(None)					
[-ew-]	hewa,	sewa,				

[-ái-]	aiar,	taiom,	aiub,	aing,	bairi,	bai,
[-ae-]	(None)	maiom,	aium,	tai,	lai,	hai,
[-ao-]	janao,	hobao,				
[-au-]	cauli,	sauri,	parau,	auri,	au,	
[-ap-]	apia,	apir,	ape,	japa',	rapud,	apu,
[-at-]	atom,	ate,	atkar,	hatom,	lagating,	pati,
[-aṭ-]	kaṭa,					
[-ak-]	ako,	aking,	hake,	akad,	akan,	sakam.
[-ab-]	aben,	abung,	abu,	rabal,	sab,	caba,
[-ad-]	ad,	jilad,	kadal,	lad,	jad,	tad,
[-aḍ-]	(None)	marang,	meang,	rabang,	jang,	maiang,
[-ag-]	laga,	lagating,	haga,	iminang,	galang,	sanang,
[-ac-]	bacom,					
[-aj-]	baja,					
[-ah-]	paham,	baha,	pahan,			
[-as-]	basila,	hasa,	rasika,	maskal,		
[-al-]	kadal,	alo-	aling,	alang,	ale,	dal
[-ar-]	sar,	parom,	argu,	marang,	parkom,	eskar,
[-am-]	paham,	am,	[illegible],	samrom,	hambal,	kudlam,
[-an-]	janao,	ranu,	sandi,	candoa,	manda,	mandi,
[-aṛ-]	dulaṛ,	haṛad,				
[-aṇ-]	pahaṇ	maṇa,	gaṇḍi,	gaṇḍu,		
[-ay-]	(None)...	cf.=ai-				
[-aw-]	(None)...	cf.-au-				

[-oi-]	(None)	cf.-oy-				
[-oe-]	goe',					
[-θa-]	candoa,	joa,	joar,	roa,	soan,	
[-ou-]	(None)					
[-op-]	topa,					
[-ot-]	koto,	potom,	otong,	ote,		
[-ọt-]	(None)					
[-ok-]	coke,	roko,	hoka,	oko,		
[-ob-]	soben,	hobao,	dobol,	lobo',		
[-od-]	losod,	moyod,				
[-ọd-]	(None)					
[-ong]	ong,	loyong,	holong,	molong,	gonong,	otong,
[-oc-]	oco,	oco',	moca,	koca,		
[-oj-]	jojo,	gojo,	soj',			
[-oh-]	(None)					
[-os-]	gosọ,	losod,	hos'ro			
[-ol-]	ol,	lolo,	dola,	bolo,	dobol,	kolom,
[-or-]	honor,	ore,	horo,	hora,	boro,	
[-om-]	gomke,	om,	jom,	jarom,	atom,	merom,...
[-on-]	konea,	jonom,	hon,		bonga,	donga,
[-ọr-]	ọro',	ọra',	horọ,	korọa,	horọ'mo,	
[-θn-]	onọa,	gonọa,	deonọa,	ondọo,	dondọo,	
[-oy-]	hoyo,	doya,	loyong,	oyar,	moyod,	soya,
[-ow-]	(None)					

[-ui-]	(None)	cf.-uy-			(illegible)	
[-ue-]						
[-ua-]	rua,	ruar,	bayua,			
[-uo-]	(None)					
[-up-]	upunia,	gupi,	kupul,			
[-ut-]	sutam,	lutur,	nutum,	-uter,		
[-uṭ-]	guṭi,					
[-uk-]	suku,	suk'ri,	duku,	sukul,		
[-ub-]	dub,	aiub,	ub,	nuba',		
[-ud-]	kuda,	sud,	rapud,	surud,	kud'lam,	
[-uḍ-]						
[-ung]	bulung,	inung,	abung,	bugin,		
[-uc-]						
[-uj-]						
[-uh-]						
[-us-]	susun,					
[-ul-]	bul	sul,	dulaṛ	bulung,	kula,	umbul,
[-ur-]	turia,	durum,	uru',	urung,	-urum,	biur,
[-um-]	umbul,	sunum,	kumu,	buru,	surud,	ajum,
[-un-]	upunia,	munu,	pundi,	itun,	gungud,	tundu,
[-uṛ-]	buṛia,	kuṛam,	uṛi,	kuṛi,	kuṛil,	
[-uy-]	tuyu,					
[-uw-]	(None)					
[-uṇ-]	duṇi,					

1.B. THE MODIFIED VOCOIDS

The modified vocoids of Mundari include the five simple vowels as they are affected by the processes of lengthening, shortening, glottalization and nasalization. Here we consider the meaning of the various diacritics used in the Encyclopedia Mundarica of Hoffman, and their phonetic and phonemic value. In some cases a system of marking more consistent with modern phonetics and phonemics is proposed. In order we consider the checked vowels, the very long vowels, the very short vowels, and the nasalized vowels.

1. The checked vowels of Mundari are glottalized vowels. Although written in the Encyclopedia as a vowel with a check [a'], their phonetic value is that of a glottalized vowel,[a?a], found in such words as:

ti',	[ti?i],	'hand'
le',	[le?e],	'tongue'
da',	[da?a],	'water'
lo',	[lo?o],	'with'
bu',	[bu?u],	'to bark'

No matter how these vowels are interpreted, the following facts of distribution must be kept in mind.

(a) The glottal stop only occurs in the environment V?V, where the vowel preceding the stop, and the vowel following the stop, are the same. There is no occurence of the glottal stop in the environment V1-?-V2.

(b) The glottal stop only occurs in morpheme final open positions. These morphemes may be monsyllabic or disyllabic, and occur in syllables of the general form CV?V, or V?V. They are never followed by a consonant. In words, however, these morphemes with glottalized vowels may occur in word medial positions, although the syllable is still an open one.

da?a, 'water' -ta?a,'near' -te, 'to'

da?ata?ate, 'to near the water' (da'ta'te)

(c) Words ending in a glottalized vowel have an allomorph ending in -g when these words are used as verb stems, and take the passive suffix -o' This allomorph is obligatory with monosyllabics, but with disyllabic stems both the original stem and the allomorph in -g occur.

re?e,'rob' + o?o','passive' = reg-o?o,'be robbed'

pere?e,'fill' + o?o ,'passive' = pereg-o?o, pereo?o,

The second form illustrates a further rule, namely:

(d) Two successive glottalized vowels do not occur without an intervening consonant. In such a case, the first vowel is shortened to a simple vowel, and the second remains as a glottalized vowel.

pere?e + o?θ = pereo?o, not*pere?e-o?o

(e) The tense markers -tad and -jad have allomorphs ta?a and ja?a before the pronoun suffixes in -i, namely, -ing,'I' and -i?i, 'him/her'

lelta?aiñ̃a, 'S saw me,once and for all' (also,-jad,akad)

lelta?aia, 'S saw him(her) once and for all'(also -jad,-akad)

The tense signs -led and -ked have allomorphs -ke?e and -le?e before the pronouns in -i, but the glottalization is shifted to the -i pronoun.

lel + ked + ing + a = lelke'ina = lelki'na [lel-ki?ina]

lel + ked + i?i + a = lelke'i'a = lelki'a [lel-ki?ia]

The above facts of distribution lead to one of two conclusions. Either the glottal stop is a consonant allophone, or it is a vowel feature. If the glottal stop be considered a consonant allophone, it is most likely to be interpreted as a final allophone of the consonant /g/. This solution is suggested by the change, in the passive, of stems in -e' which have allomorphs in -g, such as the verb re', 'rob', which forms its passive from the stem reg-, resulting in the form reg-o'. Elsewhere,as in the tense markers, the glottal alternates with -d. If the glottal stop be considered a vowel feature, distinguishing glottalized vowels from simple vowels, just as other languages tell short vowels from long vowels by the feature of length, then the above alternations must be considered morpho-phonemic, rather than phonemic; the vowel plus -d and the glottalized vowels are morphophonemic pairs in the tense markers, and the vowel plus -g is in a similar set with glottalized vowels in other morphemes. This explanation is more in accord with the optional forms allowable in passive disyllabic forms.

The solution adopted here is that the glottal stop is not a separate consonant, but a vowel feature, similar to length, which sets off the five glottalized vowels,[i?i],[e?e],[a?a],[o?o], and [u?u] from the five simple vowels, [i], [e], [a], [o], and [u] in a ten vowel system. This system is further diversified by the use of glides, which form the diphthongs [ai] and [au].

GLOTTALIZED VOWELS Listed with Preceding Consonants					
	[i?i]	[e?e]	[a?a]	[o?o]	[u?u]
[-p-]			japa?a,		
[-t-]	ti?i,	[illegible],	-ta?a,		
[-ṭ-]		eṭe?e	eṭa?a,		
[-k-]					ku?u,
[-b-]		lebe?e,	nuba?a,	bo?o,	bu?u,
[-d-]		de?e,	da?a,		
[-ḍ-]					
[-g-]		ge?e,		go?o,	
[-c-]				co?o	
[-j-]			ja?a	jo?o	hiju?u,
[-h-]		he?e,		ho?o,	
[-s-]				goso?o	
[-l-]		le?e,	la?a	lo?o,	
[-r-]		re?e,	ra?a,		uru?u,
[-m-]			ma?a,		
[-n-]	ni?i,	ne?e,	na?a	no?o,	
[-ṛ-]			oṛa?a,	oṛo?o,	
[-ṇ-]					
[-y-]		ae?e			giu?u,
[-w-]		goe?e,			
-Ø-	-i?i,	[illegible],	-a?a	-o?o	-----

2. The Very Long Vowels of Mundari are simple vowels marked with the length symbol, a macron. Length does not seem to be a vowel feature which sets off a set of long vowels against a set of simple vowels. It is rather a symbol for the occurence of geminate vowels, that is, two vowels of exactly the same quality occuring without the glottal catch.

(a) Length is marked when an intervocalic -h- is deleted in some dialects, leaving two vowels of the same type together. These two vowels are then written as a single vowel, marked with the macron:

paham, 'remember' =*pa-am, = pām, 'remember'

pahan, 'sacrificer'; =*pa-an' = pan(a), 'sacrificer'

(b) Length is marked when vowel initial verb stems are reduplicated; that this process is a reduplication is evident from consonant stems.

dal, 'strike' da-dal, 'strike repeatedly'

aium, 'hear' = *a-aium = āium, 'hear repeatedly'

(c) Length is marked in morpheme final open syllables, especially in monosyllabic words, but is not in contrast with a simple vowel.

hē, 'yes' bā, 'flower'

In these environments, a simple or long vowel is often found in contrast with a glottalized vowel, but not in contrast with each other.

(d) The elision of two vowels is sometimes written as a geminate vowel, sometimes written as a long vowel with a macron., for example

Ranchi-te-e senakana, 'he went to Ranchi'

written as -tee, or as -tē

With these examples, it would seem length is not phonemic.

3. The very short vowels of Mundari are not vowels at all. They are either vowel glides or consonantal releases. The distribution of these vowels helps to indicate their phonetic function.

(a) Intervocalic short vowels, in the environment V - $\breve{V}$ - V, are simultaneously an off-glide of the first vowel and on-glide of the second. The short vowels [ĭ] and [ĕ] are transcribed as [y], and the short vowels [ŏ] and [ŭ] are transcribed as [w]. The short vowel [ă] does not occur in an intervocalic environment.

tayom,	[taĕom],	'later'	kiwa,	[kiŭa],	'chin'
doya,	[doĕa],	'back'	tuyu,	[tuĭu],	'coyote'
nawa,	[naŭa],	'new'	hewa,	[hĕŏa],	'accustom'

(b) Post-vocalic short vowels, in the environment V - $\breve{V}$ - C/# , are off-glides of the preceding vowel; if this preceding vowel is [a], the two elements form a close-knit sequence or diphthong, [ai] or [au].

lai,	[laĭ],	'stomach'	bai,	[baĭ],	'make'
bairi,	[baĭri],	'enemy'	paisa,	[paĕsa],	'money'
parau,	[paraŏ],	'read'	bancau,	[bancaŏ],	'save'
cauli,	[caŭli],	'rice'	sauri,	[saŭri],	'thatch'

The fact that the only combinations found in this environment are the pairs [ai] and [au] suggests that these are the only two diphthongs in Mundari. They are also the only two true diphthongs in Hindi, a system of sound which has had its influence upon the Mundari language.

(c) Pre-vocalic short vowels, in the environment #/C - $\breve{V}$ - V, are on-glides to the following vowel, as in etwar, [etŏar], 'sunday'.

(d) Interconsonantal short vowels, in the environment C - V̆ - C(#), are all consonantal releases. These occur in final position, or in medial position followed by a consonant. They occur as allophones of the consonants [p], [t], [ṭ], [k], [j], [s], [ṛ], [ṇ]. The release is a short vowel, homorganic to the vowel preceding the consonant.

dip'li, [dipi̯li],'time'	mej're,[mejĕre], 'on the table'
et'kan, [etĕkan],'evil'	bes'ge,[besĕge], 'good,indded'
pit', [piti̯],'baxaar'	hor'mo,[horŏmo], 'body'
kak'la, [kakă̯la],'shout'	bakaṇ',(bakaṇă̯], 'talk'

There is a variation of sound in these combinations from no release at all to a voiceless release similar to voiceless vowels,to voiced release.

dipli,	[dipli],	[dipIli],	[dipi̯li], 'time'
etkan,	[etkan],	[etEkan],	[etĕkan], 'evil'

This use of consonantal releases leads to the conclusion that every consonant is given its full value in Mundari, especially by those speakers unacquainted with the clusters of other languages, and that no consonant is pronounced as an unreleased consonant. Either the consonant is followed by a vowel,and released into that vowel, or it is followed by a consonant(or is word final) and is pronounced with a homorganic release. This excludes the voiced stops,that have a postnazalized release, and the continuants, [m],[n],[l],[r], which need no release.

Release is an automatic phonetic variant and need not be marked. The glides however,are written as [y] and [w] except when they occur in the diphthong combinations [ai] and [au].

THE DIPHTHONGS [ai] and [au]						
[ai#]	tai,	bai,	lai,	sai,	hai	(High)
[aiC]	bai.ri,	pai.sa,				(High)
[aiV]	ayub,	ayum,				(High)
	ayar,	saya,	mayang,	daya,	hayam	(Neutral)
	bayar,	sayad,	nayal,			(Neutral)
	mayom,	tayom,				(Low)
[au#]	au,	bancau,	parau,			(High)
[auC]	au.ri,	sau.ri,	cau.li,			(High)
[auV]	nawa,					(Neutral)
THE OFF-GLIDES [y] and [w]						
[-uy-]	tuyu,			No [-iy-]		(High)
[-oy-]	loyang,	oyar,	oyang,	No [-ey-]		(Low)
	moyod,	doya,	soya,			(Low)
	hoyo,					(Low)
[-iw-]	kiwa,			No [-uw-]		(High)
[-ew-]	hewa,	sewa,		No [-ow-]		(Low)
POST-CONSONANTAL ON-GLIDE [w]						
[-CyV]	(None)					----
[-CwV]	et.war,					(Low)

4. The nasalized vowels of Mundari are generally a simple phonetic assimilation to a co-occuring nasal phoneme, and need not be marked. Most of those currently marked in the orthography can be eliminated by the establishment of a retroflex nasal phoneme, written [ṇ]. A few other marginal nasals occur,however, mostly in particular loan words.

(a) The retroflex nasal sound [ṇ]is found in the orthography as[-V̂ṛV̂-]. that is, the sound is interpreted as a retroflex [ṛ], with the vowels preceding and following this sound nasalized. The essential qualities of this combined sound, its distinguishing features, are retroflexion and nasalization. Presumably, the nasalization begins with the first vowel,and proceeds uninterruptedly through the retroflex to the second vowel. The retroflexion is produced by the curling of the tongue back against the palate, breaking the oral air stream as it flicks against the palate, while the nasal air stream is uninterrupted. These features of retroflexion and nasalization are best recounted in a single sound symbol as a retroflex nasal phoneme [ṇ]. In such a sound alee, the nasal stream is uninterrupted, and the retroflex sound produced. In hearing this sound, it seems to be rather a retroflexed nasal, rather than a nasalized retroflex,although the difference is slight. These retroflex nasals occur in medial and final positions only.

(b) A few scattered marginals exists which seem to be true nasalized vowels,but only in scattered loan words, suhh as the following:

muî',[mui?i], 'anta'

hâs, [has], 'goose' (Sanskrit,used as a name of a kili,qv)

THE RETROFLEX NASAL [ɳ]					
[-iɳ-]	siɳi,	riɳi,			
[-eɳ-]	seɳa,	ceɳe,	reɳe,		
[-aɳ-]	daɳa,	saɳa,	haɳa,	maɳa,	maɳi,
	araɳa,	maraɳa,	jiaɳa,	osaɳa,	baɳia,
[-oɳ-]	oɳa,	goɳa,	moɳa,		
	moɳea,	deoɳa,			
[-uɳ-]	duɳi,				
[-ɳ#]	pahaɳ,	bakaɳ,	muaɳ,		

SUMMARY: The vocoid sounds of Mundari

The vocoid sounds of Mundari are the five simple vowels, modified or unmodified. The unmodified vowels are [i], [e], [a], [o],[u]. These vowels are further modified and marked by diacritics.

(a) The checked vowels are the glottalized vowels. This glottal stop is not a consonant nor the allophone of any consonant, but a vowel feature which sets up five more vowels [i?i],[e?e],[a?a],[o?o],[u?u[.

(b) The very long vowels are to be considered as occurences of geminate vowels,and may be written either as geminates,or long vowels. They are not in direct contrast with either simple or glottalized vowels.

(c) The very short vowels are glides, some of which [ai] and [au] are true diphthongs. The others are off-glides -oy-,-uy-, and -iw-,-ew-.

(d) Nasalized vowels are marginals;except near [ɳ] are very rare.

2. THE CONTOID SOUNDS OF MUNDARI

A contoid sound is a sound which is not a vocoid. The contoids are sounds which are either not oral, or not frictionless, or are not centered. The classes of contoids therefore include all of the nasal sounds, all the stopped and fricative sounds, and the lateral sounds. Contoids are distinguished from each other by three essential features:
(a) Voicing: Some sounds are accompanied by vibration of the vocal cords.
(b) Place of Articulation: Sounds are formed in different oral areas.
(c) Manner of Articulation: Sounds are formed in different ways.
According to the manner of articulation, contoids are classed thus:

1. Either the passage of air is blocked or it is not;
   - Sounds in which the air is completely blocked are.... Obstruents
     - Some are released without friction — Stops
     - Some are released with friction — Affricates
   - Sounds in which the air is partially blocked are..... Fricatives
   - Sounds in which the air is not blocked are..... Continuants

2. Of the continuant sounds, some are oral, some nasal;
   - Sounds unblocked in the oral passages are..... Oral Continuants
     - Some are released around the tongue — Laterals
     - Some are distorted by the tongue — Resonants
     - Some pass freely over the tongue (Vocoids) — Glides
   - Sounds unblocked in the nasal passages are..... Nasal Continuants

2.A. THE OBSTRUENT CONTOIDS

The obstruent contoids of Mundari are those non-vocoid sounds in which the passage of air is completely blocked in the oral passage, without being diverted into the nasal passages. These oral obstruents are either stops, which are released without friction, or are called affricates, which are stops followed by a friction release. Already distinguished from other contoids by their manner of articulation, the obstruents are distinguished from each other by five different places of articulation, and by the voiced-voiceless contrast.

1. Place of Articulation, in Mundari, is approximately according to the same pattern as the sounds of Hindi and Sanskrit. The five places of articulation are labial, dental, retroflex, palatal, and velar.
(a) Labial sounds are formed by the upper and lower lips acting as articulators. Labial oral obstruents, both voiced and voiceless,occur, as [p] and [b]. These sounds are complete oral stops,not fricative.
(b) Dental Sounds are formed by the tip of the tongue against the teeth, and are more accurately described as apico-dental. They include the voiceless dental [t] and the voiced dental [d]. The sound is more forward than the similar alveolar sounds of English, in which the tongue touches the alveolar gum ridge rather than the teeth.
(c) Retroflex sounds are formed by the tip of the tongue curled back against the palate. They may be described as apico-palatal sounds,or

more accurately, as apico-alveopalatal, with the tongue reaching back towards the palate, but reaching the region between the alveolar gum ridge and the palate,known as the alveopalatal region. Although this retroflexion is more truly a manner of articulation than a place of articulation, it has been found convenient to list these sounds in a position between the dental and the palatal sounds. They are easily distinguished by the peculiar "r"-like quality produced by the curling of the tongue upwards and backwards, and are characteristic of many of the Indian languages. They are also called domals or cerebrals.

(d) Palatal Sounds are formed by the blade of the tongue set against the alveopalatal region. The term palatal is used, rather than the more accurate alveopalatal, because there are no contrasting palatal sounds. Both the voiceless [č] and the voiced [ǰ] occur. Although these sounds are not stops, but affricates, they are listed together with the stops in the general class of obstruents, since their place of articulation is a sufficient distinguishing feature. As affricates, they are compound sounds, with [č] = [tš] and [ǰ] = [dž], but these combinations form a tight-knit sequence,and act like a single sound.

(e) Velar Sounds are formed by the back of the tongue articulating the velar region, or region of the soft palate. The voiceless [k] and the voiced [g] both occur. They are in contrast with palatal sounds.

OBSTRUENTS	Labial	Dental	Retroflex	Palatal	Velar
Voiceless:	[p]	[t]	[ṭ]	[c]	[k]
Voiced:	[b]	[d]	[ḍ]	[ɟ]	[g]

2. Voicing, in Mundari, separates the set of stops into two classes, the voiced stops, in which the vocal cords vibrate during the sound production, and the voiceless sounds,in which the cords do not vibrate..

(a) The voiceless stops of Mundari are [p], [t], [ṭ], [c], [k]. These stops are more tense than the voiced stops, and are ordinarily accompanied by a greater degree of aspiration. They are characterized also by a different kind of release, when they occur in either final position, or in medial position followed immediately by a consonant. A voiceless stop is generally released with a very short vowel sound which is homorganic to the vowel immediately preceding the consonant.

[p]	dip'li, [dipIli], 'time'	No final occurence
[t]	et'kan, [etEkan], 'evil'	No final occurence
[ṭ]	piṭ-re, [pitIre],'in the bazaar'	piṭ, [piṭI],'bazaar'
[k]	kak'la, [kakAla],'shout'	No final occurence

The affricate [c] however does not occur in these environments. It occurs neither finally, nor medially before another consonant.

(b) The Voiced stops of Mundari are [b], [d], [ḍ], [j], and [g]. These stops are more lax than the voiceless stops, and are ordinarily accompanied by less aspiration. They are characterized by a special kind of release, when they occur in final position or in medial position immediately followed by another consonant. This release is a post-nasalization; the stop is produced, and then the air is released through the nasal passage, as an echo of the nasal homorganic to this stop. The post-nasalized release occurs mainly in final position.

The voiced bilabial stop [b] has a homorganic nasal release when it occurs in morpheme final position. In discourse, this release remains when it is word final, is modified to a simple release when followed by a consonant-initial suffix, and loses the release before a vowel. The three variants of the morpheme final nasalized stop [b^m] are:

dub', [dub^m], 'sit'

dub'tana, [dub'tana], 'S is sitting'

dubakana, [dubakana], 'S sat down'

The voiced dental stop [d] has a homorganic nasal release when it occurs in morpheme final position. In discourse, this release varies in the same way as the bilabial stop. The three variants of [d^n] are:

rapud', [$rapud^n$], 'break'

rapud'tana, [rapud'tana], 'S is breaking it'

rapudakana, [rapudakana], 'S has broken it'

The voiced retroflex stop [ɖ] occurs neither finally, nor medially followed by a consonant. Therefore it never occurs with a release.

The voiced velar stop [g] does not occur either finally, or medially before a consonant. Therefore it never occurs with a release. However, A final [g] with a homorganic nasal release would be [$g^ŋ$] phonetically. Although such a sound does not occur, the sound [ŋ] does occur, and is in complementary distribution with the [g] sound. The [g] sound only occurs initially and medially, the [ŋ] sound only occurs finally. Final [ŋ] remains invariant no matter what suffixes may follow it.

inuŋ, 'play'; inuŋ-tana, 'is playing' inuŋakana, 'has played'

The voiced palatal affricate [j] does not occur finally or medial before a consonant, except in certain loan words from Hindi,such as:

mej, 'table' soj,'straight' tej,'sharp'

These borrowed words have a non-nasal release, usually voiceless, when the [j] is in final position, or medially before a consonant.

mej, [mej'], 'table mej-re,[mej-re], 'on the table'

When however, the palatal affricate, even though morpheme final, occurs medially in words before a vowel,there is no release.

tej, [tej'];'sharp' tejakan.[tejakan],'sharpened'

In conclusion, the obstruent sounds in Mundari seem to demand some kind or release when they occur in final position, or in medial position before another consonant. Stops do not cluster smoothly with a following consonant,rather, the stop is fully pronounced with its own release before the sounding of the second consonant. The stops and affricates form different groups in manner of release. For stops, the voicless varieties have non-nasal releases, and the voiced stops have nasal releases, or no release at all. For affricates, the voiceless affricate has no release,and the voiced a non-nasal release.

STOPS	Labial	Dental	Retroflex	Velar	AFFRICATES(Palatal)
vl.	[p]	[t]	[ṭ]	[k]	[c]
	[p']	[t']	[ṭ']	[k']	(None)
vd.	[b]	[d]	[ḍ]	[g]	[j]
	[b^m]	[d^n]	(None)	[ŋ]	[j']

The fricatives of Mundari are those sounds in which the passage of air is not completely blocked in the oral cavity, but is partially blocked. Mundari has only one true fricative, a grooved dental sibilant [s], but the central vocoid glide [h] is sometimes listed as a glottal fricative.

The voiceless dental sibilant [s] is a voiceless fricative sound formed in the dental or alveolar region, depending upon the following vowel. It occurs initially and medially before a vowel, but occurences in final position, or in medial position before a consonant, are rare are seem to be loan words, such as bes', 'good', from Sadri. When these words with final [s] occur, the sound has a release similar to that of the affricate [j], which also occurs finally only in loan words.

sadom, [sadom], 'horse' bes', [bes'], 'good'

hasu, [hasu], 'pain' bes'ge, [bes'ge], 'good indeed'

The glottal fricative [h] is phonetically a mid central vocoid glide, but always acts as a consonant. It occurs initially, and medially before a vowel, but never occurs finally or medially before a consonant. When [h] occurs intervocalically between like vowels, it is deleted in some dialects, with a resulting geminate (or long) vowel.

horo, [horo], 'man'

paham [paham, paam], 'remember'

The manner of release suggests a parallelism with the affricates:

	Affricates			Fricatives	
Initial	[c]	[j]	Initial	[h]	[s]
Final	---	[j']	Final	---	[s']

2.B. THE CONTINUANT CONTOIDS

The continuant contoids of Mundari are those non-vocoid sounds in which the passage of air is left unobstructed through either the oral or nasal cavity. Continuants are either oral or nasal. The nasal continuants are sounds in which the air, after being blocked in the oral cavity in any of the five places of articulation, is diverted through the nasal passages, producing the nasals [m],[n],[n̪],[ñ],[ŋ]. The oral continuants are sounds in which the air passes through the oral cavity without being either stopped, or noticeably obstructed. They include laterals [l], resonants [r],[ɾ̪]and the glides [w],[y]. The glides are vocoid in production,and are included here in order that the list of continuant sounds might be complete. All are voiced sounds.

1. Nasal Continuants are the sounds produced by the diversion of air from one of five places or articulation in the oral passage, to the nasal passage. Nasals may be labial, dental,retroflex,palatal,or velar. All of the nasal sounds of Mundari are voiced sounds.

(a) Labial Nasal Continuant [m] is produced by the blockage of air at the lips, from which position it is diverted through the nasal passage. The [m] sound is a true continuant, occurs in all possible positions, and forms a smooth cluster with any following consonant.

merom, 'goat' gomke, 'master'

gama, 'rain' catom, 'umbrella'

(b) Dental Nasal Continuant [n] is producing by the blocking of the air in the dental region by the tip of the tongue, from whence the air is diverted through the nasal passages. The dental [n] occurs in all positions. It forms a smooth cluster with following consonants, but is assimilated to the following consonant within the morpheme. Across morpheme boundaries,however, the [n] is not assimilated.

nida, 'night' cetan, 'above'

jonom, 'birth' hende, 'black'

The assimilation of [n] within the morpheme is illustrated as follows:

With retroflex sounds, ḍonḍo,[ḍoṇḍo], 'stupid'

With palatal sounds, punji,[puñji], 'wealth'

With velar sounds, panka,[paŋka], 'fan'

This assimilation,however, is not carried out across morpheme bounddary

sen-jana,[senjana],'S went' not [señjana]

(c) Retroflex Nasal Continuant [ṇ] is produced by the blocking of the air with the tongue in retroflex position, from where it is diverted through the nasal passages. The retroflex [ṇ] never occurs initially, but may occur medially before a vowel, finally, and medially before a consonant. When in final position, or medial position before a consonant the [ṇ] has a release similar to the release of the voiceless stops[ṇ']

Never Initial pahaṇ, [pahaṇ'],'sacrificer'

cene, 'bird' pahaṇ-ta'te,[pahaṇ'ta'te], to the S'

The retroflex [ṇ] is morpheme final,and occurs with release in a cluster whereas [n] before a retroflex sound,is assimilated into the cluster.

(d) Palatal Nasal Continuant [ñ] is produced by the blocking of the air stream in the alveopalatal region by the blade of the tongue, from where it is diverted through the nasal passages. This sound is rare in Mundari. Aside from the cases of the assimilation of [n] to palatal sounds mentioned above, the palatal [ñ] occurs only as a variant of the [ŋ] sound in the morpheme, aing,'I',when it is followed by a vowel:

aing, [aiŋ], 'I'

ainga',[aiña?a],'mine'

(e) Velar Nasal Continuant [ŋ] is produced by the blocking of the air stream in the velar region by the back of the tongue, from where it is diverted through the nasal passages. Aside from the cases of the assimilation of the dental [n] to velar sounds, the [ŋ] sound occurs only in morpheme final position, where its occurence is very frequent. Since the voiced stops have nasalized final variants, it is possible that the [ŋ] sound is the final variant of the sound [g],the velar stop. When followed by a suffix, the final [ŋ] sound remains unchanged.

Never Initial	inung, [inuŋ], 'play'
Never Medial	inung-tana,[inuŋtana],'S is playing'

2. Oral Continuants are the sounds produced by the free passage of the air stream through the oral cavity. They are either vocoid glides, or oral sounds in which the air stream is diverted, such as the laterals [l] and the resonants [r] and [ṛ]. The glides are the vocoids [y],[w]. The five oral continuants are described as follows:

(a) The lateral continuant [l] is an oral continuant in which the air is diverted around the tongue. The lateral is articulated by the tip of the tongue in the dental position, with the air diverted around it. A minor variant called the velarized or dark [ɫ] oocurs whenever the [l] is in final position, or in medial position followed by a consonant.

latar,[latar],'below' bilka,[bilka],'mercy'

jilu,[jilu],'meat' rabal,[rabaɫ],'easy'

(b) The dental resonant [r] is an oral continuant in which the air is contoured by the cup like surface of the tongue. The [r] may be either a vocoid glide, if the tip of the tongue approaches, without touching, the upper edge of the tteth. Or if may be flicked against the dental surface as a flap[ɾ], or flicked repeatedly against it as a trill[r̃]. The [r] is a high central glide,with a cuplike tongue contour, as opposed to the [h],a mid central glide with no special tongue contour. In Mundari,the flapped [ɾ] occurs most often in intervocalic position.

rabal, [rabal],'easy' barca,[barca],'spear'

merom, [meɾom],'goat' latar,[latar],'below'

(c) The retroflex resonant [ɾ] is an oral continuant in which the air is contoured by the cupped surface of the tongue. In the retroflex [ɾ] the tongue is curled upward and backward to the alveopalatal region. As with the dental [r],the retroflex [ɾ] may be a glide,flap or trill. This sound never occurs initially. In final occurence, or medially before a vowel, it has a release similar to that of the voiceless stops, as a homorganic short vowel, or a simple breath release.

[ṛ] Never Initial — hor'mo,[hoṛOmo],'body'

horo,[hoṛo],'man' — dular',[dulaṛA],'love'

The dental [r] is most frequently a simple glide. However, it used the flap as a variant, particularly in the intervocalic position. But the retroflex [ṛ] is most frequently a flap, very rarely a glide, and uses the trill as a free variant in all positions.

(d) The High Front Glide [y] is a vocoid glide. Although vocoid in its production, it often acts as a consonant and is classed with the oral continuants. In combination with the vowel [a], the glide acts as a close knit off-glide, and may be classed as a diphthong,[aɏ]. This diphthong occurs finally, and medially before consonants. Elsewhere, the [y] is an intervocalic interlude which is simultaneously the off-glide of the preceding vowel, and an on-glide to the following vowel. Except in [aɏ], this glide never occurs in final position, or in medial position followed by a consonant. Furthermore, in its consonantal occurences, the oral continuant [y] is never used initially.

hoyo,[hoɏo], 'wind' — -oɏ#, -oɏC-, no occurence

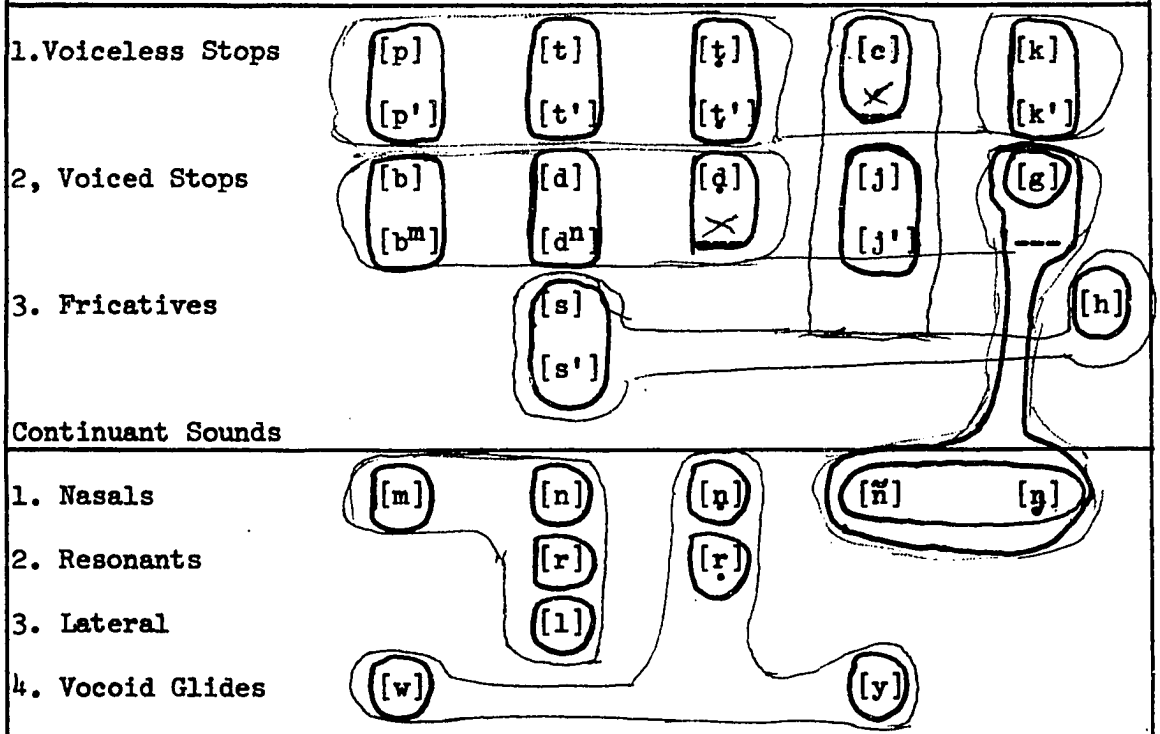
tuyu,[tuɏu], 'coyote' — -uɏ#, -uɏC-. no occurence

(e) The High Back Glide [w] is a vocoid glide. Although vocoid in production, it is classed,like [y], with the consonant oral continuants. The back glide likewise forms a diphthong [aŭ], elsewhere it occurs as an intervocalic interlude, for the front vowels [i] and [e].

kiwa,[kiŭa],'chin' — hewa,[heŭa],'accustom'

The [w] occurs as an on-glide;in loan words such as et'war,'sunday'

WORK CHART: THE CONTOID SOUNDS



CONSONANT GROUPS

Obstruant Sounds				
1.Stops: Voiceless Stops	/p/	/t/	/ʈ/	/k/
Voiced Stops	/b/	/d/	/ɖ/	/g/
2. Fricatives/Affricates: (Non-final obstruents)	/c/	/ɟ/	/h/	/s/
Continuant Sounds				
1. Simple continuants	/m/	/n/	/r/	/l/
2. Non-initial continuants:	/w/	/y/	/ɳ/	/ɾ/

2

MUNDARI PHONEMICS

Mundari Phonemics is the study of the way in which the sounds of Mundari are organized in this specific language. This includes a study of the vowel system and the consonant system. Each of these units is a significant part of the language, and is capable of changing the message carried by the sound signal. The results of such a study are shown in a phonemic chart, with a complete list of the Mundari phonemes, together with a statement of the distribution of the principal allophones of each of these phonemes.

Mundari Phonemics is considered under the following headings:
(a) The Vowel System of Mundari, which includes a list of the vowel phonemes of Mundari, the distinctive features which identify the units, and the principal allophones of each of the vowel phonemes.
(b) The Consonant System of Mundari, which includes a list of the consonant phonemes, the distinctive features by which these consonant units are identified and distinguished from each other, and the distribution of the principal allophones of the consonant phonemes.
Included under the distinctive identifying-contrastive features, will be given samples of the minimal pairs and other proofs which show that the phonemes are truly units capable of changing the message.

1. THE VOWEL SYSTEM OF MUNDARI

The Mundari Vowel System consists of 12 vowel phonemes. These are the five simple vowels, [i], [e], [a], [o], [u], the glottalized vowels [i?i], [e?e], [a?a], [o?o], [u?u], and the diphthongs [ai], [au]. Each of these phonemes may act as a syllable nucleus, and the Mundari word always has as many syllables as it has vowel phonemes.

1.A. ESSENTIAL PHONEMIC FEATURES

The Mundari vowel phonemes are in contrast with each other by certain identifying-contrastive features. These features are the basic features of tongue height, tongue position, and lip rounding, plus the additional features of glottalization, and the off-glide.

(a) The five simple vowels are distinct from each other:

Although this may seem immediately evident from the differences in tongue height, tongue position, and lip rounding, it is possible that a combination could be affected when two sounds have features in common. The following pairs, although not truly suspect, might possibly be conceived as not in contrast with each other, without further evidence.

/i/,/e/ Front Unrounded vowels are distinct as high and mid.

High vowel /i/ api, 'three'

Mid vowel /e/ ape, 'you(pl)'

The vowels are in contrast in identical environment.

/u/,/o/ Back Rounded Vowels are distinct as high and mid.

High Vowel	/u/	rua,	'fever'	[EM.3663]
Mid Vowel	/o/	roa,	'to plant'	[EM.3616]

The vowels are in contrast in identical environment.

The low central vowel [a] is closest to the mid front vowel [e] and the mid back vowel [o]. It can be shown to be distinct from them.

/a/,/e/ Low Central Vowel and Mid Front Vowel are distinct.

Low Central	/a/	mad,	'bamboo'	[EM.2740]
Mid Front	/e/	med,	'eye'	[EM.2805]

The vowels are in contrast in identical environment.

/a/,/o/ Low Central Vowel and Mid Back Vowel are distinct.

Low Central	/a/	ako,	'they'	[EM.0083]
Mid Back	/o/	oko,	'what?'	[EM.3082]

The only vowel contrasts that have not been considered here are the less likely combinations of vowels widely different in sound. The vowels [i] and [u], although both high vowels, are different both by tongue position and lip rounding. They are contrasted in many forms, such as:

diku, 'foreigner'[EM.1062] duku, 'sorrow' [EM.1101]

The vowels [e] and [o], although both mid vowels, are distinct both by tongue position and lip rounding. They are contrasted in forms such as:

kera, 'buffalo' [EM.2298] kora, 'male' [EM.2480]

The vowel [a] also contrasts with the distant high vowels [i] and [u].

mindi,'sheep' [EM.2840] mandi, 'rice' [EM.2771]

dul, 'to pour' [EM.1103] dal, 'to strike' [EM.0960]

(b) The simple vowels are regulated in their occurence by vowel harmony. In the search for minimal pairs to prove the distinction between the five simple vowels, considerable difficulty is experience because of the Mundari laws of vowel harmony. According to these laws, all morphemes are classed as high morphemes or as low morphemes.

1. The high morphemes of Mundari use the high vowels [i] and [u] as vowel nuclei, but exclude the mid vowels [e] and [o]. The low central vowel [a] is considered neutral, and may occur in high or low morphemes.

a) Within the morpheme, the law of vowel harmony is strict, and is only broken by a few loan words, such as -uter,'very'(a Sanskrit loan).

High Morphemes contain: [i], [a], [u]. but not [e],[o].

b) Within the morpheme, phonetic changes occur in accordance with the laws of vowel harmony, high sounds becoming assimilated to high sounds

kora, 'man; male' kuri,[for kori],'woman;female'

Given the feminine ending in -i, the root changes from kor- to kur-.

c) Across morpheme boundaries, the laws of vowel harmony are sometimes obligatory, and sometimes optional, depending on the morphemes.

In the formation of the demonstrative pronouns,vowel harmony produces:

en, 'that' ini',[for eni'],'that one; he'

inku,[for en-ko],'those ones,they'

In the formation of the passive, vowel harmony is optionally applied:

kaji, 'say' + -o','passive' = kajiu', or kajio'

2. The low morphemes of Mundari use the low vowels [e] and [o], and the neutral vowel [a]. The high sounds [i] and [u] are excluded.

The laws of vowel harmony, and the distinction between high and low Mundari morphemes helps in our diagnosis of the vocoid glides. If every intervocalic [i] and [u] is written as a consonant, i.e. as [y] and [w], then the laws of vowel harmony are kept inviolate. The problem is that although high morphemes may take either glide, low morphemes have neither.

a) The true diphthongs [ai] and [au], occuring in final position, or in medial position followed by a consonant, are always high morphemes.

tai, bai, lai, sai, hai; au, bancau, parau, etc.

bairi, paisa; auri, sauri, cauli, etc.

b) The diphthongs [ai] and [au] when followed by a vowel, may be high or low morphemes, depending upon whether that vowel is high or low.

ayar, saya, sayad, mayang, daya, hayam, bayar, ayub, ayum, etc.

In contrast with tayom, mayom (low morphemes)

nawa, (high morpheme)

c) All other intervocalic glides must be interpreted as consonants in order to keep the vowel harmony, whenever a low vowel appears.

loyang, oyar, moyod, doya, soya, hoyo, (low morphemes)

sewa, hewa, (low morphemes)

tuyu, kiwa, (high morphemes)

Similarly, the on-glide [u] in et'war, must be changed to [w], as the morpheme is established a s a low morpheme by the presence of [e].

Vowel harmony is preserved if the following rule is followed:

Within a morpheme, three consecutive vowels cannot occur. Intervocalic [u] must be written as [w], intervocalic [i] written as [y].

(c) The five glottalized vowels are distinct from the simple vowels. The glottalized vowels are distinct from the simple vowels according to two distinctive features, combined in the single feature of the glottalization. First, if the simple vowel be considered to consist of a single mora, or musical beat, the glottallized vowel consists of a double mora. Second, this double mora is broken, in the middle, by a contraction of the throat nuscles, a glottal "catch". By this second feature, the glottalized vowels are distinct even from the geminate, or long vowel. The triple distinctinn may be summed up:

Simple vowels: one beat (mora)

Long Vowels: two beats (two moras)

Glottalized Vowels: two beats plus a glottal catch.

It is really the glottal catch which the native speaker listens for, and for which he corrects the foreigner learning the language. The length as such is not phonemic. The glottalized vowels appear equally in contrast to both long and short vowels,and are set apart. All vowels are characterized as with the glottal catch, or without it. This contrast can be demonstrated for the five vowel positions:

/i/, /i?i/ With High Front Vowels, glottalization is distinctive.

Glottalized vowel /i?i/ lelli'a,'S first saw him'

Unglottalized vowel /i/ lellia, 'S will first see him'

These forms are grammatical constructions, not morphemes, but they are forms in which the /i/ vs./i?i/ contrast is evident. The glottal /i?i/ is rare,in forms like -i','he'; ni','this one'; ti','hand'.

/e/,/e?e/ With Mid Front Vowels, glottalization is distinctive.

Glottalized vowel /e?e/ re',[re?e], 'rob' [EM.3552]

Unglottalized vowel /e/ -re,[re], 'in' [EM.3546]

Minimal pairs among the mid front vowels are quite common,for example ge?e/ge, he?e/he, re?e/re, le?e/-le, ne?e/ne,

The glottalized form is found elsewhere in many forms,always final,as goe?e, pere?e, pere?e, jete?e, de?e, sare?e, lebe?e, ete?e, e?e, etc. Contrasts among the glottalized vowels may also be found

ni?i,'this one' ne?e, 'here it is'

eta?a, 'other' ete?e,'begin'

/a/,/a?a/ With Low Central Vowels, glottalization is distinctive:

Glottalized vowel /a?a/ -ja',[ja?a],'perhaps[EM.1948]

Unglottalized vowel /a/ ja, [ja], 'any' [EM.1947]

Minimal pairs among the low central vowels are also frequent,as ja?a/ja, ka?a,/ka, ga?a/ga, ma?a/ma, na?a/na, ha?a/ha, a?a/a.

The glottalized forms of the low central vowel are found elsewhere,as da?a, ra?a, japa?a, keca?a, lija?a, nuba?a, ora?a, mena?a, la?a,ta?a.

Other disyllabic pairs often confused by beginningers in Mundari,are

seta,'dog' seta',morning' [EM.3931][EM.3932]

pura,'whole' pura',many' [EM.3429][EM.3430]

/o/,/o?o/ With Mid Back Vowels, glottalization is distinctive.

Glottalized vowel /o?o/ jo'[jo?o],'sweep' [EM.2080]

Unglottalized vowel /o/ jō,[joo],'fruit' [EM.2079]

Although similar in time lapse(2 beats),the glottal is distinctive.

The glottalized mid back vowels are of fairly frequent occurence,as bo?o, co?o, jo?o, ko?o, go?o, ho?o, no?o, lo?o in monosyllabics,and dissyllabics, as oro?o, oco?o, goso?o, lobo?o, keco?o, bano?o, etc. The distinction between /o?o/ and /a?/ can be demonstrated in forms like

oro', [óro?o], 'and'(conj.) [EM.3132]

ora', [ora?a], 'house' (Noun) [EM.3125]

ore', [ore?e], 'to be excessive'(Verb) [EM.3130]

/u/,/u?u/ With High Back Vowels, glottalization is distinctive.

Glottalized vowel /u?u/ bu',[bu?u], 'to bark' [EM.0630]

Unglottalized vowel /u/ -bu,[bu],'we(you & I)'[EM.0630]

The glottalized high back vowels are of relatively frequent occurence, bu?u, ku?u, uru?u, hiju?u, siu?u, giu?u. In general, the glottalized vowels are much rarer among the high morpheme glottals[i?i],[u?u], but are relatively more frequnt in neutral and low [a?a],[e?e],[o?o].

COMPARISON OF MONSYLLABICS

	[i]	[i?i]	[e]	[e?e]	[a]	[a?a]	[o]	[o?o]	[u]	[u?u]
p	---	---	pe	---	---	---	---	---	---	---
t	---	ti'	te	---	---	ta'	---	---	---	---
ṭ	---	---	---	---	---	---	---	---	---	---
k	---	---	ke	---	kaa	ka'	ko	ko'	ku	ku'
b	---	---	---	---	baa	---	---	bo'	bu	bu'
d	---	---	---	de'	---	da'	do	---	---	---
ḍ	---	---	---	---	---	---	---	---	---	---
g	---	---	ge	ge'	ga	ga'	go	go'	---	---
c	ci	---	---	---	caa	---	coo	co'	---	---
j	jii	---	---	---	jaa	ja'	joo	jo'	ju	---
h	---	---	hee	he'	haa	ha'	ho	ho'	---	---
s	---	---	---	---	---	sa'	---	---	---	---
m	---	---	me	---	ma	ma'	mo	---	mu	---
n	---	ni'	ne	ne'	na	na'	---	no'	nuu	---
l	---	---	le	le'	---	la'	---	lo'	---	---
r	---	---	re	re'	---	ra'	---	---	---	---

CHART OF THE VOWEL PHONEMES

		Front	Central	Back
High,	Simple	/i/		/u/
	Glottalized	/i?i/		/u?u/
Mid,	Simple	/e/		/o/
	Glottalized	/e?e/		/o?o/
Low,	Simple		/a/	
	Glottalized		/a?a/	

1.B. THE VOWEL PHONEMES (12)

The vowel phonemes of Mundari, given in the above chart, are divided into high sounds, which enter into high-vowel morphemes, the mid sounds, which enter into low-vowel morphemes, and the low vowel which acts as a neutral between high and low morphemes,occuring in both. Within the sounds given above, there are two combinations which occur as close knit unit, and serve as diphthongs, the clusters /ai/,/au/. The vowel phonemes fall naturally into the following classes:

(a) The five simple vowels, /i/, /e/, /a/, /o/, /u/;

(b) The five glottalized vowels, /i?i/,/e?e/,/a?a/,/o?o/, and /u?u/.

(c) The two diphthongs, /ai/ and /au/.

Limits on occurence are as follows: Three vowels never occur together; where three are listed,the central vowel is a medial consonant glide. Two vowels may occur,but /ai/and /au/also occur medially before consonants.

2. THE CONSONANT SYSTEM OF MUNDARI

The Mundari Consonant System consists of 20 consonant phonemes. Among these are 4 voiceless stops, 4 voiced stops, 2 affricates and 2 fricatives, 4 Continuants, 2 retroflex continuants and 2 glides. The 18 contoid consonants act as onset and coda to the syllable nuclei; the 2 glides act as intervocalic interludes.

2.A. ESSENTIAL PHONEMIC FEATURES

The Mundari consonant phonemes are in contrast with each other according to a limited number of identifying-contrastive features. These features include the manner of articulation and the place of articulation. Stops and affricates are also distinguished by voicing.

(a) Voiceless stops are distinct from voiced stops:

In Mundari, the voicing feature is an essential distinguishing feature only among the stops and affricates. According to this feature, the set of voicless stops and affricates, /p/, /t/, /ṭ/, /c/, and /k/, is distinguished from the voiced set, /b/, /d/, /ḍ/, /ɟ/, and /g/, The voicing feature does not occur as a contrasting feature with other manners of articulation, for all continuants and glides are voiced with no voiceless contrast; and the fricatives are all voiceless. The set of voiced sounds not in contrast includes /m/, /n/, /ṇ/, /r/, /ṛ/, /l/ and the glides /y/,/w/. The voiceless sounds are fricatives /s/,/h/.

/p/,/b/ Labial Stops, voiced and voiceless, are in contrast.

Voiceless labial stop /p/ parca,'document' [EM.3258]

Voiced labial stop /b/ barca,'spear' [EM.0397]

Other contrasts occur in such pairs as piri.'upland'/ biri,'cigarette' apu,'father'/ abu,'we;you and I'; ipil,'star'/ ibil,'thick' .However, no contrasts are found in final position, for the voiceless stop does not occur in these positions. Medially before a consonant, the voiceless stops is found only in such forms as dip'li,'time';hop'ta,'week'

/t/, /d/ Dental Stops, voiced and voiceless, are in contrast

Voiceless dental stop /t/ itu, 'teach' [EM.1941]

Voiced dental stop /d/ idu, 'perhaps' [EM.1890]

Other contrasts occur in such forms as badi,'string'/ bati,'lamp'; da','water'/ ta','towards'; kanta,'patch'/ kanda,'room'; ganda,'finger' as opposed to ganta,'a basket used for storing grains.'/ However, no contrasts are found in final position, for the voiceless stop does not occur in this position. Medially before a consonant, the voiceless stop occurs only in such forms as at'kar,'feel';et'kan,'bad'

/ṭ/,/ḍ/ Retroflex Stops, voiced and voiceless, are in contrast:

Vl. Retroflex stop /ṭ/ gaṇṭa, 'hour'(H.ghaṇṭa) [EM.1377]

Vd. Retroflex stop /ḍ/ gaṇḍa, 'one anna' [EM.1371]

Other contrast occur in such forms as kanda,'cut piece'/kanta,'thorn' The voiceless stop occurs finally only in a few words,as pit','bazaar' The voiced retroflex stop does not occur finally at all, and medially only occurs in the a nasal environment, in the cluster/ṇḍ-/.

/k/,/g/ Velar Stops, voiced and voiceless, are in contrast:

Voiceless velar stop /k/ haka, 'hang' [EM.1571]

Voiced velar stop /g/ haga, 'brother' [EM.1562]

Other contrasts occur in such pairs as panka,'fan'/ panga,'chink'. No contrasts are found in final position, for the voiceless stop does not occur in that position. Medially before a consonant, the voiceless stop is found in such forms as kak'la,'shout'and sek'ra, 'quick' The voiced stop does not occur in final position,being replaced by /ŋ/. The following sets of four show the /k/,/g/ contrast, as well as the contrast between the dental phonemes /t/,/d/ and the retroflex /ṭ/,/ḍ/.

kanta, 'patch' [EM.2216]	ganta, 'basket' [EM.1377]
kanṭa 'thorn' [EM.2216]	ganṭa, 'hour' [EM.1377]
kanda, 'room' [EM.2206]	ganda, 'finger' [EM.1369]
kanḍa, 'piece' [EM.2320]	ganḍa, 'anna' [EM.1371]

The forms kanḍa and ganṭa, have alternates, where aspiration is phonemic and are written as khanḍa,'cut piece' and ghanṭa, 'hour!. Similar contrasting forms occur in kanṭi,'nail'; kandi,'half a maund';opposed to ganṭi,'small bell'; and gandi,'crooked, slanting',with final /i/.

/c/,/j/ Palatal Affricates, voiced and voiceless,are in contrast:

Vl.Palatal Affricate /c/ cetan, 'above;upper' [EM.0819]

Vd.Palatal Affricate /j/ jetan, 'any(inan.form)' [EM.2036]

Other contrasts occur in such forms as cā,'tea'/jā,'any'; co',kiss'/ jo','sweep'; parca,'document'/ parka,'remove!. The voiceless /c/ does not occur finally; the voiced /j/ only in loans,such as soj,tej,mej.

(b) Stops at different places of articulation are distinct:

The stops, including the affricated stops, are formed at five different places of articulation. The stops at each of these positions, whether voiced or voiceless, are distinct from the stops in any other position. The positions are labial,dental,retroflex,palatal,and velar. According to these positions /p/ ≠ /t/ ≠ /ṭ/ ≠ /c/ ≠ /k/, and for the voiced stops likewise, /b/ ≠ /d/ ≠ /ḍ/ ≠ /j/ ≠ /g/. Among these sets of sounds, the only suspect pairs involve the dental/retroflex contrast.

/t/,/ṭ/ Dental and Retroflex voiceless stops are in contrast;

Dental vl.Stop /t/ bati, [bati], 'lamp' [EM.0443]

Retroflex vl.Stop /ṭ/ baṭi, [baṭi], 'overturn' [EM.0449]

Other contrasts are found in the dental clusters given before, in kanta,'patch'/ kanṭa,'thorn; ganta,'basket'/ ganṭa,'hour' . In final position, the dental does not occur, the retroflex in pit, 'bazaar'

/d/,/ḍ/ Dental and Retroflex voiced stops are in contrast;

Dental Vd.Stop /d/, manda,[manda],'headcold' [EM.2769]

Retroflex Vd.Stop /ḍ/ manḍa,[manḍa],'footprint'[EM.2770]

Other contrasts occur in the environments given above, such as the pairs kanda,'room'/ kanḍa,'piece'; ganda,'finger'/ ganḍa,'anna'. The retroflex stop does not occur in final position; the dental stop occurs with a nasalized allophone. Medially /ḍ/ occurs only in /-nḍ-/ In initial positions, we have the contrasts dal,'strike'/ḍal,'shield; dāli,'pulse'/dali,'basket'; dang,'indeed'/ ḍāng,'pole';dari,'be able' ḍari,'a spring'[EM.0999][EM.1188], as well as many others.

(c) Some Continuants are distinct according to place of articulation:

Among the nasal continuants, /m/ ≠ /n/ ≠ /ɳ/; and among the oral ones the resonants /r/ ≠ /ɽ/. The nasals differ from orals in manner.

/n/,/ɳ/ Dental and Retroflex Nasals are in contrast

Dental Nasal /n/ sena,'S goes' (cf.sen) [EM.3902]

Retroflex nasal /ɳ/ seṇa, 'wisdom'(cf.seṛa) [EM.3937]

Other contrasts are mana,'forbidden'/maṇa,'corpse; mani, 'oil seed'/ maṇi,'slow'. The retroflex nasal is never found in initial position.

/r/,/ɽ/ Dental and Retroflex Resonants are in contrast

Dental Resonant /r/ horo, 'turtle' [EM.1808]

Retroflex Resonant /ɽ/ hoṛo, 'man' [EM.1813]

Other contrasts are piri,'shield'/ piṛi,'upland'; pere',,'full'/ and peṛe',,'strength'. The retroflex resonant is never found initially.

/ɳ/,/ɽ/ Retroflex Nasal and Resonant are in contrast

Retroflex Nasal /ɳ/ goṇa,'cowshed'(cf.goṛa) [EM.1509]

Retroflex resonant /ɽ/ goṛa,'upland rice' [EM.1499]

Even in the traditional orthography, nasalization is the distinctive feature,putting these two forms in contrast. Also contrast siṛi,'ladder' siṇi,[sîɽî],'grindstone'. Neither consonant occurs initially.

The comparison of the simple continuants among themselves is not necessary, for they all occur freely in all positions, and the number of minimal pairs found for any two continuants is endless. Contrast:

-me,'you' ne,'this' -le,'we(pl.exc)' -re,'in'

ma',,'cut' na',,'now' la',,'excess' ra',,'of'

(d) The fricative /s/, and /h/, are distinct from the nearest sounds.

The sound closest to the voiceless dental sibilant /s/ is the voiceless palatal affricate, which has a composite structure similar to [ts].

/s/,/c/ Voiceless Dental Sibilant and Palatal Affricate are distinct.

Vl.Dental Sibilant	/s/	sandi, 'male'	[EM.3814]
Vl.Palatal Affricate	/c/	candi, 'a bonga'	[EM.0737]

Other contrasts include sab,'seize'/ cab,'yawn'[EM.3713], [EM.0679]. Both sounds are rare in final position, or occur only in loan words.

The sound closest to the voiceless aspirate,(glottal fricative),/h/, is the total absence of a consonant or Zero Onset, marked /#/.

/h/,/#/ Voiceless Aspirate contrasts with Zero Onset.

Voiceless Aspirate	/h/	hatom, 'aunt'	[EM.1662]
Zero Consonant Onset	/#/	#atom, 'edge; border'	[EM.0258]

Other contrasts include atu,'wash away'/ hatu,'village. In medial position, /h/ is often deleted, and is not contrasted in that position. For example: paham = paam, pahaṇ = paaṇ, and baha = baa.

(e) The phoneme /ḍ/ does not contrast with /ṛ/.They may be one phoneme.

The voiced retroflex stop /ḍ/ occurs initially, and medially only in nasal clusters. The voiced retroflex resonant /ṛ/ occurs finally, and medially between vowels or in non-nasal clusters. The complementary distribution is perfect. However, the native speaker seems to equate the cluster /ṇḍ/ and /ṛ/, as in the alternates oro'/ondo','and', or in loans such as saṛak/saṇḍak,'road'. These sounds are here left as distinct phonemes on the grounds of symmetry of phonemic pattern.

CHART OF THE CONSONANT PHONEMES					
	Labial	Dental	Retroflex	Palatal	Velar
Stops, voiceless	/p/	/t/	/ṭ/		/k/
voiced	/b/	/d/	/ḍ/		/g/
Affricate,voiceless				/c/	
voiced				/j/	
Fricatives		/s/			/h/
Continuants, Nasal	/m/	/n/	/ṇ/		
Resonants		/r/	/ṛ/		
Lateral		/l/			
Glides				/y/ , /w/	

2.B..THE CONSONANT PHONEMES

The Consonant phonemes of Mundari, given in the above chart, fall naturally into five phonetic groupings, which groupings are even further differentiated in their distribution. These groups are

(a) The voiceless stops, /p/,/t/,/ṭ/,/k/, which are rarely final

(b) The voiced stops, /b/,/d/,/ḍ/,/g/,which occur in all positions;

(c) The affricates and fricatives, /c/,/j/,/h/,/s/, rarely final;

(d) The simple continuants, /m/,/n/,/r/,/l/, which occur in all positions,

(e) The retroflex continuants,and glides, /ṇ/,/ṛ/,/w/,/y/,which never occur word initially. The glides occur only intervocalically.

THE CONSONANT PHONEMES (20)

A. OBSTRUENTS

/p/	Voiceless Labial Stop	parca, 'document'
/t/	Voiceless Dental Stop	tala, 'middle'
/ṭ/	Voiceless Retroflex Stop	ṭundu, 'finish'
/k/	Voiceless Velar Stop	kanda, 'room'
/b/	Voiced Labial Stop	barca, 'spear'
/d/	Voiced Dental Stop	daru, 'tree'
/ḍ/	Voiced Retroflex Stop	ḍonga, 'canoe'
/g/	Voiced Velar Stop	gama, 'rain'
/c/	Voiceless Palatal Affricate	cetan, 'above'
/j/	Voiced Palatal Affricate	jilu, 'meat'
/h/	Voiceless Aspirate	haga, 'brother'
/s/	Voiced Dental Sibilant	sadom, 'horse'

B. CONTINUANTS

/m/	Labial Nasal Continuant	marang, 'big'
/n/	Dental Nasal Continuant	nida, 'night'
/ṇ/	Retroflex Nasal Continuant	ceṇe, 'bird'
/r/	Dental Oral Resonant	rabal, 'easy'
/ṛ/	Retroflex Oral Resonant	hoṛo, 'man'
/l/	Lateral Oral Continuant	latar, 'below'
/w/	High Back Rounded Glide	hewa, 'accustom'
/y/	High Front Unrounded Glide	hoyo, 'wind'

DISTRIBUTION OF ALLOPHONES

CONSONANTS

1. Voiceless Stops (4)

(Rarely Final)

/p/	Voiceless Labial Stop		
	[p]	Initial Position,	parca,[parca], 'document'
		Medial before V,	gapa, [gapa], 'tomorrow'
	[p']	Medial before C,	dip'li,[dipIli],'time'
	---	Final Position ,	(No occurence)
/t/	Voiceless Dental Stop		
	[t]	Initial Position,	tala, [tala], 'middle'
		Medial before V,	hatu, [hatu], 'village'
	[t']	Medial before C,	et'kan,[etEkan], 'evil'
	---	Final Position,	(No occurence)
/ṭ/	Voiceless Retroflex Stop		
	[ṭ]	Initial Position,	ṭundu, [ṭundu], 'finish'
		Medial before V,	poṭom, [poṭom], 'bale'
	[ṭ']	Medial before C,	piṭ'-re,[piṭIre],'in the bazaar'
		Final Position,	piṭ', [piṭI], 'bazaar'
/k/	Voiceless Velar Stop		
	[k]	Initial Position,	kanda, [kanda], 'room'
		Medial before V,	sukul, [sukul], 'smoke'
	[k']	Medial before C,	kak'la,[kakAla],'shout'
	---	Final Position,	(No occurence)

DISTRIBUTION OF ALLOPHONES

CONSONANTS

2. Voiced Stops (4)

(All positions)

/b/ Voiced Bilabial Stop

[b]	Initial Position,	barca,[barca], 'spear'
	Medial before V,	caba, [caba], 'complete'
[b']	Medial before C,	bab'ta,[babAta], 'itch'
[b^m]	Final Position,	dub, [dub^m], 'sit'

/d/ Voiced Dental Stop

[d]	Initial Position,	daru, [daru], 'tree'
	Medial before V,	nida, [nida], 'night'
[d']	Medial before C,	jad'ka,[jadAka], 'more'
[d^n]	Final Position,	med, [med^n], 'eye'

/ḍ/ Voiced Retroflex Stop

[ḍ]	Initial Position.	donga,[ḍonga],'canoe'
	Medial before V,	pundi,[puṇḍi],'white'
---	Medial before C,	(no occurence)
---	Final Position,	(no occurence)

/g/ Voiced Velar Stop

[g]	Initial Position,	gama, [gama], 'rain'
	Medial before V,	haga, [haga], 'brother'
[g']	Medial before C,	bagrau,[bagAṛau],'spoil'
[gŋ]	Final Position,	màrang,[màraŋ], 'big'

DISTRIBUTION OF ALLOPHONES

CONSONANTS

3. Affricates and Fricatives (4)

(Rarely Final)

/c/ Voiceless Palatal Affricate

[c]	Initial Position,	cetan,	[cetan], 'above'
	Medial before V,	koca,	[koca], 'corner'
---	Medial before C,	(no occurence)	
---	Final Position,	(no occurence)	

/j/ Voiced Palatal Affricate

[j]	Initial Position,	jilu,	[jilu], 'meat'
	Medial before V,	kaji,	[kaji], 'talk'
[j']	Medial before C,	mej're,	[mej're], 'on the table'
	Final Position,	mej,	[mejE], 'table'

/h/ Voiceless Glottal Fricative

[h]	Initial Position,	hǫro,	[hǫro], 'man'
	Medial before V,	baha,	[baha,baa], 'flower'
---	Medial before C,	(no occurence)	
---	Final Position,	(no occurence)	

/s/ Voiceless Dental Fricative

[s]	Initial Position,	sadom,	[sadom], 'horse'
	Medial before V,	hasu,	[hasu], 'pain'
[s']	Medial before C,	hos'ro,	[hosǪro], 'a lie'
	Final Position,	bes,	[besE], 'good'

4. Simple Continuants (4)

(All Positions)

/m/ Labial Nasal Continuant

[m]	Initial Position,	marang, [maraŋ],	'big'
	Medial before V,	gama, [gama],	'rain'
	Medial before C,	gomke, [gomke],	'master'
	Final Position	catom, [catom],	'umbrella'

/n/ Dental Nasal Continuant

[n]	Initial Position,	nida, [nida],	'night'
[n]	Medial before C,	(Assimilated to following Consonant)	
	[n], [n̪],	[hende],	'black'; [d̪ond̪o], 'stupid'
	[ñ], [ŋ],	[puñji],	'capital'; [paŋka], 'fan'
[n]	Medial before V,	munu, [munu],	'beginning'
[n]	Final Position,	soben, [soben],	'all'

/r/ Dental Resonant Continuant

[r]	Initial Position,	rabal, [rabaɾ],	'easy'
[ɾ̆]	Medial before V,	merom, [meɾ̆om, merom],	'goat'
[r]	Medial before C,	barca, [barca],	'spear'
	Final Position,	latar, [latar],	'below'

/l/ Lateral Oral Continuant

[l]	Initial Position,	latar, [latar],	'below'
	Medial before V,	jilu, [jilu],	'meat'
[ɹ]	Medial before C,	bilka, [biɹka],	'mercy'
	Final Position,	rabal, [rabaɹ],	'easy'

DISTRIBUTION OF ALLOPHONES

CONSONANTS

5. Retroflex Continuants (2)

(Never Initial)

/ɳ/ Retroflex Nasal Continuant

---	Initial Position	(No occurence)
[ɳ]	Medial before V,	cene, [ceɳe], 'bird'
[ɳ']	Medial before C,	bakaɳ-te,[bakaɳ'te],'by talking'
[ɳ']	Final Position,	bakaɳ', [bakaɳ'], 'talk'

/ɽ/ Retroflex Oral Continuant

---	Initial Position	(No occurence)
[ɽ̆]	Medial before V,	hoɽo, [hoɽ̆o], 'man'
[ɽ̆']	Medial before C,	hoɽ'mo,[hoɽ̆'mo], 'body'
[ɽ̆']	Final Position,	dulaɽ',[dulaɽ̆'], 'love'

6. High Front and Back Glides (2)

(Never Initial)

/w/ High Back Rounded Glide

---	Initial Position	(No occurence)
[w]	Medial On-glide	et'war,[etwar], 'sunday'
[w]	Intervocalic glide	hewa, [hewa], 'accustom'

/y/ High Front Unrounded Glide

---	Initial Position	(No occurence)
---	Medial On-glide	(No occurence)
[y]	Intervocalic glide	hoyo, [hoyo], 'wind; air'

3

MUNDARI PHONOTACTICS

Mundari Phonotactics is the study of the linear arrangements of the phonemes of Mundari in syllables, morphemes, and words. This includes a study of the vowel phonemes and vowel combinations used as the nuclei of syllables, and the use of consonant phonemes as onsets, codas, and interludes in syllables and morphemes. The results of such a study are the main canonical CV patterns of the morphemes of the language. Through this study, we learn how the phonemic sound units are mapped into larger structures, or morphemes. The study of these morphemic units is then made the object of further study in Section II on Mundari morphology.

Mundari phonotactics is considered under the following headings;

(a) The Vowel Patterns of Mundari,- including the occurrence of single vowels as the nuclei of syllables, according to the laws of Mundari vowel harmony, and the occurrence of multiple vowel combinations with the limitations on vowel sequences in the language.

(b) The Consonant Patterns of Mundari,- including the occurrence of single consonants as the onset and coda of syllables, in initial and final position, the occurrence of single consonants as interludes in intervocalic position, and the limitations on consonant clusters.

1. THE VOWEL PATTERNS OF MUNDARI

The vowel patterns in Mundari are the ways in which vowels act as the nuclei of successive syllables within the Mundari morpheme. The rules of vowel patterning, or vowel harmony, apply to the Mundari morpheme rather than to the Mundari word, and apply to the Mundari syllable only in so far as it is a part of the Mundari morpheme. These vowel patterns are considered under two separate aspects:

(a) The mapping of simple Mundari vowel nuclei into morphemes. This includes the rules of vowel harmony, or the rules for the occurence of single vowels, whether simple or glotaalized, within the structure of the Mundari morpheme.

(b) The mapping of multiple successive vowels into morphemes. As a general rule, Only two vowels may occur successively. Three vowels may not occur. Of the two vowel combinations, some of these may be considered to be diphthongs, and act as a single vowel nucleus. Other combinations are never welded into diphthongs, and are always nuclei of two different syllables. Apparent three vowel combinations usually consist of a vowel, followed by an intervocalic glide, followed by a second vowel nucleus.

The vowels which enter into these morphemes as the nuclei of the morpheme syllables are the vowel phonemes of Mundari, including: the five simple vowels, and the five glottalized vowels.

1.A. VOWEL HARMONY

Vowel harmony, in Mundari, is a set of restrictions by which the vowels which occur within a Mundari morpheme are limited to members of the same phonetic set. These sets are distinguished as

(a) High vowels: /i/, /i'/; /u/, /u'/

(b) Low Vowels: /e/, /e'/; /o/, /o'/

(c) Neutral Vowels: /a/, /a'/

The Law of Vowel Harmony may be stated as follows:

"High Vowels and Low Vowels may not occur within the same morpheme."

With this law as a basis, it may be seen that the construction of Mundari morphemes allows for the following types of morphemes:

(a) High Morphemes, in which only high vowels occur; and
High morphemes, in which high and neutral vowels only occur.

(b) Low morphemes, in which only low vowels occur, and
Low morphemes, in which low and neutral vowels only occur.

(c) Neutral morphemes, in which only neutral vowels occur,
and which, consequently, can not be classified as either high or low.

Morpheme Type	CHART	Components
(a) High Morphemes	/i/,/i'/ ; /u/,/u'/	/i/-/a/-/u/
(b) Neutral Morphemes	/a/,/a'/	/a/
(c) Low Morphemes	/e/,/e'/ ; /o/,/o'/	/e/-/a/-/o/

Note that /a/, although phonetically low, is neutral in vowel patterns.

The High Morphemes of Mundari are the morphemes which contain only high vowels, or a combination of high and neutral vowels. The vowels which occur in these high morphemes are /i/,/u/,/a/ and their glottalized counterparts. Once a law of vowel harmony is established for multi-syllabic morphemes, monosyllabics may be also classed as high and low morphemes, even though harmony strictly supposes two nuclei.

(a) Monosyllabic high morphemes occur, with simple and glottalized vowels. These are monosyllabic with high front or high back vowels.

ci, 'what?'	ti', 'hand'
-bu,'we,you(pl) & I'	bu', 'to bark'

(b) Disyllabic high morphemes occur. These may consist of two high front vowels, or two high back vowels, or one front and one back high vowel, or any high vowel in combination with the neutral vowel /a/. Glottalized vowels occur in high morphemes in morpheme final position; but it is possible to have glottalized vowels in medial position in open syllables, as in certain low morphemes,na'jom,'witch';ba'com,'rope'

kili, 'clan'	siku,'louse'	rika,'to cause'
-----	hiju','come'	lija','cloth'
suku,'happiness'	gupi,'to herd'	kula, 'tiger'
uru','think'	-----	nuba','darkness'

The neutral may occur first,as in bati,'lamp'; daku,'thief'. The glottalized vowel /i'/is rare except in monosyllabics.

(c) Trisyllabic high morphemes occur, with vowels /i/,/u/,and /a/

dumbui, 'sink'	baria,'two'	salangi,'tall'

The Low Morphemes of Mundari are the morphemes which contain only low vowels, or a combination of low and neutral vowels. The vowels which occur in these low morphemes are /e/,/o/,/a/ and the glottalized vowels in the same positions. Monosyllabic,disyllabic,and others occur.

(a) Monosyllabic low morphemes occur,with simple and glottal vowels. These are the monosyllabic morphemes with mid front and back vowels.

-re,-in,at,on'	re',to rob'	lel,'see'
-do,'but,however'	lo','with'	hon,'child'

(b) Disyllabic low morphemes occur, with simple and glottal vowels. These may consist of two low front vowels, two low back vowels, one front and one back low vowel, or either low vowel with a neutral /a/.

renge,'poor'	etong;'answer'	seta,'dog'
jete','sunshine'	keco','tile'	eta','other'
horo, 'man'	soben,'all'	koca,'corner'
oro','and'	goe','die'	ora','house'

The neutral may occur first, as in etkan,'bad'; hatom,'aunt'. The neutral glottalized vowel also occurs, as cited above: na'jom,ba'com.

(c) Trisllabic low morphemes occur, with vowels /e/,/o/.and /a/. These occur with any combination,and require only one low vowel.

konea,'bride'	janao,'always'	deona,'socerer'

Words of more than three syllables may occur in forms which seem to be simple morphemes, but most of these are numerals, and their morphemic status is questionable,since they occur also in a shortened form:e.g.

upun,upunia,'four'	turui,turuia,'six'	iril,irilia,'eight'

The neutral morphemes of Mundari are the morphemes which have only neutral vowels, with neither high nor low vowels in the morpheme. The vowels which may occur here are /a/ and the glottalized /a'/.

(a) Monosyllabic neutral morphemes occur, with either /a/ or /a'/.

ka,'no; not' da','water' sab,'catch'

(b) Disyllabic neutral morphemes occur, with simple and glottal vowels.

caba, 'finish' japa','near' rabal,'easy'

Neutral morphemes of more than two syllables are doubtfully attested. Three syllables words will generally introduce a high or low vowel. One such doubtfully attested form is dangara,'youth', in which the second vowel is very likely a consonantal release, not a true neutral vowel.

Apparent exceptions to the rules of vowel harmony appear in certain loan words, such as the Sanskrit intensifier,-uter,'very',and the instinctive exclamatory cries,listed among the exclamations,e.g.

tirbole,(praise) heina(grief) heu(assent)

Extensions of the rules of vowel harmony across morpheme limits occur in the formation of demonstratives, and the passive of verbs:

(a) The demonstrative ne,'this' and en,'that' are changed as follows"

ne,'this' ni'(ne+i'),'this one' niku(ne+ko),'these ones"

en,'that' ini'(en+i'),'that one' inku(en+ko),'those ones"

(b) The passive in -o' becomes optionally -u' with high morphemes"

kaji,'say' kaji+o','be said' = kajio', or kajiu'

1.B. VOWEL SEQUENCES

Vowel sequences in Mundari are the immediate combinations of more than one vowel. Vowel harmony deals with the phonetic types of the vowels which may occur within the same morpheme, whether them succeed each other immediately, or are separated by consonants in the morpheme; vowel sequences deal only with the immediate succession of vowels. The Rule of Vowel sequence may be stated as follows:
"Within the morpheme, no more than two vowels occur successively."

With this law as a fundamental principle, we may consider the limitations upon two vowel sequences, as well as the occurence of the combination of three vocoids, in which the central vowel of the combination must be interpreted as an intervocalic consonantal glide.
(a) Sequences of two vowels occur. With sequences of two simple vowels those composed of a neutral vowel and a high front or back vowel are diphthongs,e.g./ai/, and /au/. These diphthongs act as a single syllable nucleus in the formation of morphemes. All other sequences are discreet, with as many syllables as their are vowels in succession. Glottalized vowels occur only as the second element in a sequence,as long as the sequence is within morphemic boundaries.
(b) Sequnces of three vocoids occur. The central vocoid is interpreted as a consonantal glide. The /y/ glide represents [e̯] in low morphemes and [i̯] in high morphemes. The /w/ glide represents [o̯] and [u̯].

Diphthongs, /ai/ and /au/ occur in open syllables. These may be in final or non-final position, and are generally stressed.

(a) Monosyllabics occur, with the diphthong as the syllable nucleus,

/ai/	tai,.'remain'	bai,'make'	hai,;fish'
/au/	au, 'bring'	bau,'brother'	

(b) Disyllabics occur, with the diphthong in open syllables,

/ai/	paisa, 'money'	bairi,'enemy'	[illegible]
/au/	cauli, 'rice'	sauri,'thatch'	bancau,'to save'

Sequences(VV) occur with all simple vowels, in almost every possible combination, in accordance with the law of vowel harmony.

(a) High Morphemes occur, with sequences of the vowels /i/,/u/,/a/.

baria, 'two'	biur,'turn'	giu','be ashamed'
ruar, 'return	-----	dumbui','sink'

(b) Low morphemes occur, with sequences of the vowels /e/,/o/,/a/.

konea,'bride'	deona,'soothsayer'	-----
soan,'smell'	candoa,'medal'	goe','die'

Note that when glottalized vowels occur in sequence, they are final to the sequence. The sequence /VV'/ occurs, the sequence /V'V/ does not.

(c) Geminates occur, with sequence of the same vowel occuring twice. These geminates coalesce into a single long vowel,marked with a macron.

jī, 'life'	nū, 'drink'	bā, 'flower'
hē, 'yes'	jō, 'fruit'	[baha,'flower']

Some geminates are formed by the elision of the aspirate /h/,as above.

Sequences (VVV) are to be interpreted as vowel-glide-vowel. Within morphemic boundaries, the central vowel will always be a very short vowel, and act as an intervocalic glide between the other vowels. The rule for the interpretation of consonantal glides may be stated: "A sequence of three vowels is not permitted in the language. Whenever three vocoids occur in sequence, the central vocoid is a consonant." The resulting consonantal interlude is simultaneously an off-glide of the preceding vowel, and an on-glide for the following vowel. The rule is to be applied prior to the rule for the formation of diphthongs.

The consonantal glide /y/ replaces /i/ and /e/ intervocalicly. The high front glide /y/ occurs in high, low and neutral morphemes.

tuyu, 'coyote'	ayum, 'hear'	[-iy-,-ey- don't occur]
hoyo, 'wind'	mayom,'blood'	doya,'back'
mayang, 'waist'	ayar, 'ahead'	daya,'mercy'

The consonantal glide /w/ replaces /u/ and /o/ intervocalicly. The high back glide /w/ occurs in high, low, and neutral morphemes.

kiwa, 'chin'		[-ow-,-uw- don't occur]
hewa, 'accustom'	sewa, 'serve'	
nawa, 'new'		

The same glide occurs as an on-glide only in the loan etwar, 'sunday'. But elsewhere within the language, both of the consonantal glides are listed as consonantals which are never in initial position.

2. THE CONSONANT PATTERNS OF MUNDARI

The consonant patterns of Mundari are the ways in which the consonantal phonemes enclose the syllable nuclei, actingas syllable onsets, codas, or interludes, either singly or in consonant clusters. In mapping the consonant phonemes into morphems,two assumptions are made, according to the syllable structure of the Mundari morpheme.
(a) It is assumed that the syllable-onset is an obligatory slot which is generally filled by a consonant,but occassionally by zero onset/#/. Syllable coda,on the contrary, is not an obligatory slot. Syllables without consonantal coda are of the form CV, and are open syllables. Syllables with coda are of the form CVC, and are closed syllables. With this assumption, the forms CV and CVC represent syllable structure.
(b) Granted the assumption that syllables have obligatory onset, all consonantal interludes,-consonants which occur intervocalicly-, are considered to be onsets to the following syllable, rather than as codas to the preceding syllable. Syllable breaks are made on this assumption.
(c) All morphemes will consequently be combinations of open and closed syllables. Monosyllabics will be CV or CVC; disyllabics will be CV.CV, CV.CVC, CVC.CV, CVC.CVC. The relatively rare tri-syllabics will be CV.CV.CV, or any combination of open and closed syllables.

In the consideration of the consonant patterns of Mundari, first the single consonants will be mapped into morphemes, and then those patterns will be considered which involve consonant clusters.

2.A. SINGLE CONSONANTS

Single consonants occur, in Mundari, in initial, medial and final positions within the morpheme. Clusters occur only in medial position; there are no initial clusters and no final consonant clusters. The consonant phonemes of Mundari are divided into distribution groups:

(a) The voiceless stops: /p/,/t/,/ṭ/,/k/ which are rarely final. These sounds are found initially, intervocalicly, medially before other consonants, but only /ṭ/ occurs finally, as in piṭ, 'bazaar'.

(b) The voiced stops: /b/,/d/,/ḍ/,/g/, which occur in all positions. Only the retroflex voiced stop /ḍ/ is not found in medial positions before another consonant, nor in final position.

(c) The affricates and fricatives: /c/,/j/,/h/,and /s/,rarely final. The phonemes /c/ and /h/ do not occur finally, nor do they occur in medial position before another consonant. /j/ and /s/ occur in final position, but only in loan words, as bes,'good'; mej,'table'

(d) The simple continuants: /m/,/n/,/r/,/l/ occur in all positions. These are the most versatile of the consonants,having no restrictions. Together with other consonants, they form smooth clusters medially.

(e) The retroflex Continuants: /ṇ/,/ṛ/ are never in initial position. However, they may occur initially,medially, and in consonant clusters.

(f) The consonantal glides: /y/ and /w/ never occur initially, finally. Medially they occur as an intervocalic interlude, but the high back glide /w/ is also found as an on-glide in loans,as etwar, 'sunday'

Initial Consonants in Mundari number 16 consonant phonemes: the voiced and voiceless stops, the affricates and fricates, and the simple continuants. The four phonemes /ṇ/,/ṛ/,/y/,w/ are not initial. Initial clusters are also excluded. Given the possibility of zero onset, marked #, the 16 consonants and zero onset given 17 initial possibilés. These 17 initials are found with all five simple vowels in CV or CVC.

	Ci...	Ce...	Ca...	Co...	Cu...
/#/	#i.pil	#e.tong	#a.pir	#ol.	#ub.
/p/	piṭ	pe.re'	pa.rom	po.ṭom	pu.ra
/t/	ti'	te.ra	ta.yom	to.pa	tu.yu
/ṭ/	---	ṭe,pa	ṭa.ka	ṭo.la	ṭun.du
/k/	ki.li	ke.ṛa	ka.mi	ko.ca	ku.la
/b/	bi.ur	bes.	ba.ba	bo.lo	bu.gin
/d/	di.ri	de.o.na	da.ru	do.ya	dul
/ḍ/	ḍin.ḍa	ḍe.bel	ḍa.ṛi	ḍon.ga	ḍum.bu.i'
/g/	gi.ti	ge.na	ga.ma	go.so'	gu.pi
/c/	ci	ce.tan	ca.tom	co.ke	cu.ṭi
/j/	ji.lu	je.te'	ja.pa'	jo.har	ju.lab
/h/	hi.si	he.wa	ha.sa	ho.yo	hu.lang
/s/	si.da	se.ta	sa.ma	so.ben	su.sun
/m/	mi.si	me.na'	ma.yom	mo.ca	mu.nu
/n/	ni.da	ne	na.wa	no'	nu.tum
/l/	li.ja'	le.ser	la.tar	lo.yong	lu.tur
/r/	ri.ka	ren.ge	ra.bal	ro.ko	ru.ar

Final Consonants in Mundari include 12 of the 20 phonemes. The Mundari morpheme either ends in an open or a closed syllable. If it ends in an open syllable, the final phoneme is a simple or glottalized vowel. If the final syllable is closed, the morpheme ends in one of 12 phonemes. Of the stops, the voiceless stops are not final, except retroflex /ṭ/; the voiced stops are all final except retroflex /ḍ/, which is replaced by an /ṛ/ phoneme in final position. This leaves 4 possible final stops. Of the fricatives /c/ and /h/ are never final, /s/ and /j/ are rare. All the simple continuants occur finally with all vowels, and also the retroflex continuants may be final. Intervocalic /y/and /w/ aren't final. Final Phonemes are: /t/,/b/,/d/,/g/;/s/,/j/;/m/,/n/,/r/,/l/; /ṇ/,/ṛ/.

	...iC	...eC	...aC	...oC	...uC
/b/	na.sib	---	sab	da.lob	dub
/d/	jid	med	mad	god	su.rud
/ṭ/	piṭ	---	---	---	---
/g/	bing,	se.teng	jang	ho.nong	#a.bung
/j/	---	mej	---	soj	---
/s/	---	bes	---	---	---
/m/	sim	he.ṛem	sa.kam	jom	#a.yum
/n/	#i.sin	so.ben	ce.tan	hon	su.sun
/r/	bir	le.ser	sar	ho.nor	bi.ur
/l/	#i.pil	sen.gel	ham.bal	ḍo.bol	su.kul
/ṇ/	---	---	ba.kaṇ	---	---
/ṛ/	---	---	du.laṛ	---	---

2.B. CONSONANT CLUSTERS

Consonant Clusters occur, in Mundari, only medially, and in words of more than one syllable. No initial clusters occur. In the borrowing of words with initial clusters, the Munda preposes a vowel in accord with his vowel harmony, as in 'school', is.kul. Likewise, final clusters do not occur. The sequence -ng is a single phoneme variant of /g/, the allophone [ŋ]. The sequence -nṛ, in some forms of the orthography, is a single phoneme, the retroflex nasal /ṇ/. Consonant clusters are divided into two phonetic groupings:

(a) Broken clusters are formed with a stop, fricative or retroflex continuant as initial member, and a stop or continuant as final member. In these clusters the initial member is first released with aspiration, or with a short vowel,homorganic to the preceding vowel. The cluster is,therefore,not a smooth grouping,but is broken into two discreet parts by the intervening release. Clusters revealed in a preliminary search include /p/,/t/,/k/,/d/,/s/, and /ṛ/ as initial members. All of these have a released allophone before a consonant.

(b) Smooth Clusters are formed with asimple continuant as initial member, and any consonant as second member. These simple continuants include the four phonemes, /m/, /n/, /r/, and /l/. Of these continuants only the /n/ phoneme undergoes assimilation to the following consonant within the boundaries of the morpheme. Across morpheme boundaries, however, even the /n/ phoneme remains unassimilated.

The Broken Clusters of Mundari include the following groups. Only those consonants are listed which have been found in clusters.

	/p/+	/t/+	/k/+	/d/+	/s/+	/ṛ/+
+/t/	hop't̪a	---	---	---	---	---
+/k/	---	et'kan	---	jad'ka	mas'kal	---
+/m/	---	---	---	---	---	hoṛ'mo
+/l/	dip'li	---	kak'la	kud'lam	---	---
+/r/	---	---	sek'ra	---	hos'ro	---
+/w/	---	et'war	---	---		---

The smooth clusters of Mundari always have an initial continuant and these continuants, particularly /n/ combine with most consonants.

	/m/+	/n/+	/l/+	/r/+	/m/+
+/p/	nim.ṗir	---	---	---	
+/t/	#im.t̪a	ken.t̪ed	pal.tan	sar.ti	
+/ṭ/	---	cen.ṭa	---	---	
+/k/	gom.ke	pan.ka	bil.ka	par.kom	
+/b/	ham.bal	---	bal.bal	---	
+/d/	---	pun.di	---	---	
+/ḍ/	---	ḍon.ḍo	---	---	
+/g/	---	ḍon.ga	---	---	
+/c/	gam.ca	pancaiṭ	---	par.ca	sam.ṛom
+/j/	---	pun.ji	---	Bar.jo	
+/s/	---	---	---	bir.sa	

CONCLUSION:

The study of Mundari phonotactics gives us an approximate idea of how the phonemes of Mundari are mapped into morphemes:
(a) Vowels: occur according to the laws of vowel harmony, within any CV pattern, the vowels must be high and neutral,low and neutral, or simply neutral. According the morphemes are high,low or neutral.
(b) Consonants: occur singly in initial and final positions, but may occur either singly or in clusters in medial position. Clusters with a coninuant as initial member are smooth,others are broken.

The results are consonants and vowels distributed into CV patterns. In monosyllabics, these patterns are CV and CVC, with the initial consonant replaced occasionally by zero onset. Multi-syllabic morphemes are combinations of CV and CVC syllables. These patterns are accompanied by stress in accordance with the following rule" Stress:"If the final syllable of a morpheme is closed(CVC), then the final syllable is accented; If the final syllable is open (CV),then the preceding,or penultimate syllable is accented." This rule applies to stress within morphemes. Stress patterns in words would take further investigation. In general, stress tends to remain with the primary roots, with the formative elements generally unstressed.

Phonotactics,in many languages,is so involved as to give very little definite information. This short study of Mundari phonotactics has been given because the phonological arrangements in this language are severely limited,and these limitations should be mentioned.

PART II

THE MORPHOLOGY OF MUNDARI

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PART II

THE MORPHOLOGY OF MUNDARI

Language is a code by which a message is sent from a source to a destination. The message is encoded at the source, sent by a transmitter through a channel to the receiver, where it is decoded and relayed to its destination. In the study of phonology, we have considered the message in the channel as made up of bits which are capable of changing the meaning of the message by essentially changing the signal that is sent. These are the phonemes of the language. These bits do not have meaning, but have the power to change the message. Specified groupings of these signal bits are arbitrarily and conventionally assigned meanings by the speech community. The second great problem of language is to isolate and classify the minimum units which carry meaning, the morphemes of the language. This is the study of morphology.

Morphology is the study of the minimum meaningful units of a language, and the ways in which these units are arranged in words. The smallest meaningful units of a language are called **morphemes**. In any language, some words will be found which cannot be divided into meaningful parts. These are morphemes. Other words will be found which can be divided into meaningful parts. Each word part which cannot be further subdivided is said to be a minimal unit or morpheme. The study of morphology is the isolation and classification of these morphemes.

Morphemes sometimes have more than one shape. The different shapes or forms of a morpheme are called morphs (from the Greek word, morphe', 'shape'). When a single morpheme has several different shapes, these morphs are said to be allomorphs, or 'other shapes' of one and the same morpheme. The morpheme then represents a set or class of forms which carry the same meaningful message. It is a universal,whose comprehension is made up of the distinctive features of meaning which identify the morpheme and distinguish it from other morphemes, and whose extension is the specific set of forms which actually occur in the transmission of this particular part of the message.

Morphemic Analysis is the process by which the morphs of a language are isolated and then grouped into meaningful sets, called morphemes. This analysis is based on the following presuppositions: (1) The Principle of Total Accountability. Every utterance in a language is composed of morphs and only of morphs. When an utterance is analyzed it is found to be composed entirely of morphs, with nothing left over. (2) The Principle of Indivisibility. The morphs of a language are the minimum partials which recur with constant meaning. By definition they are minimum parts, and cannot be further subdivided into other shapes which carry a definite meaningful part of the message transmitted. The first pre-supposition demands that eacn utterance be segmented into shapes, each of which are associated with part of the message' the second demands that this segmentation be complete,and the parts minimal.

The Principles of Morphemic Analysis by which the utterances of a language are segmented, identified, and classified as morphemes, can be reduced to four general rules:

(1) The Principle of Identity. Invariant morphs which have only one shape, associated with a constant meaning, are morphemes. Variant morphs of different shapes which are constantly associated with a single meaning must belong to the same morpheme.

(2) The Principle of Contrast and Complementation. Morphs in contrast in identical environment, where the form difference is paralleled by a meaning difference, must belong to different morphemes. Even when the forms are identical, as in the case of homonymous forms, we must consider the forms as different morphemes whenever the meanings are in contrast. On the other hand, forms which are non-contrastive, that is, forms which are either in complementary distribution or in partial complementation with some free alternation, may belong to one morpheme.

(3) The Principle of Grammatical Symmetry. In the isolation and the classification of morphemes, the resulting morphemes must fit the emerging grammatical structure. According to this principle, the range of the morpheme should be non-unique, that is, it must be paralleled elsewhere by the range of the other morphemes of the language.

(4) The Principle of Economy. On the supposition that languages use a restricted number of canonical CV forms, canonical forms should take precedence over noncanonical forms. When a conflict arises between syntax and morphology, the functional simplicity of syntax takes precedence.

The Results of Morphemic Analysis are the morphemes of the language, listed in a lexicon with the variant morphs by which they are manifested. The lexicon is the "total stock of morphemes of a language." (Bloomfield,1933). These are the building blocks out of which words and utternaces are made. According to their shape, morphemes are of various kinds. First, there are free forms, which are found to occur in isolation. Second, there are bound forms, which never occur in isolation, but in every occurence are found joined to some other form. The free forms may be further divided into simple forms, which consist of a single morpheme, and complex forms, which consist of more than one morpheme. These complex forms can then be further described in terms of their constituent morphemes and the order in which they occur.

With regard to the morphology of words, morphemes are primary or secondary. The primary morphemes are radicals or stems; the secondary or formative elements are affixes. Stems may be simple stems of one morpheme, called roots, or they may be of more than one morpheme. Stems composed of a root plus affix are derived stems; stems composed of two roots are called compound stems. Stems are often free forms, but in many languages,such as Latin, the majority of the stems are bound. Affixes are generally bound forms. These include prefixes, infixes, suffixes, internal vowel changes, and reduplication. Depending upon the language, words will consist of (1)free forms; (2)bound plus bound form; (3) free plus bound form; or,(4) free plus free form,or some combination of these.

The Morphology of Mundari serves to establish this language as an agglutinative language. As such, it has primary elements or radicals in combination with secondary formative elements or affixes. The elements are not simply juxtaposed, they are joined into words. And in the formation of these words, neither the radical nor the formative element undergoes any substantial phonological change.

The morphemes of Mundari are either stems or affixes. The stems are generally free forms, which may occur with or without affixes, but a few bound stems occur. The affixes or formative elements are more generally bound forms which occur only in combination with the stems. The stems and affixes of the Mundari lexicon are divided into sets: (1) The Noun system of Mundari, including the main noun and pronoun stems, and their affixes, especially those of gender,number, and case. (2) The Verb System of Mundari, including the main verb stems and the affixes proper to verbs, especially those of voice, tense and mood. (3) The uninflected particles of Mundari. including the adjectives, adverbs, and the various types of function words, such as relators, interjections, connectors, and emphatics. The set of emphatic affixes cuts across this division,and may occur with any Mundari word.

FREE STEMS	+	BOUND AFFIXES	
Noun Stems	+	Noun affixes	+ emphatics
Verb stems	+	Verb affixes	+ emphatics
Particles	+	----------	+ emphatics

The uninflected particles of Mundari can only be divided into subclasses by means of syntactic criteria, since they do not have any regular system of affixes by which they may be distinguished/

(1) Adjectives may be recognized by the following criteria. They occur in modification structures immediately preceding the noun, with no gender, number or case agreement. They occur as predicate attributes in a verbal structure with the emphatic -ge and the mood suffix -a. They fill the same slots as nouns with the possessive suffixes.

(2) Adverbs occur as adjuncts to the sentence structure. They fill the same slots in the sentence structure as nouns in any oblique case except the possessive, in particular the temporal,locational, manner and final slots corresponding to the questions: When? Where? Why? How?

(3) Function Words, such as connectors, relators, interjections, and emphatics are small closed classes of words which can be defined by listing. These forms are recognized by the following syntactic norms:

a) Forms which relate two similar syntactic units

And are not constituents of either unit..... Connectors

And are constituents of one of the units ..... Relators

b) Forms which modify a single syntactic unit

As adjuncts to a whole sentence structure..... Adverbs

As modifiers of a noun or noun phrase..... Adjectives

c) Forms which are syntactically independent

And attached to specific words for emphasis..... Emphasizers

Completely independent of the sentence structure... Interjections

The problem in Mundari morphology is that not only in syntax, but even in the morphological formation of words, a stem occurs now as one part of speech, now another. The same stem might occur now with the noun suffixes, now with the verb suffixes, now as an independent particle. This is what Hoffmann calls the functional elasticity of of the Mundari word.

> "Instead of parts of speech with well-defined functions .....we meet, in Mundari, with words of great functional elasticity, and therefore of a vague signifying power,- words which...do generally not by themselves connote the manner in which the mind conceives the things signified."
> [MG.Intro.xx,xxi.]

According to Hoffmann, every Mundari stem may assume at least two functions: its own function, and the function of a verb stem.

> "Every Mundari word may, without undergoing any change of its original form, be used with the function of a verb."
> [MG.Intro.vi.]

Hoffmann also speaks of Mundari words as if they all belonged to a single form class, which takes on various functions in syntactic usage.

> "The same unchanged form is at the same time a conjunction, an adjective, a pronoun, an adverb, a verb, and a noun... It is simple a vague elastic word, capable of signifying, in a vague manner, several distinct concepts, i.e. of assuming a variety of (syntactic) functions."
> [MG.Intro.xxi.]

The only criteria,then, for distinguishing forms as members of special form classes are the syntactic criteria, or a temporary morphology.

> "The function it performs in a proposition is generally gathered either (1) from the context, or (2) from the position it occupies, or (3) from some suffix assumed temporarily for a particular purpose."
> [MG.Intro.xxi.]

Granted the "functional elasticity" of Mundari words, it is still possible, on a statistical basis if no other, to assign the various Mundari words to a particular form class. And this is what Hoffman himself does, in fact, in his Encyclopedia Mundarica. Every form is assigned to at least one form class, and where a form has several functions, it is assigned to more than one form class under the same lexical entry. No form is left as a "vague elastic word".

The procedure in assigning form classes is as follows:
(a) A form which most often occurs as a member of a specific form class is listed as a member of that form class. That is, this form class is given to the word as its "primary function"
(b) If the form has other uses, and functions as a member of another form class with statistically high regularly, then this function is listed as a secondary function under the same lexical entry.
(c) If the form occurs with other functions that are of such low statistical probability as to render such an entry superfluous, the form is not listed as a member of this form class, although the possibility of such usage always remains open, and would be, in such cases, immediately recognizable from the syntax.

That this procedure is not in the least unusual in lexicography can be confirmed by a casual glance at any English dictionary, under such entries as "comb", "play", listed as both noun and verb.

In the analysis of any language it is useful to distinguish the form of a word from its function within a syntactic construction, that is to distinguish:"What it is" from "What it does". In a strictly formal approach to language, forms are listed according to "what they are", that is, according to their morphological shape. Such a strict formal definition is based upon (1) the paradigmatic set of inflections of a form class, (2) the set of derivational markers which identify these forms as members of a form class, or (3) exhaustive listing of the forms within a class. Generally, form classes are based upon inflection. Derivational markers usually identify only a small sub-class of forms within a class. Listing is only useful for the definition of the closed classes of function words.

In a functional approach to grammar, however, forms are listed as performing the same grammatical function in actual syntactic usage. If the morphological forms are nouns, verbs, adjectives and adverbs, the functional use of these in typical constructions would be called nominals, verbals, adjectivals and adverbials. These functional words or groups of words would be defined as follows:

a) A nominal is a word, or group of words, that fills slots within the construction frame that are typically filled by the noun form class. e.g.subject of a sentence, objects direct and indirect,etc.

b)A verbal is a word or group of words that fill slots in the frame typical of the verb form class.e.g.the predicate slots of sentences.

c) An adjectival is a word or group of words that fill slots in the construction that are typically fill by the adjective form class. e.g.modification slots in noun phrases, predicate attribute slot.
d) An adverbial is a word or group of words that fill slots in the construction that are typically filled by the adverb form class. e.g.the typical sentence adjunct slots of time,place,manner,purpose.

The functional approach and the formal approach are combined as follows. The construction frame is used as a diagnostic frame to separate the words and groups of words into functional slots. In this guesswork procedure, it is necessary to know the full meaning and function or each part of the utterance. The results of this procedure is a collection of the forms that can occur as fillers in a single slot. The second procedure is to examine the items that have fallen out through the diagnostic sieve into a single basket. All of these forms are not alike, some seem to belong more properly in other slots. At this point a search is made for the formal markings, or dogtags, whereby the majority of items in the basket are identified as belonging to the same general form-class. These markings are inflections, or for small sub-groups, derivations. Where the class is small,it can be listed. The third procedure is to re-define the original slot in the construction frame in terms of the morphological characteristics that occur with the majority of forms in that slot. This form class becomes the prime analogate of fillers for that slot in the frame.

A functionally based formal approach can be applied to the Mundari language. In this approach, a form is listed as a member of a single form class, and other uses of this same form are classed as cross-functional usage. In the application of this method, full use must be made of the distinction between stems and affixes. It is the stems that belong to a specific form-class. The affixes as used as diagnostic tools to discern the form class of the stem.

Nouns are forms that take the typical suffixes of the noun system; nominals, however, include only nouns in the direct case, the noun substitutes or pronouns, and noun phrases.

Verbs are forms that regularly take the suffixes of the verb system. verbals,however, include forms which take the verbal suffixes in a specific construction, while remaining members of a different form class. Whatever acts as a verb here and now is a verbal form.

Adjectives are uninflected forms that occur with nouns in typically endocentric modification structures,or as predicate adjectives. Adjectivals include all adjectives, as well as other words or phrases that have adjectival use, such as the possessive case of nouns.

Adverbs are uninflected forms that occur as typical sentence adjuncts Adverbials include all words or phrases that fill this same function, such as the oblique cases of nouns other than the possessive.

In such a procedure, the function words are listed as closed classes, but are absorbed in the larger picture. What remains is a relation of opposition between the four major functional classes of the language.

In Mundari, the slots in the construction frame are defined by the full form of stem plus affix. These slots are functional and define the nominals, verbals, adjectivals and adverbials as follows: Nominal slots are recognized by the dual affix,-king and plural, -ko in the case of pronouns, by the pronominal endings or suffixes,namely: -ing, -lang, -ling, -bu, -le, -me, -ben, -pe, -e, -king, -ko Verbal slots are recognized by the voice affixes, -en, -o'; by tenses, -ta, -le, -tan, -jad, -ked, -ken, -tad, -led, -len, -jan, -akad,-akan, with pronominal subjects and objects, and the mood suffixes -a, -ka. Adjectival slots are recognized as slots also filled by the possessives, -taren, -ren, -a', -rea, -ra' as well as by recognizable numerals. Adverbial slots are recognized as slots filled by other oblique cases, -re, -te, -ete,-kore, -kote, -ta',-tare,etc. -sa', -sa're,etc. which define locationals and temporals; also -lo', -leka,-mente.

A futher diagnosis can be made of the stems which take these various affixes. The stems which take the dual,-king, the plural,-ko all of the possessive endings, and the adverbials endings are nouns. Those which take the voice, mood and tense endings are verbs. The adjectives and adverbs which are uninflected are recognized as the forms which occur in the adjectival and adverbial slots respectively, and are not an inflected form of the noun. Thus with the help of the secondary roots or formative elements it is possible to assign the forms of Mundari to form classes,which operate in functional slots.

1

THE MUNDARI NOUN SYSTEM

The Mundari noun system consists of noun stems and forms built upon noun stems. A stem is listed as a noun stem if it regularly takes the formative elements proper to a noun, namely, gender, number, case. Nouns are distinguished from verb stems, which take the formative elements denoting voice, tense and mood, and from all other parts of speech which are uninflected particles, such as adjectives, adverbs, and the various classes of function words.

The formative elements of the Mundari noun are grouped into affix clusters. The first cluster includes the stem with its gender. Gender is overtly marked in only a few cases, and it may be said in general that a noun stem has gender, but is inflected for number and case. The second cluster includes the number markers, and the third cluster are case affixes. Nouns uninflected for case are said to be in the direct case; nouns with a case marking are in the oblique cases. The possessive case is an adjectival,all other cases are adverbial.

Noun = (Stem + Gender) + (Number) + (Case)

1) Nominals: Nouns in the direct case, with case marking ∅

2) Adjectivals: Nouns in the possessive case, with poss.case marking

3) Adverbials: Nouns in the oblique case, with oblique markings.

The Mundari noun system is considered under these headings: (1) Noun Stem Construction: Noun stems are forms which have gender, and may be inflected for number and case. Stems may be simple, derived or compound, and belong to either the animate or inanimate gender. (2) Noun Inflections: Noun stems are inflected for number and case. An inflected noun consists of a noun stem with its number marking, with or without an oblique case ending. An inflected noun with its case ending becomes an adjectival or adverbial form in function. (3) Pronouns: Pronouns are noun substitutes. They are formed from a pronominal base, to which is added a person-number suffix. According to the base used, these pronominal forms are classified as personal, demonstrative, indefinite, or interrogative pronouns. (4) Pronoun Inflections: Pronouns of all classes take the regular case endings of the noun system. Inflected pronouns, in function, are classed as pronominal adjectives, or pronominal adverbs. The inflected pronouns differ from other adjectives and adverbs, in that they are specified as to person and number by a special suffix.

The noun paradigm would be any noun stem, in an array with all of the possible case endings of the noun system. To set up such a paradigm would be possible but not practical. Although the number suffixes are limited, the case endings are so many and so varied that it is easier to consider the noun system in parts, according to the different kinds of case endings that may occur.

1. NOUN STEM CONSTRUCTION

A noun stem is a form which has gender and is inflected for number and case. Stems are listed in the lexicon as belonging to the animate or inanimate gender. With animate stems number must be expressed but the singular number is marked by ∅; with inanimate stems, number need not be expressed, but can be expressed for emphasis.

Noun Stem = (Root + gender)

1.A. NOUN STEMS

Noun stems have a base which may be a root, a modified root, or a combination of more than one root. These stems are classified as simple, derived, and compound.

a) Simple Stems: Stems which consist of a single root morpheme,and.are listed as animate noun stems (an.ns.) or inanimate stems (in.ns.)

bonga,	an.ns. 'spirit'	bir,	in.ns., 'forest'
kora,	an.ns. 'male'	diri,	in.ns., 'stone'

b) Derived Stems: Stems which consist of a root plus an affix. Certain abstract nouns are formed by inserting the nominalizing infix -n- into verb stems, immediately after the first vowel. This vowel is then repeated immediately after the infix. (MG.xv)

bolo,	tvs, 'enter'	bonolo,	in.ns. 'entrance'
dal,	tvs, 'strike'	danal,	in.ns. 'a blow'

Instrumental nouns are formed by adding -tea'to verbal participles; in this form,-te marks instrumentality, and -a'is a nominalizer.(MG.188)

ol, tvs, 'write' oltea', in.ns. 'writing materials'

Material nouns are formed by adding -ea' to verb stems; in the form the -e- is elided when -ea' is preceded by a vowel: (MG.188)

jom, tvs, 'eat' jomea', in.ns.,'food'

hero',ivs, 'be sown' heroa', in.ns.,'seed grains'

c) Compound Stems: Stems which consist of more than one primary root are called compound stems. Either the two roots are coordinate. or one of the roots,the preceding one, is a modifier of the second.

Coordinate Compounds are usually made up of two roots of the same general class, and the compound represents the whole group.(MG.184-7)

enga, an.ns., 'mother' apu, an.ns.,'father'

enga-apu, cmpd.,'mother+father; parents'

sunum, in.ns.'oil' bulung, in.ns., 'salt'

sunum-bulung, cmpd., 'oil+salt; necessities of life'

Subordinate Compounds consist of two roots. The first root acts as a modifier and the second as head,in a modifier+head construction(MG.187)

bir, in.ns.,'forest' sukuri, an.ns.,'pig'

bir-sukuri, an.ns., 'forest-pig; wild boar'

catom, in.ns.,'umbrella' ora', in.ns.,'house'

catom-ora', in.ns., 'umbrella-house; gabled house'

Formally, coordinate and subordinate compounds are of the same basic construction,noun + noun. Coordinates,however,are of one gender.

1.B. GENDER OF NOUNS

Nouns have two grammatical genders- animate and inanimate. Nouns of the first class include all supra-human, human and animal beings, both male and female, as well as celestial objects capable of automatic locomotion. Nouns of the second or inanimate class include all living plants, inanimate objects, and the abstract nouns

a) Animate Nouns: Class #1 nouns include:

1.Divine and supra-human beings, and causes of natural phenomena.

pormesor, nl, 'God' bonga, nl, 'spirit'

2.Human beings both male and female,

kora, nl, 'male,husband' kuri, nl, 'female, wife'

3. Animals, both male and female

hara, nl, ploughing bull' gundi, nl, 'ploughing cow'

4. Insect life, including lac(shellac) before it is boiled,

roko, nl, 'a fly' e', nl, 'lac insects'

5. Celestial Bodies, which seem to have automatic motion,

singi, nl, 'sun' ipil, nl, 'star'

b) Inanimate Nouns: Class #2 nouns include all other nouns,namely,

1. Plants, which,though living, have no locomotion,

daru, n2, 'tree' baha, bā, n2, 'flower'

2. Inanimate objects, except the celestial bodies,

diri, n2, 'stone' ora', n2, 'house'

3. All abstract concepts, such as kami,'work'' kaji,'word'

Animate nouns differ from inanimate nouns grammatically. The animate nouns must be inflected for number, as singular, dual, or plural. This difference is exaggerated in the pronouns. Those pronouns which represent animate nouns as their domain, have a full range of inflection in the 3 persons, and 3 numbers. Further, when these pronouns are used as the subject or object suffixed to verb stems, they manifest concord with animate subjects and objects outside the verb.

Inanimate nouns, on the contrary, need not be inflected for number. An inanimate noun uninflected for number may represent the singular,dual or plural. Inanimate pronouns likewise are represented by a single form. When inanimates are the object, direct or indirect, infixed in a verb, the inanimate is manifested by a ∅ marker.

Animate nouns can be further sub-divided into minor classes:
(a) Personal nouns are distinguished from impersonal, grammatically, in the expression of the instrumental case in -te,'by,with'
Personals nouns in this category include supra-human and human beings; All others are impersonal. Personals take the instrumental phrase, -a hora-te, 'by way of'; impersonals take the instrumental -te.(MG.91-92)

gomke, n.l.,pers. 'master'	gomkea' horate,'by the master'
sadom, n.l.,imprs.,'horse'	sadom-te, 'by the horse'
hake, n.2., 'axe'	hake-te, 'with an axe'

(b) Masculine and Feminine genders can be distinguished by compounding.
Personal nouns take the pre-modifier, kora,'male'; kuri,'female'
Impersonal nouns take the modifier, sandi,'male'; enga,'mother'

Number is expressed by adding the dual and plural pronominal suffixes to the noun stem, namely, -king,'the two'' and -ko,'they'

horo, n.l., 'man'(Lat.homo)

horo-king, 'the two men' (lit.'man-the two')

horo-ko, 'the men' (lit.'man-they')

Inanimate noun stems need not take the number suffixes; the stem alone expresses the singular, dual, and plural of inanimate nouns.

daru, 'tree; the two trees; the trees'

However, Class #2 nouns may take dual and plural endings may be used:

a) In order to emphasize the dual or plural aspect

b) -ko, 'plural', is frequently used in enumerations, and is suffixed to each of the objects in the whole series enumerated,thus

daru-ko, diri-ko, mad-ko, 'trees and stones and bamboo....'

c) -ko, with the meaning of 'etc', is affixed to the last member of a series enumerated, especially series enumerating parts of the body.

Idiomatic Uses of the dual and plural with animate nouns are:

a) The dual form is used when speaking to a married woman to include her married partner. The use of the singular would be considered rude.

b) The dual form is likewise used by the married woman in refering to herself. Her use of the singular form would be considered improper.

c) The plural form is used by a man speaking of his own wife.kuri-ko.

d) The plural form is used by a man speaking of his whole family, even if his family is only his wife. e.g.ora'renko,'the family'

2. NOUN CASE INFLECTIONS

Noun case inflections are suffixes which are added to the noun stem immediately following the number suffixes, and transform the noun for adjectival or adverbial use. Nouns without case inflections are nouns in the direct case; nouns with case inflection are nouns in the oblique case. Nouns in the oblique cases are either in the genitive case, and act as adjectivals, or are in one of the oblique adverbial cases, expressing time, place, manner or purpose. The place of the case suffixes in the formula for noun formations is as follows:

Noun = (Stem + Gender) + (Number) + (Case)

2.A. THE ADJECTIVAL CASES

Adjectival cases are those cases in which the noun is transformed by a genitive case ending into an adjectival. There are two kinds of genitive case endings, a simple genitive, and a locative-based form:

(a) The simple genitive is represented by the suffixes -a' and -ra'. These genitives are used to express possession and partitive genitive. The choice of suffix depends upon the stem to which the suffix is fixed; there is no concord with the following noun which it modifies.

(b) The locative-based genitives are the suffixes -taren,-ren,rea',-ten. They express association,place,age,price,dimension,material.The suffix is independent of its stem,but in concord with the noun modified.

1. Possession: Marked by the suffix -a', 'of; belong to'.(MG.86-89)
The suffix -a' is attached to animate stems only, denoting possession; there is no corresponding form for inanimate stems. There is no concord with the following noun, which may be either animate or inanimate.

Adjectival Form	Governing Noun
Animate Noun + -a'	Any noun, animate or inanimate
Samua' honko,	'Samu's children'
Samua' ora',	'Samu's house/ houses'

The suffix -a' is also suffixed to the personal, demonstrative, indefinite and interogative pronouns to form regular possessive adjectives. These possessives and their alternatives are explained under pronouns.

2. Partitives:Marked by the suffixes -a',-ra','of; part of'(MG.90)
The suffix -a' is attached only to animate stems, the suffix -ra' is is attached only to inanimate stems. There is no concord with the following noun, which may be either animate or inanimate.

Adjectival Form	Governing Noun
Animate noun + -a'	Any noun, animate or inanimate
Inanimate noun +-ra'	Any noun, animate or inanimate
sadoma' bo',	'the head of a horse'
darura' koto,	'the branch of a tree'

The partitive genitives in -a' and -ra' may be replaced by using the two nouns as a single noun compound, as explained under 1.A.c (q.v.)

sadom-bo'	'horse's head'
daru-koto	'the tree's branch'

3. Association: Marked by the suffixes -taren, -ren, 'of; near,about' The suffixes -taren, -ren may be attached to any noun stem, but the final -n denotes concord with the governing noun,which must be animate. The forms -tare,-re are regular locatives, and -n an adjectivizing suffix -taren expresses constant attendance, and is used of servants primarily but also of one's children, family or even cattle. -ren expresses a closer relationship and is used of one's wife,family, children.(MG.89)

Adjectival Form	Governing Noun
Any noun + -taren	Animate Noun,esp.servants
Any noun + -ren	Animate Noun, esp one's wife
Samutaren dasiko,	'the servants of Samu'
Samuren kuri,	'the wife of Samu'

The adjectives in -taren and -ren may be nominalized by the pronominal suffixes -i', -king, -ko, to form singular,dual,plural pronouns(MG.94)

raja-taren-i',	'the servant of the king'
Samu-taren-ko	'the servants of Samu'
Samu-ren-ko,	'the family of Samu'
Samu-ren-i',	'the wife of Samu'

4. Description: Marked by the suffixes -ren, -rea', 'of; in'(MG.90) The suffixes -ren, -rea' may be attached to any noun stems, but the final -n denotes concord with animate nouns, and final -a' denotes concord with inanimate nouns. The form -re is a regular locative case ending, and the forms -n, -a' are adjectivizing suffixes. They are used as descriptive genitives of place, age, price, dimension,and material.

Adjectival Form	Governing Noun
Any noun + -ren	Animate noun only
Any noun + -rea'	Inanimate noun only
bir-ren jontuko,	'animals of the forest'
bir-rea' daru,	'trees of the forest'

The descriptive adjective in -ren, particularly when attached to stems denoting places, can be nominalized by the suffixes: -i', -king, -ko, to form singular, dual, and plural pronouns refering to place.(MG.96)

hatu-ren-ko,	'the people of the village'
ora-ren-king,	'the two in the house'
Ranchi-ren-i',	'the one from Ranchi'

With proper nouns denoting places, the suffix -ren is often omitted in the dual and plural,thus Ranchi-king,Ranchi-ko, for Ranchi-ren-king,etc.

5. Instrumentals; Marked by the suffix -ten, 'by,with'(MG.33,188). The suffix -ten is formed from the instrumental case suffix, -te, and an adjectivizing suffix -n, which marks concord with an animate noun. This suffix is found with such forms as nutum,'name'; umbul, 'shadow'; rup, 'shape'. The form is preceded by a specifing noun, and following by an animate governing noun. The three nouns occur in sequence as follows:

Specifier	Adjectival Form	Governing noun
Any noun	Any noun + ten	Animate noun only
Samu nutum-ten horo,		'a man by the name of Samu'

As in the cases with -taren and -ren, the governing noun may be replaced by the pronominals,-i',-king,-ko: Samu nutumteni','one named Samu'.

2.B. THE ADVERBIAL CASES

Adverbial cases are those cases in which the noun is transformed by an oblique case ending into an adverbial. Although adverbials on the clause level include adverbs of time,place, manner and purpose, as responses to the questions when? where? why? and how? all of these are not represented on the word level. As case inflections, adverbial suffixes are of two kinds, locative and modal. The locative suffixes are used for both time and place, the modals for manner and purpose.

(a) The locative case suffixes are built up out of six morphemes, -re,'in'; -te,'to'; -ete,'from'; ta',sa','near';-ko,'somewhere' These morphemes are grouped into three slot positions, as follows:

Locative #1	Locative #2	Locative #3
-ta'	-ko	-re
-sa'		-te
		-ete

If Ø is possible in each of the three slots, then we have a matrix of 3 x 2 x 4 = 24 possible locative forms. However, there are restrictions on the particle -ko which limit this matrix to 18 forms,with one ØØØ.

(1) -ko is never final, therefore -ko, -ta'ko, -sa'ko do not occur.

(2) -ko does not occur with -ete,excluding -koete,-ta'koete,-sa'koete.

Locative Forms:	-re	-te	-ete	-kore	-kote
-ta'	-ta're	-ta'te	-ta'ete	-ta'kore	-ta'kote
-sa'	-sa're	-sa'te	-sa'ete	-sa'kore	-sa'kote

1. Locative Case: Marked by the following 17 suffix combinations:

-re,	'in, at, on'	exactly at a point
-te,	'to'	exactly to a point
-ete,	'from'	exactly from a point
-kore,	'somewhere in'	vague place in which
-kote,	'about up to'	vague place to which
-ta',	'near'	near proximity
-ta're,	'near'	almost at a point
-ta'te,	'to near'	almost to a point
-ta'ete,	'from near'	almost from a point
-ta'kore,	'somewhere near'	close proximity,vague place
-ta'kote,	'to somewhere near',	close proximity,vague place
-sa',	'near'	near/far proximity
-sa're,	'near'	proximity at a point
-sa'te,	'to near'	proximity to a point
-sa'ete,	'from near'	proximity from a point
-sa'kore,	'somewhere near'	proximity, vague place
-sa'kote,	'to somewhere near'	proximity, vague place

The forms -kore, -kote are limited in their distribution to the forms:

a) Demonstratives: ne-, neta'-, nesa'-, han-, hanta'-, hansa'-
.en-, enta'-, ensa'-,

b) Indefinites: jeta-, jata'-,
soben-, sobenta'-, sobensa'-

c) Adverbials: cetan-, suba-, sirma-, latar-, etc.

Some restrictions on the uses of the locative are as follows:

(a) Nouns or pronouns connoting places show a contrast between the definite locatives, -re,-te,-ete and the indefinites with -ta',-sa'.

bir-te, 'to the forest' bir-ta'te,'towards the forest'

(b) Nouns or pronouns connoting persons do not show this contrast. The definite forms -te,-ete denoting motion to or from do not occur with personal nouns. This spacial exactness is excluded with personal nouns.

Samu-ta'te,'to Samu' never *Samu-te

Aing-ta'ete,'from me' never *aing-ete

(c) The form -ete occurs,however, with personal nouns, with the verbs nam,'receive'; kiring,'buy'; and their synonyms,to indicate persons.

Aing-ete-ko namkeda, 'they received it from me'

2. Temporals: The locative suffixes are used of time as well as place.

-re,'in,at,on' is used for action at a given point of time

-te,'to,towards' is used for motion towards a point in time.

-ete,'from' is used for motion from a point in time.

munu, ns,'beginning' munu-re, in the beginning'

tising,ns, 'today' tising-ete,'from today'

These forms are identical with locatives. They are recognized as forms which are functionally different by their co-occurence, in the same slot, with such temporals as: -sing,-ma,'day'; -sa,-duang,'times'; phrases with jaked,'until'; imtang,'then', and the unmarked temporal adverbs, which all act as responses to ciula?,'when'; cimtang,'at what time?"

(b) The Modal Cases are the non-locative inflectional cases of nouns. These include the instrumentals -te, -a' horate, accompaniment, marked by -lo','with'; begar ....-te, 'without'; manner marked by -leka,'like' and purpose, marked by -mente,'for'.

1. Instrumental Case: Marked by the suffixes -té, -a' horate (MG.91)

The suffix $-te_2$ (MG.36) is to be distinguished from locative $-te_1$

Locative $-te_1$ is used with nouns and pronouns of place, denoting motion to or towards a place; it occurs in the form -ta'te with persons.

Instrumental $-te_2$ is used with nouns not denoting places to indicate

(a) Instrumentality: $-te_2$, 'by,for,with; by means of' (MG.36)

(b) Causality: $-te_2$, 'for, with, through; because of'(MG.37)

sadom-te, 'on horseback'

rasika-te 'with pleasure; joyfully'

The suffix $-te_2$ occurs only with inanimate stems and with animate stems refering to impersonal animals or objects. For personal animate stems, the compound suffix -a' hora-te is used. This is formed from the genitive -a','of', the noun hora,'way',and instrumental -te, and means 'by way of'

uriko-te, 'with the help of bullocks'

gomke-a' horate, 'with the help of the master'

2. Accompaniment: Marked by the suffixes -lo','with';begar..-te,'without'

The suffix -lo','with' is used for accompaniment in space, or for(MG.38) temporal simultaneity; in this latter use, it is suffixed to participles. The suffix -sam,'with'(Sk.) is used in place of -lo',exc.in time phrases. This form is often prefixed as in Sanskrit,rather than suffixed(MG.61)

Samu-lo', 'with Samu'

daru red'-sam, 'a tree with its roots'

sam-losod', 'with mud; muddied'

The free form begar, 'without' is used as the opposite of -lo'. The noun governed may or may not have the instrumental -te suffix.(MG.61)

begar hake-te, 'without an axe'

begar hake, 'without an axe'

3. Manner: Marked by the suffixes: -leka,(-lekate),'like' (Eng.-ly)

The suffix -leka (MG.77) is added to Nouns, to Personal, Demonstrative, Indefinite and Interrogative pronouns, to adverbs of time,and participles.

cileka? cilekate? 'like what; how?;in what way?

Samu-leka, Samu-lekate, 'like Samu'

This suffix is also used with verb stems, which are infinitive forms,or verbal nouns, particularly with passive forms acting as abstract nouns.

aium, tvs, 'hear' aiumo', passive,'be heard'

aiumo'lekate, 'like being heard; audibly'

4. Purpose: Marked by the postposition, mente,'for;on behalf of'

The forms mente, nagen, nagente (MG.61,63) seem to be free forms rather than inflections. As such,they are not cases, but phrase markers. But -mente is found as a suffix in the following demonstrative forms:(MG.81)

enamente, ena mente, 'for that reason'therefore'

neamente, nea mente, 'for this reason'

cikana-mente?, 'for what reason; why?' (EM.848)

cia'mente, cina'mente?, 'for what reason'why?'

3. PRONOUN CONSTRUCTION

A pronoun is a form which substitutes for a noun in syntax. It consists of a pronominal base, joined to a person-number pronominal suffix. There is one suffix to represent all inanimate nouns; and there are 11 pronominal suffixes to distinguish, first person inclusive, first person exclusive, second and third persons, in singular,dual and plural.

Pronoun = Pronominal Base + Pronominal Suffix

The resulting pronoun is a noun substitute or nominal, already marked for person, gender and number, which may be further inflected for case.

3.A. PERSONAL PRONOUNS

Personal Pronouns are free forms which consists of a personal pronoun base, a-, and the pronominal suffixes. Only the personal base takes the full range of pronominal suffixes, which distinguish:

a) Gender: 11 animate forms and 1 inanimate form

b) Person: first person inclusive and exclusive,second,third person.

c) Number: singular, dual, and plural number.

Personal Pronouns	Singular	Dual	Plural	Inanimate
1st Person Incl.	(Base: a-)	a-lang,'we'	a-bu.'we'	-----
1st Person Excl.	a-ing,'I'	a-ling,'we'	a-le,'we'	-----
2nd Person	a-m,'you'	a-ben,'you'	a-pe,'you'	-----
3rd Person	a-e,'he/she'	a-king,'both'	a-ko,'they'	a',it'

Personal pronouns have ,therefore,both free and bound forms.

a) The free form personal pronouns consist of a base a- and the personal pronominal suffixes. These free form pronouns substitute for nouns, take all of the regular case suffixes, both adjectival and adverbial.

b) The bound form of the personal pronouns is the pronominal suffix alone without the pronominal base a-. These forms occur as formative elements in the formation of all pronouns, personal or otherwise, and are used in the verbal system, both as infixed objects, and as subjects.

The pronominal suffixes undergo certain phonetic changes in usage within the nominal and verbal systems, as follows: (MG.14-15)

a) The first person, -ing,'I',

1.Has an allomorph -ng, when suffixed to the vowel -e.

Ranchite-ing senkena, 'I went to Ranchi'

2,Has an allomorph -iñ, when -a' immediately follows.

aiña' ora', 'my house'

b) The second person, -m,'you'(sg)

1.Has an allomorph -em, when suffixed to a consonant

loyong-em kiringkeda, 'you bought the field'

2.Has an allomorph,-me, when acting as subject of the verb

(a) In the imperative mood, exc.after -ko,-ko',-le

(b) As subject with -tan, mena', bano'.

c) The third person, -e,'he/she' has an allomorph -i'

(a) with other pronouns,(b)as object;(c)as Subj.with -tan.

3.B. OTHER PRONOMINALS

All other pronominals except the personal pronouns are limited to the third person. Therefore, they have not 12, but only 4 forms; the animate singular, dual and plural forms, and the inanimate form. These pronouns are classified, according to the base upon which they are formed, into Demonstrative, Indefinite, and Interrogative Pronouns. These bases are all adjectival, and further pronominal forms may be constructed by using the suffixes -i', -king, -ko, -a' with adjectives.

Non-personal Pronouns = Adjective + i'/king/ko/a'

1. Demonstrative Pronouns: These are pronouns formed from the demonstrative adjectives: ne,'this'; en,'that'; han,'that yonder'.In the formation of the first two sets of demonstratives with ne and en, the stem first becomes ni and in by regressive assimilation, and the plural then becomes -ku instead of -ko by progressive assimilation.

Demonstratives	Anim.Sg.	Anim.dual	Anim.Pl.	Inanimate
dem.1. ne-	ni'	niking,	niku,	nea'
dem.2. en-	ini'	inking,	inku,	ena'
dem.3 han-	hani',	hanking,	hanko,	hana'

These demonstratives are in very common use, and often replace the personal pronouns,of the third person. The form ne refers to something near the first person or speaker; the form en and its derivatives to someone near the hearer; and the form han to some one distant from both.

2. Indefinite Pronouns: These are pronouns formed from the indefinite adjectives, oko,'some'; eta',"other'; ja,'any'; jeta,'some'.(MG.28-29) The indefinites take a double formation, one with the personal suffixes -e,(for -i'), -king, and -ko, and a second formation which includes a demonstrative root,-n-, in forms similar to the demonstrative pronouns.

Indefinites	Anim.Sg.	Anim.Dl.	Anim.Pl.	Inanimate
Indef.1, oko-	oko-e	oko-king	oko-ko	oko-a'
+ dem.	oko-ni'	-----	-----	-----
Indef.2, eta'-	-----	eta'king	eta'ko	eta'ga
+ dem.	eta'ni'	-----	-----	-----
Indef.3, ja-	ja-e-ge	ja-king	ja-ko	-----
+ dem.	ja-ni'	ja-n-king	ja-n-ko	ja-na'
Indef.4, jeta-	jeta-e	jeta-king	jeta-ko	jeta'
+ dem.	jeta-ni'	jeta-n-king	jeta-n-ko	jeta-na'

The duals and plurals listed are rare, except for eta'king and eta'ko. The forms jaege, jani','anybody', and jetae, jetani','somebody'are used as plurals; okoe is repeated as a plural: okoe okoe,'somebody(pl)'

3. Interrogative Pronouns: These are pronouns formed from interrogative adjectives, oko,'what?'; cikan,'what?'; cilekan,'what kind?'(MG.30-31)

Interrogatives	Anim.Sg.	Anim.Dl.	Anim.Pl.	Inanimate
Quest.1, oko-	oko-e?	oko-te-king?	oko-te-ko?	-----
+ dem.	oko-ni'?	oko-n-king?	oko-n-ko?	oko-nea?
Quest.2, cikan-	cikan-i'?	cikan-king?	cikan-ko?	cikan-a?
Quest.3, cilekan-	cilekani'?	cilekanking?	cilekanko?	cilekana?

4. PRONOUN CASE INFLECTION

Pronoun case inflections are the ordinary noun case suffixes applied to pronouns. The addition of the adjectival case inflections to pronouns produces pronominal adjectives, the addition of the adverbial case inflections to the pronouns produces pronominal adverbs. These are further classified, according to their base form, into Personal, Demonstrative, Indefinite and Interrogative Adjectives and Adverbs.

Oblique Pronoun = (Base + Pron.Suffix) + (Case)

4.A. PRONOMINAL ADJECTIVES

Pronominal Adjectives are pronouns with a genitive case suffix. These suffixes are -a', -ra', and the locative based -taren, -ren, -rea'. They occur with Personal, Demonstrative, Indefinite, Interrogative forms.

a) Personal Pronominal Adjectives: The animate personal pronouns have a genitive in -a' which acts as a possessive or partitive adjective. They also have a genitive in -taren, and -ren when followed by nouns denoting servants, family, children or constant associates. (MG.98,90)

Poss.Adj.	Anim.Sg.	Anim.Dl.	Anim.Pl.
1st Pers.Incl.	(Base: a-)	alanga', our	abua', our
1st Pers.Excl.	aiña', mine	alinga', our	alea', our
2nd Pers.	ama', your	abena', your	apea', your
3rd.Pers.	aea', his/her	akinga', their	akoa', their

Possesed Nouns are formed by a transformation in which the free form possessive adjective is transformed into a bound form possessive suffix. In this bound form, the possessive marker -a' is replaced by -ta, and the pronoun preceding -a' is replaced by a pronominal following -ta.

Free Possessive + Noun = Noun + Bound Possessive

Pronoun + -a' + Noun = Noun + -ta + Pronominal

-aing-a', 'ora' = ora'-ta-ing, 'my house'

The resulting forms are a set of possessive suffixes formed from the possessive infix -ta- and the pronominal suffixes. (MG.98-101)

Poss.Suffix	Anim.Sg.	Anim.Dl.	Anim.Pl.
1st Pers.Incl	(Base: Any noun)	-talang, our	-tabu, our
1st Pers.Excl.	-taing, my	-taling, our	-tale, our
2nd Pers.	-tam, your	-taben, your	-tape, your
3rd Pers.	-tae, his/her	-taking, their	-tako, their

Possessed Nouns denoting family relationships take a different set of possessive suffixes in this transformation. This set is suffixed to such nouns as apu,'father', enga,'mother', hon,'child'. In the second person -m is suffixed to vowel-final stems, -me suffixed to consonants.

Poss.Suffix	Anim.Sg.	Anim.Dl.	Anim.Pl.
1st Pers.Incl	(Family Nouns)	- Ø -talang,our	- Ø -tabu,our
1st Pers.Excl.	-ing, my	-ing-taling,our	-ing-tale,our
2nd Pers.	-m,-me,your	-m(e)taben,your	-m(e)tape,your
3rd.Pers.	-te, his/her	-(te)taking,their	-(te)tako,their

b) Demonstrative Pronominal Adjectives: The animate demonstrative pronouns, ni','this one'; ini', 'that one'; hani','that one yonder' take the genitive endings, -a', and the locative based -taren, -ren, -rea'.

Dem.Possessive	Anim.Sg.	Anim.Dl.	Anim.Pl.
dem.1, ne-	ni'-a'	niking-a'	niku-a'
dem.2, en-	ini'-a'	inking-a'	inku-a'
dem.3, han-	hani'-a'	hanking-a'	hanko-a'

These forms often replace the personal forms, aea', akinga', akoa'(q.v.) The inanimate pronouns, both personal and demonstrative, also take the genitive case endings, but the personal inanimate a'ra','its' is rare. The inanimate is represented by the genitive of the demonstrative:

Inan.Poss.	nea'ra',	ena'ra',	hana'ra','it's'.
	nea'rea',	ena'rea',	hana'rea',

c) Indefinite and Interrogative Pronouns are formed in the same way.

'somebody's'	okoea'/okoni'a'	okokinga'	okokoa'
'another's'	eta'ni'a'	eta'kinga'	eta'koa'
'anybody's'	jaea'	jakinga'	jakoa'
	jani'a'	jankinga'	jankoa'
'somebody's'	jetaea'	jetakinga'	jetakoa'
	jetani'a'	jetankinga'	jetankoa'
'whose?'	okoea'?	okotekinga'?	okotekoa'?
	okoni'a'?	okonkinga'?	okonkoa'?
'of what?'	cikani'a'?	cikankinga'?	cikankoa'?
	cilekani'a?	cilekankinga'?	cilekankoa?

4.B. PRONOMINAL ADVERBIALS

Pronominal adverbials are pronouns with an oblique case ending. These include all of the personal, demonstrative, indefinite and interogative pronouns, with the regular noun case endings except the genitive. They are regular and are formed according to the formula:

Oblique Pronoun = (Base + Pron.Suffix) + (Case)

In constructing paradigms for the oblique case endings, the following features of inflection should be kept in mind. In general, all of the personal, demonstrative, indefinite and interrogative pronouns can be lined up with all of the oblique cases, locative, instrumentals,etc.

a) Personal Pronouns: The 11 animate pronouns occur with all oblique case endings. The inanimate pronoun however, as with the genitive case, is usually replaced by one of the three demonstratives,nea',ena',hana'.

nea're, 'in it' never *a'-re

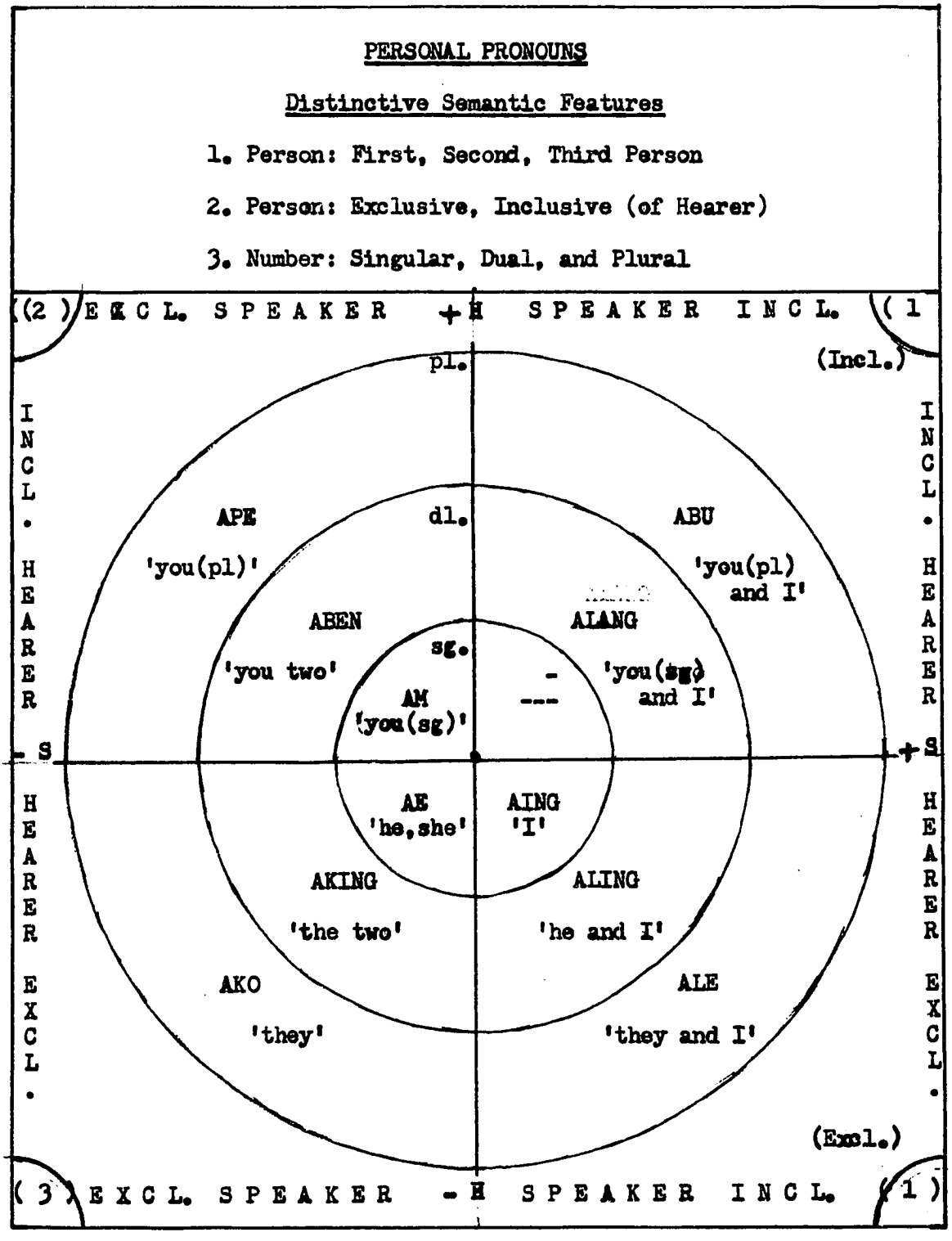
b) Demonstrative, Indefinite and Interrogative Pronouns have a form based on these stems, to which the case ending is added directly. These forms do not have the pronominal suffixes, and are true adverbs.

Adverb (Dem/Indef/Interr) = Adj.Base + Case

These forms will be treated separately under adverbs, and are not included here, because they lack the pronominal suffix, and are not true pronouns. However, In this formation, the adjective taking the case ending acts as a nominal, and the resulting form can have a noun antecedent.

nea'-re, 'in it' ne-re,'in this place; here'

OBLIQUE CASE PARADIGM FOR PRONOUNS				
1. Personal Pronouns				Locative Case
aing,	alang,	abu,		-re
	aling,	ale		-te
am,	aben,	ape,		-ete
ae,	aking,	ako,	-----	-ta'
2. Demonstrative Pronouns				-ta're
ni',	niking,	niku,	nea'	-ta'te
ini',	inking,	inku,	ena'	-ta'ete
hani',	hanking,	hanko,	hana'	-sa'
3. Indefinite Pronouns				-sa're
okoe,	okoking	okoko,	okoa'	-sa'te
okoni',	-----	-----	-----	-sa'ete
-----	eta'king	eta'ko	eta'ga	Instrumental Case
eta'ni',	------	-----	-----	$-te_2$
jae-,(ge)	jaking,	jako,	-----	-a' horate
jani',	janking,	janko,	jana'	Accompaniment
jetae,	jetaking	jetako,	jeta'	-lo'(-sam)
jetani'	jetanking	jetanko,	jetana'	begar...(-te)
4. Interrogative Pronouns				Manner Adverbial
okoe?	okoteking?	okoteko?	-----	-leka(+te)
okoni'?	okonking?	okonko?	okonea?	Final Adverbial
cikani'?	cikanking?	cikanko?	cikana?	-mente
cilekani'?	cilekanking?	cilekanko?	cilekana?	-nagen(+te)



2

THE MUNDARI VERB SYSTEM

The Mundari verb system consists of verb forms built upon verb stems, just as the noun system consisted of nominal forms built upon noun stems. As with the noun system, the Mundari verb forms must be recognized as they occur in actual discourse. A stem is listed as a noun stem if it regularly takes the formative elements proper to a noun, namely, gender, number and case. A stem is listed as a verb stem if it regularly takes the formative elements proper to a verb, namely, voice, tense and mood.

The formative elements of the Mundari verb are grouped into three affix clusters. The first cluster includes the root or roots together with voice. These forms are stems or infinitive forms, and act as verbal nouns. The second cluster includes tense markers and pronominal objects. These forms are participles or non finite forms, and act as verbal adjectives. The third cluster includes mood markers and pronominal subjects. These forms are finite verb forms, and are the center of every Mundari utterance, a clause-in-miniature.

Verb Stem = (Root + Voice)

Participle = (Root + Voice) + (Tense + Object)

Finite Form = (Root + Voice) + (Tense + Object) + (Mood + Subject)

The Mundari verb system is considered under these headings:

(1) Verb Stem Construction: Verb stems are forms which have voice, and may be inflected for tense and mood. These verb stems may be simple, derived or compound. In certain tenses, stem suffixes indicate whether the verb stem belongs to the active, middle, or passive voice.

(2) Participle Construction: Participles are verbal adjectives which consist of a verb stem together with its tense marker and pronominal object. These objects may be indirect or direct, and are infixed into the verb form whenever the verb is transitive.

(3) Finite Verb Construction: Finite verb forms are single word forms consisting of a participle, to which a mood marker and pronominal subject has been added. These finite verb forms may belong to the Indicative, the imperative, or the optative mood.

(4) Irregular Verb Forms: The finite verb forms regularly take their mood and subject suffixes in a fixed order. Any verb form whose mood and subject suffixes occur in some other order, are considered to be irregular verbs. Such verbs are the forms with mena','to be', and bano','not to be'; other irregularities also occur in the verb system.

To insist upon the regularity of the Mundari verb form is not to deny the "functional elasticity" of Mundari words. Admittedly, any word, even a full utterance, may act as a verb stem. But that form will be recognized as a verb form because of the typical verb-formative elements which occur as suffixes, by analogy with regular verbs.

The definition of Mundari verb forms is made difficult by the presence of zeros in the verbal spectrum. The active voice, the future or indeterminate tense, and the imperative mood are unmarked. These are silences that must be heard. The analyst is faced with a dilemna: Either the slot in which these suffixes occur is marked as optional, and the impression is given that verbs occur without voice, tense or mood; or, the slot is marked as an obligatory slot, filled by overt morphemes alternating with a zero morpheme. The same problem occurs in any language, whenever a marked form is in contrast to an unmarked form. Should the form 'boys' be interpreted with <u>optional plural</u>,

$$\text{noun} = \text{n.nuc.}: \text{ns} \overset{+}{-} \text{pl} : -\text{s}$$

or, as a noun nucleus, filled by noun stem, plus <u>obligatory number</u>,

$$\text{noun} = \text{n.nuc.}: \text{ns} + \text{num} : -\emptyset/-\text{s}$$

The second formulation brings out the fact that <u>number</u> is one of those categories which <u>must</u> be expressed, even when it is unmarked. The unmarked form expresses the singular, the marked form the plural.

The procedure followed here is to use the zero marker whenever an unmarked form appears in opposition to a marked form in the same category. Zero morpheme is to be read as "the unmarked case" which appears in contrast with the cases which are marked. Only in this way can the full set of oppositions be conveniently categorized. An optional slot, consequently, is a slot that is NOT characterized by an unmarked opposition in the same category.

1. VERB STEM CONSTRUCTION

A verb stem is a form inflected for voice, which may be also further inflected for tense and mood. Stems are listed in the lexicon as transitive or intransitive. Transitive stems may occur with objects, intransitive stems may not occur with objects. Transitive stems occur in the active,middle and passive voice; intransitive stems are active.

Verb Stem = (Root + Voice)

1.A. VERB STEMS

Verb stems have a base which may be a root, a modified root, or a root combination. Stems are classified as simple,derived,compound.

a) Simple Stems: Stems which consist of a single root morpheme.

lel, tvs, 'see'	sen, ivs, 'go'
om, tvs, 'give'	hiju',ivs, 'come'

b) Derived Stems: Stems which consist of a root plus an affix. Stem modifications are prefixes and infixes. Suffixes denote voice.

(1) Prefixes: The only stem modification prefix is reduplication(R-). First, with consonant initial stems, the stem is reduplicated by the repetition of the initial CV- of the verb root. Thus,

dal, tvs, 'strike'	dadal, 'strike repeatedly'
sen, ivs, 'go,walk'	sesen, 'begin to walk'

Second, with vowel initial stems, reduplication is replaced by the

lengthening of the initial vowel. Words beginning with the aspirate onset consonant /h/ are reduplicated in the same way:

aium, tvs, 'hear' āium, 'hear repeatedly'

hiju', ivs, 'come' hīju', 'come repeatedly'

This second method of reduplication is sometimes used alternately with consonant stems which can take the CV- reduplication:

dal, tvs, 'strike' dāl, dadal, 'strike repeatedly'

Some consonant initial stems never take the CV- reduplication; they may have an alternate verb form which replaces reduplication:

jagar, ivs, 'converse' jāgar, (never *ja-jagar)

sī, tvs, 'plough' siu', (never*si-si)

Reduplication (MG.182-183) denotes either repeated, customary, and habitual actions, or attempted, intended or successful beginnings.

(2) Infixes: One of two infixes may occur within the verb root. First, the infix /-n-/, transforms the verb root into an abstract inanimate noun stem, which is no longer capable of verb inflection.

dal, tvs, 'strike' danal, i.n., 'a blow'

Nominalization (MG.xv,108) occurs with some verbs and some adjectives. Second, the infix /-p-/, is used with transitive verb roots only, to denote reciprocal action, or mutual action of the subjects. Reciprocals (MG.157-160) only occur with dual and plural subjects, but may occur in both the active and the passive voices.

lel, tvs, 'see' lepel, 'see each other'

dal, tvs, 'strike' dapal, 'strike each other'

c) Compound Stems: Stems which consist of more than one root are called compound stems. These compounds may consist of two verb roots, or of a verb root and an adverbial modifier. (MG.188-200)

(1) Verb + Adverb: In these compounds, the verb root stands first as head of the construction, and the adverbial root stands second. Since adverbs can also be used as verb stems without compounding, the construction in practice is limited to a few adverbs, such as

aiar, 'ahead'	-tab, -ba, 'quickly'
sida, 'first'	-bara, 'here and there'
parom, 'across'	bes, 'well'

The forms -tab, -ba, and -bara, are bound forms which occur only in compounds. Examples of adverbial compounds are as follows:

lel, 'see' + aiar,	lel-aiar, 'see ahead'
sen, 'go' + -bara,	sen-bara, 'go here and there'

(2) Verb + Verb: In these compounds, the first verb which occurs is a modifier, and the second verb is the head of the construction. The first verb may be interpreted as a direct object of the second, if the second is transitive, as a modal modifying the second verb, whether that verb is transitive or intransitive, or as a coordinate action which is prior to the action of the main verb. An idiomatic translation may require that the main verb be translated as an adverb.

bulo','be drunk' + durum,sleep

bul-durumo', 'being drunk,to fall asleep'

kaji,'say' + ruar,'return' kaji-ruar, 'say again; repeat'

Examples of Compound Verb Stems

(a) With the first verb root as direct object:

bage,'abandon'	si-bage,'neglect plouging'
au, 'bring,take'	lel-au, 'bring word'(having seen)
caba,'finish'	ol-caba, 'finish writing'
ete', 'begin'	inung-ete', 'begin playing'
hoka, 'stop'	ol-hoka, 'stop writing'
idi, 'take'	ol-idi, 'continue writing'(take on)
rika, 'cause'	hiju'-rika, 'cause to come'
ruar, 'bring back'	kaji-ruar, "say again; reply'

(b) With the first verb root as a modal:

bage, 'abandon'	nir-bage,'abandon by running away'
bai, 'make'	lel-bai, 'look carefully'
hundi, 'gather'	ol-hundi, 'write a lot'
la', 'exceed'	jom-la', 'exceed in eating'
parci, 'clean'	riring-parci, 'forget entirely'
pere', 'fill'	dub-pere', 'fill by sitting'
sare','leave over'	jom-sare', 'neglect to eat'
-urum, 'recognize'	lel-urum, 'recognize by seeing'

Note 1: The form -urum, 'recognize' is only used in verbal compounds, and must be associated with the particular sense word needed,such as lel, 'see'; aium, 'hear'; soan, 'smell'; jom, 'taste'; capu,'touch'.

Note 2: The free form rika, 'cause' has two alternates,-iri, -ici, which are bound forms only occuring in verbal compounds.

1.B. VOICE MARKERS

Voice markers are suffixes added directly to the verb root. The active voice is unmarked, in contrast with the middle and passive. First, the suffix -en is used with transitive roots to denote the middle voice (MG.155-157). This is also called a reflexive voice. The marker also occurs with intransitive stems used transitively.

lel, tvs, 'see' — lelen, 'see oneself'

nir, ivs, 'run' — niren, 'take oneself at a run'

Second, the suffix -o' is used with transitive roots to denote the passive voice (MG.152-155). This marker also occurs with intransitive stems used transitively,or,in the future tense,denoting possibility.

lel, tvs, 'see' — lelo', 'be seen'

sen, ivs, 'go' — seno', 'go the distance'

The following phonetic changes occur with the passive in -o':

Rule #1: Stems with checked final vowel have an allomorph ending in -g which is used whenever the suffix -o' is added to the stem:(MG.152)

re', tvs, 'rob' — rego', 'be robbed'

pere',tvs, 'fill' — pereo', perego', 'be filled'

Rule #2: Passive -o' has an allomorph -u' after high front vocoid.

kaji, tvs, 'say' — kajio', kajiu', 'be said'

Rule #3: The Passive -o' and -u' have allomorphs -u,-o before -a.

kajio', 'be said' — kajioa, 'it is said'

kajiu', 'be said' — kajiua, 'it is said'

Examples of Modified Verb Stems

lel,'see' (EM,2638)

lel,	tva,	'see; examine'
	iva,	'see; understand'
lel-en,	tvm,	'see onself'
le-p-el,	recip.tva,	'see each other'
le-p-el-o'	recip.tvp,	'be seen by each other'
lel-o',	tvp,	'be seen'
le-lel	aj.s,	'open; conspicuous'

sen, 'go' (EM,3902)

sen,	iva,	'go, go away; start a journey;walk'
	tva,	'walk; go the distance'
se-n-en,	ns,	'the act of going; walking; the gait'
sen-en	tvm,	'take oneself; go; walk'
sen-o',	tvp,	'go; walk' (corr.to tva)
		'be able to go'
se-sen,	ivs,	'begin to walk; be able to walk'
se-sen-o'	tvp,	'become able to walk'

om,'give' (EM,1286)

om, em,	tvs,	'give; give in marriage'
om-en,	tvm,	'give oneself' (rare)
o-p-om,	recip.tva,	'give to each other'
om-o',	tvp.	'be given'
o-n-om,	ns,	'the act of giving; a gift'

Verb stem constructions have the following restrictions:

a) Reduplication does NOT co-occur with either the -n- infix or the -p- infix. Prefix excludes infix, and vica versa.

b) Nominalized stems with the -n- infix cease to be verb stems,and do not co-occur with any of the voice markers.

c) A reduplicated stem, or a reciprocal stem with the -p- infix, may co-occur with the passive marker -o', as in the forms,

lepelo', 'be seen by each other'

seseno', 'become able to go'

d) A reduplicated stem can occur with the middle marker -en, but the reciprocal stem in -p- can NOT occur with the middle marker -en.

dadalen, 'strike oneself repeatedly'

*dapalen, (untranslatable) Reciprocal excludes Middle Voice.

e) Reciprocals occur with compound predicates. The infix -p- made be used with both verb roots, if there are two, or with the main root.

ipir-repe', 'rob each other,by cutting each other's harvest'

nir-daparom,'meet each other, by running at each other'

from the stems ir,'reap'; re',rob'; darom,'meet'; nir,'run'

STEM LEVEL CONSTRUCTIONS				
Primary Roots		Stem Modifications		
Root #1	Root #2	Prefix	Infix	Suffix
Verb	Verb	R-	-p-	-o'
	Adverb		-n-	-en

SUMMARY: VERB STEM CONSTRUCTIONS

A Stem Level Construction in tagmemic analysis is defined as: "a construction composed potentially of two or more tagmemes whose manifesting morpheme sequence fills the nuclear slot of words." At stem level, the stems of words are analyzed into core slots filled by roots, and affix slots filled by derivational affixes that occur. Mundari verb stem constructions may be summarized in the formula:

$$vs = + c_1{:}vr \pm c_2{:}vr/avr \pm da_1{:}\ R\text{-}/\text{-}p\text{-} + da_2{:}\ voc.m.$$

Read: "A verb stem consists of an obligatory core slot filled by a verb root, an optional core slot filled by a verb or adverb root, an optional derivational affix slot filled by R- or -p-, and an obligatory affix slot filled by a voice marker."

One verb root must occur in the Mundari verb stem.

The second core slot either occurs or it does not;

If the second core slot does not occur,we have...One-Root-Stems

If the derivational affix does not occur, Simple Stem

If the derivational affix does occur, Derived Stem

If the second core slot does occur,we have.....Two-Root-Stems

If the derivational affix does not occur, Compound Stem

If the derivational affix does occur, Compound Derived

The voice marker is obligatory.

Either the stem is unmarked for voice, and is Active Stem

Or the stem is marked with -en, or -o',and is Middle/Passive

The tagmemic formulation expresses in a single formula the many possibilities of combinations in verb stem construction. If we count the number of fillers in each slot, including a ∅ for the non occurence of optional slots, and with the voice slot held constant, we can generate 1 x 3 x 3 x 1 = 9 possible stem combinations, namely:

A. Stems of One Root

1. Simple stems		vs = vr + -∅,-en,-o'
2. Derived Stems:	Reduplicated	vs = vr + R- + -∅.-en,-o'
	Reciprocal	vs = vr + -p- + -∅,-o'(no -en)

B. Stems of Two Verb Roots

1. Compound Stems		vs = vr + vr + -∅,-en,-o'
2. Compound Derived:	Reduplicated	vs = vr + vr + R- + -∅,-en,-o'
	Reciprocal	vs = vr + vr + -p- + -∅,-o'

C. Stems of Two roots, Verb and Adverb

1. Compound Stems		vs = vr + avr + -∅,-en,-o'
2. Compound Derived:	Reduplicated	vs = vr + avr + R- + -∅,-en,-o'
	Reciprocal	vs = vr + avr + -p- + -∅,-o'

The nine formulas given above exhaust the possibilities of stem formation in Mundari, and are summarized in the single formula on the preceding page. The only assumption made here is that the reduplication R- and the reciprocal -p- are mutually exclusive. There is no intrinsic reason why they could not cooccur; if such a cooccurence were found, it would increase the possibilities of stem formation from nine formulas to twelve. With this reservation, the above list is exhaustive.

2. PARTICIPLE CONSTRUCTION

A participle is a form consisting of a verb stem, inflected for voice and tense, together with optional pronominal objects. Participles act as verbal adjectives in their free form. With nominal case endings they function as adverbial adjuncts to the main clause or sentence. A transitive participle is a participle marked by an obligatory object slot which is filled by direct or indirect pronominal infixed objects. An intransitive participle is a participle which has no object slot, and which therefore never occurs with either direct or indirect object. All transitive and intransitive participles are expressed in the form:

Participle = (Stem + Voice) + (Tense ± object)

2.A. TENSE MARKERS

Tense markers are a set of formal elements proper to the verbal structure. They are compound markers which simultaneously indicate:

a) Aspect: the mode of the action of the main verb. This may be
   e.g. unspecified, static, anterior, indefinite
b) Tense: the time of action of the main verb. This may be
   present, past, or future.
c) Transitivity: The ability of the form to take pronominal objects.
   This may be transitive or intransitive.

The tense marker is a single form with these three distinctive features.

With regard to time, the Mundari verb forms distinguish the past, the present and the future. The future time is always unmarked, and this unmarked tense is used also as an indeterminate tense which is independent of time. Past time is marked by -ke and its variants, and present time is marked by -ta and its variants. Every tense marker except that of the simple unspecified future is overtly marked.

With regard to aspect, the Mundari verb forms distinguish the simple, static and anterior aspects in both past and future time. The simple or unspecified aspect is unmarked, and in contrast with the marked aspects. The static aspect is marked by -ta2 and indicates that the action occurs with a once-and-for-all finality whether in past or future time. The anterior aspect is marked by -le and shows that the action indicated in the verb form precedes another action in past or future time. The present time does not have these aspects. It distinguishes between an actual present, an action going on now, an indefinite or unspecified present, and a present perfect which expresses the present result of a past action. The indefinite aspect is marked by -ja, and the perfect -a.

With regard to transitivity, the Mundari verb forms distinguish between transitive and intransitive tense markers. The transitives are marked with -d^{a} pointing forward towards an object. The intransitives are marked by an -n, pointing back to the subject of the action.

(1) The Future Tenses:

There are three future tenses: the simple future, the static future, and the anterior future. In these tenses, the unspecified or simple aspect appects in contrast with the static aspect, marked by -ta, and the anterior aspect marked by -le. Future time is unmarked, and transitivity markers do not occur in the future tenses. The three future tenses may be characterized according to distinctive features:

TENSES	Aspect	+ Time	+ Trans.	= Tense mk.
1. Simple Future	ø	ø	ø	ø
2. Static Future	ta	ø	ø	TA
3. Anterior Future	le	ø	ø	LE

Future tense are used to express future time under 3 aspects. 1. The Simple Future refers to future time, unspecified as to aspect. It is the most widely used future form, and is formally distinct from the other futures in its ability to take marked indirect objects. This tense is also used as an indeterminate tense (MG.134) in propositions containing general truths, or refering to customary or habitual action. 2. The Static Future refers to future time, but adds the specification that the action that is to occur is a single once-and-for-all attempt. 3. The Anterior Future refers to an action in future time, but with the specification that this future action precede another such action. The static and anterior futures are always transitive.

(2) The Present Tenses:

There are three present tenses: the simple present, indefinite present, and continuous present. The simple present, both transitive and intransitive, is marked by -TAN. When used as a transitive marker, the infixed object precedes, rather than follows, the tense marker. The indefinite present is marked with -JAD. It occurs only with stems which are transitive. There is no indefinite intransitive. Continuous present tense is marked by -AKAD(GE), used with both transitive and intransitive stems. e.g. senakadgeae,'he keeps on walking'.[MG.143]. -AKAN(GE) is used with the intransitives tingun,'stand'; dub,'sit' giti,'lie down'; hapen,'be silent', and other verbs denoting rest.

TENSES	Aspect +	Time +	Trans. =	Tense Marker
1. Simple Present	ø	ta	-n	-TAN
2. Indefinite Present	ja	(ta)	-d	-JAD
3. Continuous Present	aka	(ta)	-d, -n	-AKAD,-AKAN

Present tenses are used to express present time. In intransitive forms, simple and continuous present are contrasted.In transitive forms, simple and continuous are further contrasted with the indefinite.

1. Simple present is used for action going on now;
2. Indefinite Present is used for present time in general;
3. Continuous Present is used for continuous present action.

e.g. lelkingtanaing,'I am now seeing the two', vs.leljadkingaing[MG.141]

(3) The Past Tenses:

There are five past tense: the simple past, the static past, the anterior past, the indefinite past, and the perfect. The past time is marked by -ke, aspects are marked by ∅ simple, -ta static, -le anterior, -ja indefinite, and -a perfect. Transitivity is marked by -d' or -n. The five past tense are characterized by distinctive features:

TENSES	Aspect +	Time +	Trans. =	Tense Markers
1. Simple Past	∅	ke	-d',-n	KED', KEN
2. Static Past	ta	(ke)	-d'	TAD'
3. Anterior Past	le	(ke)	-d', -n	LED', LEN
4. Indefinite Past	ja	(ke)	-n	JAN
5. Perfect Tense	a	ka	-d', -n	AKAD',AKAN

Past tenses are used to express past time under 5 aspects:

1. The simple past refers to past time, as simple and matter of fact.

2. The static past refers to past time, when the past action occurs with a once-and-for-all finality. It occurs only with transitive stems.

3. The Anterior past refers to past time,but specifies that the action occured before some other action in past time.

4. The Indefinite Past refers to past time. It replaces the simple past in narrations. With a small class of verbs,including sen,'go', hoka, 'stop',nir,run away,apir,±fly'it denotes acts begun and not ended.

5. The Perfect tense refers to the present effects of a past action.

2.B. PRONOMINAL OBJECTS

Pronominal objects are inserted into the participle directly after the transitive tense sign, when that sign is marked with -d'. In the single case in which -n is a transitivity marker, the simple present in -TAN, the pronominal objects precede the tense sign TAN. Pronominal objects may be classified in three groups:

a) Marked Indirect objects: Marked i.o. is a pronominal object that is marked as indirect object by a preceding -a, 'to,for'. Direct objects, unmarked by -a appear in the same tenses, same positions. Either the indirect object occurs,or the direct object,never both.

b) Direct Objects/ Unmarked Indirect objects: The symbol d.o./i.o. means that a pronominal object is inserted, unmarked as indirect, but which may be either a direct or an indirect object. These occur in tenses where the indirect object never takes the marker -a.

c) Direct Objects: The symbol d.o. is used to denote the objects in those tenses which never take an indirect object in any form. In these tenses, the statirs in -TA, and -TAD',the object is only direct.

Since there are 12 possible objects, every transitive tense has 12 possible forms. Eleven objects are animate pronouns, and one object, the inanimate, is generally marked by ∅. Only in the simple future does the inanimate object have an overt form,-e-. Inanimate indirect objects do not occur. Marked indirect objects generate 11 new tense forms.

TENSES	VOICE	OBJECTS	INDICATIVE	IMPERATIVE	OPTATIVE	IMPERFECTS
1. Simple Future	-en,-o'	Marked i.o.	∅ / ∅	∅ / ∅	∅ / ∅	∅ + taikena
2. Static Future	-----	No.i.o.	TA / ---	TA / ---	TA / ---	----------
3. Anterior Future	-----	d.o.= i.o.	LE /(KO')	LE /(KO')	LE /(KO')	----------
4. Simple Present	-en,-o'	Marked i.o.	TAN/ TAN	---------	---------	TAN+ taikena
5. Indefinite Present	-----	d.o.= i.o.	JAD/ ---	---------	---------	JAD+ taikena
6. Continuous Present	~~~~-	d.o.= i.o.	AKAD/---	AKA / AKA	AKA / AKA	AKAD+taikena
7. Simple Past	(KEN)	Marked i.o.	KED/ KEN	---------	---------	KED+ taikena KEN+ taikena
8. Static Past	-----	d.o.= i.o.	TAD/ ---	---------	---------	TAD+ taikena
9. Anterior Past	(LEN)	d.o.= i.o.	LED/ LEN	---------	---------	LED+ taikena LEN+ taikena
10. Indefinite Past	-----	No object	---/ JAN	---------	---------	----------
11. Perfect Past	(AKAN)	d.o.= i.o.	AKAD/AKAN	---------	---------	AKAD+taikena AKAN+taikena

3. FINITE VERB CONSTRUCTIONS

A finite verb is a form consisting of a verb stem, inflected for voice, tense and mood, together with its pronominal subject. Non-finite verb forms are forms which are not marked for subject. These include the verb stem inflected for voice, which is the verbal noun or infinite form, and the verb stem inflected for voice and tense, which is the verbal adjective or participle form.

Finite verb forms are participles which are marked for mood and for subject. Finite verb forms may be personal or impersonal. The impersonal form is a finite verb form in which the subject is inanimate and marked by -Ø. This form is used as the "citation form" in this text. The personal form is the finite verb form with a subject pronoun. In Mundari syntax, the overt subject pronoun is attached to the word which occurs immediately preceding the citation form, in every utterance of more than one word. Finite verb forms are given in the formula:

Finite Verb = (Stem + Voice)+(Tense ± Object)+(Mood + Subject)

3.A. MOOD MARKERS

Mood markers are a set of formal markers by which the moods of finite verb forms are distinguished. These occur in two slots, the first filled by -k/-Ø and the second filled by -a/-0.

The three moods distinguished by means of these formal features are:

a) The Imperative Mood: marked by -∅ + -∅ + pronominal subject.
This mood only occurs in future and present tenses, and
Subjects of the Imperative must be of the 2nd person.
Negative forms of the imperative are marked by alo-, 'don't'

b) The Optative Mood: marked by -k + -a + pronominal subject.
This mood only occurs in future and present tenses, but
Subjects of the Optative are not limited. All may occur.
Negative forms of the optative are marked by alo-, 'don't'

c) The Indicative Mood: marked by -∅ + -a + pronominal subject
This mood occurs in all tenses, past, present and future.
All 11 subjects occur, as well as a -∅ impersonal subject.
Negative forms of the indicative are marked by ka-, 'not'

The Imperative and Optative Moods occur only in four tenses: the simple future in -∅, the static future in -ta, the anterior future in -le, and the perfect used as a continuous present, in -aka(d'). The present forms in -tan and -jad', and past forms do not occur here.

sen-pe,	'go(you,pl.)'	sen-k-a-pe,	'you(pl) may go'
sen-ta-pe,	'go once'	sen-ta-k-a-pe,	'you may go once'
sen-le-pe,	'first go'	sen-le-k-a-pe,	'you may first go'
sen-aka-pe,	'keep going'	sen-aka-k-a-pe,	'you may keep going'

In the last two cases, the alternate tense forms, -len, and -akan may express defiance, 'if you dare!' (MG.166), or be reflexive (MG.169)

Pre-mood Markers: Between the tense marker and the mood marker occurs a slot in which several different particicles appear under very restricted conditions, some occuring only in a single tense.

(1) -KO'- This marker occurs as a politeness marker in the simple future tense of the imperative and optative moods with both transitive and intransitive verb stems. The same form acts as an anterior future tense for the intransitive stems, which have no anterior future in -le.

Imperative Mood

1. Simple Future, Polite:	tvs.	lel-ko'-pe,	'please look at it'
(MG.166)	ivs,	sen-ko'-pe,	'please go'
2. Anterior Future;	tvs.	lel-le-pe,	'first look at it'
(MG.166)	ivs,	sen-ko'-pe	'first go'

Optative Mood

1. Simple Future, Polite:	tvs,	lel-ko'-ka-pe,	'you may please look'
(MG.169)	ivs.	sen-ko'-ka-pe,	'you may please go'
2. Anterior Future:	tvs.	lel-le-ka-pe,	'you may first look'
(MG.169)	ivs.	sen-ko'-ka-pe,	'you may first go'

This same marker, -ko'-, occurs in the Indicative Mood, but not as a politeness marker. Here it is used exclusively with intransitive stems as an anterior future, parallel to the transitive anterior future, -le.

Indicative Mood

2. Anterior Future:	tvs.	lel-le-a-pe,	'you will first look'
(MG.138)	ivs.	sen-ko'-a-pe,	'you will first go'

Since -ko'-does not co-occur with any tense, it may be called a tense mk.

MUNDARI VERB FORMS

Indicative Mood		
1. Simple Future Indicative	lelkoa,	sena,
2. Static Future Indicative	leltakoa,	-----
3. Anterior Future Indicative	lellekoa,	(senko'a)
4. Simple Present Indicative	lelkotana,	sentana,
5. Indefinite Present Indicative	leljad'koa,	-----
6. Continuous Present Indicative	lelakadkogea,	senakadgea,
7. Simple Past Indicative	lelked'koa,	senkena,
8. Static Past Indicative	leltad'koa,	-----
9. Anterior Past Indicative	lelled'koa,	senlena,
10. Indefinite Past Indicative	-----	senjana,
11. Perfect Indicative	lelakadkoa,	senakana,
Imperative Mood		
1. Simple Imperative	lelkope,	senpe,
2. Static Imperative	leltakope,	-----
3. Anterior Imperative	lellekope,	(senko'pe)
4. Continuous Imperative	lelakakope,	senakape,
Optative Mood		
1. Simple Optative	lelkoka,	senka,
2. Static Optative	leltakoka,	-----
3. Anterior Optative	lelkekoka,	(senko'ka)
4. Continuous Optative	lelakakoka,	senakaka,

4. IRREGULAR VERBS

Irregular verbs in Mundari are those verbs in which the order of the verbal elements fo not follow the regular rules for verb forms. There are two main classes of irregulars: first, forms like the verbs mena' and bano' in which the subject is infixed before the mood marker rather than after it, and second, the impersonal construction with verbs denoting subjective states, in which the subject is infixed in the verb as an indirect object.

4.A. VERBS WITH INFIXED SUBJECT

The verb forms mena' and bano' and their equivalents are formed by infixing the pronominal subject before the mood marker, rather than have the subject follow the mood marker as it does in the regular verb.

(a) mena','to be, to exist, to be present, to be alive.' [MG.172]

Forms in mena' consist of a stem, plus subject pronoun, plus mood.

mena'iña, 'I am here'	mena'pea, 'you are here'
mena'mea, 'you are here'	mena'koa, 'they are here'
mena'ia, 'he/she is here'	mena', it is here' ,etc.,etc.

(b) bano', not to be, not to exist, not to be present, to be dead'

The stem bano' has an allomorph bang-,used with all animate pronouns:

bangiña, 'I am not here'	bangmea, banga'ia...
bangpea, bankoa/bangkua,	bano'a, 'it is not here.'

(c) Locational Compounds are formed in the same way as mena' and bano' when they are used as intransitive verbs. As a stem, these are identical with nouns in the locative cases, or adverbs of place, (q.v.)

nere, av.,'here' neriña, nerema, neri'a; nerea.

orare,'in the house' ora'iña, ora'ma, orarekoa; ora'rea.

The verbs with infixed subjects are intransitive verb forms. Generally they are used only in the simple unspecified tense, with -Ø marker,but

1. Mena' takes the suffix -akan, a perfect intransitive marker.

mena'-akan-a-ing, 'I am still here' (regular construction)

2. bano' takes the suffix -jan, an indefinite past marker,in 3rd person

bano'jana, bangai'jana-e, bangkingjana, bangkojana.

'It,he,the two, they died, or went away.'(infixed subject)

3. Locationals take the suffix -jan with all the pronominal subjects.

ora'tingjana, ora'temjana, ora'ti'jana, ora'tekojana.

'I, you, he, they...went home.' (infixed subject)

In syntax, the use of mena' and bano', as well as the parallel forms made up of locationals, establishes the intransitive verbs of existence as distinct from the linking or equational verbs, -tan and -a'. This distinction does not exist in many Indo-European languages, and is essential in the early stages of learning the Mundari language. Besides existence and presence, the forms mena' and bano' are also used to express possession, in conjunction with the genitive of possession, -a'.

Aina' sadom mena'ia, or sadom mena'ia-taing [MG.Intro.xlvii]

'I have a horse.(lit.there exists a horse of mine)'

4.B. IMPERSONAL CONSTRUCTIONS

The impersonal constructions in Mundari are verbs which have a zero marked impersonal subject. The semantic subject is generally put into the verb form as an infixed indirect object. These verbs are mostly those which indicative subjective states or feeling. The verb form at'kar,'to feel' falls within this general category, but has a special construction with adverbial phrases or participles with -leka,'like'

(a) Verbs denoting feelings or mental states take the impersonal construction with the subject experiencing the state as indirect object. This impersonal construction occurs with the simple future in -Ø, the indefinite present in jad', and the simple past in -ked! This is a transitive construction,as indicated by the markers,and objects.

suku-ako-a, 'it will be pleasing to;them; they will be pleased'

suku-ja'ko-a,'it is pleasing to them; they are pleased.'

suku-k-ako-a,'it was pleasing to them; they were pleased.'

Other tenses may also be used, but are less common than these three, because only in these tenses are the indirect objects overtly marked.

(b) The verb at'kar,'to feel' takes adverbials with the suffix -leka. These adverbials may be simple words, or participles, even clauses.

ruatan-leka at'kar-ja'in-a, "I feel like I have fever'[MG.178]

ciula-o ka-ing lelki'-leka at'kar-ja'-in-a, [MG.179]

'I am under the impression that I never saw him.'

Verbs Used in Impersonal Construction

[MG.176]

suku, to be happy	rasika, to be joyful
rabang, to feel cold	tut'kun, to feel cold
lolo, to feel hot	urgum, to feel warm
sanang, to desire	hilang, to hate
renge, to feel hungry	tetang, to feel thirsty
giu', to feel ashamed	centa, to feel jealous
kis, to feel angry	mamarang, to feel proud
kurkur, to feel angry	kadrau, to feel annoyed
akadanda, to feel astonished	akabakau, to feel confused
asadi, to feel ennui	monduku, to feel repentence
jete', to feel sunshine	elang, to feel fire
balbal, to perspire	sukul, to feel smoke
dulumulu,to feel a chill	tatai, to feel stiff
laga, to feel tired	babata,to feel itch
bo'biur, to feel giddy	luturhunghun,to have ears buzzing
mer, to find bitter	herem, to find sweet
rabal, to find light	hambal, to find heavy
jojo, to find sour	harad', to find peppery
sirin, to find stale	heben,to find astringent
soan,to smell	turtung, to feel glare

Note : These words are used elsewhere, either as noun stems, or as adjective stems among the adjectives of quality.

MUNDARI VERB FORMS

A verb form is based upon a verb stem,

1. Either this stem is marked for tense, or it is not.

   Verb forms not marked for tense are . . . . . Verb Stems

   If the verb form is marked for tense,

2. Either is has a pronominal subject, or it does not

   Verb forms not marked for subject are . . . . . Participles

   If the verb form is marked for tense and subject,

3. Either the form is marked by the mood marker "a"or not

   Verb forms not marked with the mood marker "a" are. . Imperatives

   If the verb form is marked with "a",

4. Either the form is marked by a preceding "k" or not,

   Forms marked by mood marker "a"without "k" are . . . Indicatives

   Forms marked with +k +a are . . . . . Optatives

A verb stem is a verb root or root combination inflected for voice.

They are infinite forms.

A Participle is a verb stem inflected for voice,and tense.

They are non finite forms.

A Verb is a verb stem inflected for voice, tense and mood.

They are finite forms.

Imperatives are marked by ∅ mood marker

Indicatives are marked by +a mood marker

Optatives are marked by +k +a mood marker.

VERB STEM + Voice			+ Tense			+ Object	+ Mood		+ Subject
Prefix	Infix	Suffix	Aspect	Time	Tr.	d.o./i.o.	Pre-M	Mood	Subject
ø	ø	ø	(a)ø	ø	ø	ø, -e	ø	ø	ø
R-	-p-	-en	TA	---	D	-ing	-ge	a	-ing
$\overline{V}$	-n-	-o'	LE	---	N	-lang	-ko'	ka	-lang
			JA	---		-ling	-te		-ling
			AKA	---		-bu			-bu
			(a)---	KE		-le			-le
			(a)---	TA		-me			-me
						-ben			-ben
						-pe			-pe
						-i'			-e
						-king			-king
						-ko			-ko
2 x 3 x 3			3 x 5 x 3 x 3 x 12				x 3 x 3 x 12		

Particles Used in the Construction of Mundari Verbs

3

ADJECTIVES AND ADVERBS

Mundari forms belong either to the noun system, with typical noun formative elements, or the verb system, with typical verb formative elements, or they belong to neither set, and are uninflected particles. The uninflected particles are of two kinds: (1) those which belong to the major form classes, such as adjectives and adverbs, and (2) those whichact as function words in the language, namely, as connectors, relators, intensifiers, and exclamations. The adjectives and adverbs are treated here in Section 3, the function words in Section 4.

Uninflected particles which belong to an adjective class are distinguished from other particles by their limited distribution in syntax. Adjectives are forms that occupy modifying slots in the noun phrase, and occur immediately preceding the head noun in such phrases. They also act as predicate attributes, particularly in the construction which consists of an adjective, followed by emphatic -ge,and copula -a. Immediately recognizable as adjectives are the forms which occupy the same slots as the genitive cases of nouns or pronouns, and numerals. Adverbs are forms which occupy the typical adjunct slots on clause level, of time,place, manner and purpose. They occupy the same slots as the oblique cases of nouns and pronouns, and often have the same endings.

The Adjectives and Adverbs are considered under these headings:

(1) Adjectives: Adjectives are uninflected forms which fill the modifying slots of noun phrases and the predicate attribute slot in clauses. There are adjectives of both quality and quantity.

(2) Adjective Substitutes: Adjective substitutes are those forms which are formally adjectives, but have the overlaid function of refering to an antecedent. These include Demonstrative, Indefinite, Interrogative forms.

(3) Numerals: The numerals are a special class of adjective substitute, generally used as a simple adjective, but occasionally used as nominals They are a class immediately recognizable as adjectives.

(4) Adverbs: Adverbs are uninflected forms which fill the adjunct slots of time, place, manner and purpose on the clause level. Consequently they include temporals, locationals, manner and purpose adverbs.

(5) Adverb Substitutes: Adverb substitutes are those forms which are formally adverbs, but have the overlaid function of signalling an antecedent. They include Demonstrative, Indefinite, Interrogative forms.

Besides these 5 classes of forms which belong to the adjective and adverb classes respectively, there are other adjectivals and adverbials, which are the genitive and oblique cases of nouns and pronouns. The oblique cases of pronouns are formed on a pronominal base, and are always marked with a pronominal suffix indicating person and number. The true adjective or adverb lacks the pronominal suffix. Adjectives are never marked for number, but may have gender concord.

1. ADJECTIVES

An Adjective is a form unmarked for person or number, which may be marked for gender. It is syntactically defined by its use as a modifier in noun phrases, and its use on clause level as a predicate attribute. An adjective is an uninflected particle, and cannot be distinguished by any morphological criteria from other forms.

Adjective = Uninflected Particle

An adjective is known by what it is not. It is distinguished formally from other forms only according to what formative elements cannot occur with it, not positively by its own formative elements.

a) An Adjective is a free form. Therefore it is a primary or radical root, not a formative element. All formative elements are bound.

B) Adjectives do not formally connote gender. True adjectives have no gender concord with the nouns they modify. Only a handful of adjective substitutes show a contrast between animate and inanimate.

c) Adjectives are not inflected for number. A form found marked with the dual, -king or the plural, -ko either is not an adjective, or is an adjective being used as a nominal in a particular construction. There is no number concord with the noun they modify.

d) An adjective is not inflected for case. Any form marked by case is not an adjective. Many adverbs are formed by an adjective base, to which is added a case ending. But there is no case concord with nouns.

1.A. ADJECTIVE STEMS

Adjectives, or adjective stems, take no regular inflection. According to their form, they may be simple, derived, or compound stems. The simple stems are most generally disyllabics, and may end in a vowel or consonant. Monosyllabic adjectives are generally loan words, and a few trisyllabic stems occur.

a) Simple stems: A simple adjective stem is a stem that consists of a single root morpheme. These are generally disyllabic in form.

lolo, aj., 'hot' rabang, aj., 'cold'

The few monosyllabics stems that occur seem to be borrowed words?

soj, (H.),aj.,'straight' bes,(Sad.),aj.,'good(condition)'

A few trisyllabic adjectives occur, but there are not many of these:

salangi, aj.,'tall' Naguri,sangli, sangali

sekera, aj.,'quick,fast' also, sekra, sek'ra

b) Derived Stems: Derived adjective stems are stems of any form class that has an adjective formative. These stems consist of root + affix. The affixes include the intensifying infix -p-, the first order suffixes -n, and -ān, and the second order suffixes -uter and -leka.

1. The infix -p- is added to adjective stems denoting dimensions, as an intensifying suffix. It follows the first vowel,which vowel is repeated.

marang, aj.,'great' ma-p-arang, 'very great'

huring, aj.,'little' hu-p-uring, 'very little'

This infix -p- is homophonous with the reciprocal -p- of the verb stem

2. The first order adjective suffixes are the forms -n,-an,-akan.

The suffix -n is added to abstract noun stems, to form adjectives.

bugi, ns.,'goodness'	bugin, aj.,'good'
etka, ns.,'evil'	etkan, aj.,'bad'

The suffix -n is identical with the formative added to the locatives -tare, -re, and the instrumental -te, to form the adjectival suffixes -taren, -ren,-ten, as explained under the noun system,2.A.3.(q.v.)

This formative is used with the irregular verbs, mena' and bano':

sadom mena'ten horo,	'a man having horses'
taka bano'ten horo,	'a man without money'

The suffix -ān,'having,possessing' may be added to any noun stem, and means that this object or quality is the thing possessed:(MG.109)

taka-ān horo,	'a man with money'
sena-ān horo,	'a man with wisdom; wise man'

The suffix -akan is the tense sign of the perfect tense. It is added to verb stems, to form the perfect passive participle,an adjectival:(109)

leser, 'sharp;to sharpen'	leser-akan,'sharpened'
gau,'wound; to wound'	gau-akan, 'wounded'

3. The second order adjective suffixes are -uter, -leka (MG.111,68)

The suffix -uter,'very' is added to adjective stems to form superlatives.

marang, 'big'	marang-uter,'very big'

The suffix -leka is added to adjectives and adverbs expressing quantity, including numerals, to connote approximation of the quantity stated.

huring, 'small'	huring-leka,'small approximately'

1.B. ADJECTIVE CLASSES

Adjectives are grouped into two main grammatical classes,based on their distribution in syntax, Qualitative Adjectives and Quantitative. Qualitative Adjectives occupy the main modifying slot closest to the head noun in any modification structure. They may also be recognized by the intensifiers, isu,'very', kented',~~'very'(powerful)~~, and mermer, 'very'(bitter,sweet,etc.). The infix -p- and the suffixes -n,-an,and -akan,are peculiar to qualitatives, as is the superlative suffix -uter. Quantitative adjectives precede the qualitatives in any modification structure, and include all of the numerals. They are generally intensified by the particle pura','very'. The demonstratives have an infix,-min- 'quantity', and some substitute forms have gender concord.

(a) The Qualitative Adjectives denote moral, intellectual, and physical qualities of objects, including color, size, taste and shape.(MG.xiii) 1. The Mundari color system consists of only three colors, black,white, and red. Whatever is not either black or white, is red. Black and white are the neutral colors, red represents the chromatic colors. For colors other than red, the Munda uses expressions such as 'red like saffron'.

hende, aj.;'black'	pundi, aj.,'white'
ara', aj., red	(for all chromatic colors)
sasang-leka ara',	'yellow;(lit.red like saffron)'

Skin color,however,has the contrast hende,'dark', esel,'fair-skinned'

2. Words denoting size and shape are fairly limited in Mundari, and adjectives exist for just the basic concepts of length,width,etc.

marang, 'big'	huring, 'little; short'
jiling, 'long'	cakar, 'wide'
salangi,'tall'	ikir, 'deep'

These words are supplemented by the adjectives which apply to the sense of touch, and include qualities susceptible to that sense.

ibil, 'thick'	etan,'thin'
kete', 'hard'	lebe','soft'
rabang, 'cold'	lolo, hot' warm'

3. Words denoting moral and intellectual qualities are relatively rare Moral qualities are summed up in the word goodness, intellectual qualities in the word wisdom. Some physical adjectives are used of moral qualities in a transferred sense,e.g.lightness and heaviness.

bugin, 'good'	etkan, 'bad'
senān, 'wise'	dondo,'stupid'
hambal,heavy;difficult'	rabal,'light' easy'

4. The adjectives relating to the sense of taste are perhaps the most numerous as a class, and cover a wide range of taste expressions.

sibil, 'tasty'	maja,'pleasant-tasting'
herem, 'sweet'	jojo. 'sour'
berel, 'raw; fresh'	mata, 'ripe,mature'

These few examples give some idea of the range of the adjectives of quality, and help to make clear what is included in the class.

Examples of Adjective Stems

Disyllabic Adjectives of Quality

Consonant-Final (C)V(C).CVC		Vowel-Final (C)V(C).CV	
berel,	raw, fresh	ara',	red
bugin,	good	dondo,	stupid
cakar,	wide	gandi,	crooked
esel,	fair-skinned	gota,	whole, round
etan,	thin	hende,	blakc
hambal,	heavy, difficult	japa'	near
huring,	little	jojo,	sour
jiling,	long	kete',	hard
ibil,	thick	lebe',	soft
ikir,	deep	lenga,	left(-hand)
jiling,	long	lolo,	hot
jatang,	sticky	maja,	pleasant(taste)
leser,	sharp	mata,	ripe, mature
marang,	big, great	nawa,	new
pancal,	cunning	parci,	clean
rabal,	light, easy	pundi,	white
rabang,	cold	pura,	full
sangin,	distant,far	renge,	poor
senan-	intelligent,wise	ruda',	dirty,unswept
sibil,	tasty	sama,-	useless,

b) The Quantitative Adjectives denote measurement, and are natural responses to the questions How Much? How Many? These include all of the numerals, the quantitative substitutes, and a small class of adjectives.

soben, 'all'	eskar,'only'
pura',many'	huring,'few; little'
tara, 'several'	taramara, 'many'
isu, 'many'	isu-pura',very many'

Among this class are included the indefinite adjectives, already listed under pronouns as bases- for the pronominal adjectives,in

oko, 'some'	eta', 'other'
ja, 'any' (jan,inan)	jeta, 'some' (jetan,inan)

The Demonstratives ne, en, and han also form quantitatives by the addition of the base min-'quantity, and a concord -ang,for inanimates.

nimin,'this much'	niminang,'this much(inan)'
imin, 'that much'	iminang,'that much(inan)'
hamin,'that much'	haminang,'that much(inan)'

Other constructions involving ne,en,and the indefinite ja are given:

ni-m-pir-ang, 'as little as this'

i- m-pir-ang, 'as little as that'

ja-iminang, 'any amount of; any number of'

The Interogatives also have a formed,with the quantitative -min.

ci-min?,'how much,how many?' (ciminang,inan.)

With the interrogative forms, the distinction between the animate and inanimate forms of the quantitative is not always observed.

2. ADJECTIVE SUBSTITUTES

Adjective Substitutes are forms which are adjectives in their outward appearance and syntactic usage, but have a further overlaid signalling function. The form class of a substitute is called its type; the sphere of reference of a substitute is called its domain. The overlaid function of a substitute is to refer to a specified group of referants, included within its domain. This domain may be, in the concrete syntactical context, a single referant rather than the full semantic range of the domain. These substitutes in Mundari are classed as Personal, Demonstrative, Indefinite, or Interrogative substitutes according to their referential domain. These substitutes are relatively small fixed classes of words which are defined by complete listing, and which must be recognized in context with their signalling function.

2.A. ADJECTIVE SUBSTITUTE TYPES

The adjective substitute type is the class of words which belong formally to the adjective class, but have a further signalling function as members of a substitute class. These substitute classes are four:
(a) Personal Adjective Substitutes: There are no special personal substitutes belonging to the adjective class. However, the genitive case of the personal pronouns is used in this function. These are the personal pronouns with the endings: -a', -taren, -ren, -rea'.

(b) Demonstrative Substitutes: Demonstrative adjective forms occur. These ac t as free form adjectives, and also as the base for the demonstrative adverbs, and demonstrative pronouns. They are:

ne, 'this' refering to something near the speaker

en, 'that' refering to something near the hearer

han,'that' refering to something near a 3rd person

(c) Indefinite Substitutes: Indefinite adjective forms occur. These are free form adjectives, which also act as the base for the indefinite adverbs and indefinite pronouns. They are:

oko, 'some' (Identical in form with the Interrogative)

eta',''other' (Identical in form with eta','second')

ja, 'any' (with contrasting jan,'any'(inan))

jeta,'other' (with contrasting jetan,'other'inan.)

soben,'all'

(d) Interrogative Substitutes: Interogative Adjectives occur. These are free form adjectives, which also act as the base for the interrogative adverbs and the interrogative pronouns. They are:

oko?, 'what?'

cikan?, 'what?'

cilekan? 'what kind? like what?

The demonstrative and interrogative substitutes are adjectives of quality, but form quantitatives with the infix -min-,'quantity':

nimin(niminang) imin (iminang)

hamin(haminang) cimin(ciminang)

2.B. ADJECTIVE SUBSTITUTE DOMAIN

The domain of a substitute is its field of reference. The adjective substitutes are free-form adjectives which have a specific field of reference, which is applied to these free forms and to all the adverbs and pronouns which may be derived from these forms.

(a) Personals: The domain of the personal substitutes, or personal pronominal adjectives, is the person and number designated by the pronominal suffix which enters into the composition of the pronoun. The personal pronoun base, a-, marks the pronoun as a free form.

(b) Demonstratives: The domain of the demonstrative substitutes is the field of reference indicated by the free forms ne, en, and han. ne refers to objects near the speaker, en refers to objects near the hearer, and han refers to objects remote from both. These demonstrative forms act as simple designators. The referent may be either personal or impersonal; the reference may be either spacial or temporal.

(c) Indefinites: The domain of the indefinite substitutes is, as the name suggests, unspecified. The referents are designated as indefinite, in contrast with the demonstrative and interrogative designators.

(d) Interrogatives: The domain of the interrogative substitutes is the field of question utterances. In supplementary questions using interrogative substitutes, the question is recognized only if these substitutes are recognized as question-signalling items:

oko horo?, 'what man?' ne horo, 'this man'

SUMMARY: ADJECTIVES

Adjectives are free forms which take no number and case endings, and occupy the modifying slots in the noun phrase structure. They may also be used atrributively in a predicate attribute construction.

1.Ajectives are either qualitative or quantitative,

Qualitative adjectives: are positioned closer to the noun than the quantitative, and describe the object: hende,'black'

Quantitative Adjectives: are positioned further from the noun than the qualitative, and limit the object: soben,'all'

2. Quantitative Adjectives are either limiting or determining

Limiting Adjectives describe the quantity, without specifically pointing out the object in question. These may be

General Quantitatives: sóbén,'all'; pura','many',etc.

Numerals: miad;,'one'; baria,'two',etc.

Determining adjectives may be definite or indefinite

These always point out the object being described.

Definite: ne,-this', en'that', han,'that yonder'

Indefinite: ja,'any', jeta,'some', eta',other'

3. Possessive Adjectives are not adjective but adjectivals;

These have the particular signalling function of their class,

Personal: ainga',mine' Demonstrative: inia',his'

Indefinite: jania',anybody's'

4. Interrogative Adjectives always signal questions.

3. NUMERALS

Numerals are a sub-class of quantitative adjectives, which are also used as nouns. They constitute a relatively small class of items, which can be defined by complete listing. They occur following the demonstratives and preceding other modifiers in the maximum expansion of the noun phrase.

3.A. NUMERAL STEMS

Numerals may be simple, complex or compound stems. The numeral system is built up from a relatively few simple morpheme roots in a vicesimal system. There are distinct Mundari roots for the words 'one' to 'ten', a distinct word for a score,or 'twenty', and more recently, the Mundas have adopted the Hindi words for 'hundred' and 'thousand'.

a) Simple Stems are numerals which consist of a single root morpheme These include the numerals from one to ten,twenty,hundred,thousand.

miad','one	turuia,'six'	hisi,'twenty'
baria,'two'	ea, 'seven'	sau,'hundred'
apia, 'three'	irilia,'eight'	hajar,'thousand'
upunia, 'four'	area, 'nine'	
monea, 'five'	gelea,'ten'	

The form miad','one' has many allomorphs, among which are mid', mod', and moiad! The form miad' is the most general,and is used throughout.

b) Derived Stems: Stems composed of a stem and affix are derived stems. Numerals have various affixes which adapt them to different uses, and which occur with all the simple and compound numerals. These affixes include the process of reduplication,/R-/,and suffixes -sa, -leka. Reduplication occurs with all numerals, and transforms them into the distributives,'one each','two each',etc. Reduplication is accomplished by repeating the initial CV- or -VC.(mone- repeats mon; ea repeats e-.)

1. mi-miad,'one each
2. ba-baria,'two each'
3. ap-apia, 'three each'
4. up-upunia,'four each'
5. *mon-monea,'five each'
6. tu-turuia,'six each'
7. *e-ea, 'seven each'
8. ir-irilia,'eight each'
9. ar-area, 'nine each'
10. ge-gelea, ten each'
20. hi-hisi,'twenty each'
100. sa-sau,'100 each'
1000. ha-hajar,'1000 each'

These distributive adjectives may be transformed into adverbs by the addition of the instrumental -te,'by', in the sense 'one by one',etc.

mi-miad-te,'one by one' ba-baria-te,'two by two'

When these distributives are used of persons, the word horo,'person' with the numeral is used twice, and followed by the instrumental -te; or, the word horo occurs between the distributive and the final suffix.

bar horo bar horo-te, 'two by two; two men by two men'

ba-baria horo-te, 'two by two; by two-each men'

Whenever a compound is reduplicated, only the first form is reduplicated.

gel-baria, 'twelve' ge-gel-baria,'twelve each'

The suffix -sa,'times', and the corresponding suffix,-duang(-dua), are used to transform the numeral into an a temporal adverb. (MG.68) This suffix is added to the short form of the numerals, and produces the following adverbs of time, with the formation of miad' irregular:

misa,	'once'	turuisa,	'6 times'
barsa,	'twice'	esa,	'7 times'
apisa,	'3 times'	irilsa,	'8 times'
upunsa,	'4 times'	aresa,	'9 times'
monesa,	'5 times'	gelsa,	'10 times'
mid'hisi-sa,	'20 times'	mid'sau-sa,	'100 times'
mid'hajar-sa,	'1000 times'		

The form misa, 'once has the allomorphs, mid'-sa, and mosa.

In approximations, the suffix -sa is only added to the last numeral.

api upun-sa, 'three or four times'

The second order suffix -leka,'approximately' may be added directly to the numeral to indicate that it is approximately this number.

mid'hisi-leka, 'about twenty'

This suffix may also be added to the adverbials in -sa for approximation

upun-sa-leka, 'about four times'

The idea of approximation can also be expressed without the suffix -leka by the juxtaposition of two numerals in the range approximated.

api upun horo, 'three or four men'

api upun-leka horo, 'about three or four men'

Adverbials with -leka remain adverbs; adjectives remain adjectives.

(c) Compound Numerals: All of the numerals except the numbers one to ten, and the words for twenty, hundred, and a thousand, are compounds. To form these, the words one-to-ten have a special compounding form: For most of these, the final -VV is truncated from the numeral stem. For the forms apia, monea, turuia, ea, and area, the final-V is lost. For the numeral miad','one', the allomorphs mid' and mod' are used.

mid'-	bar-	api-	upun-	mone-
turui-	e-	iril-	are-	gel-

These compounding allomorphs occur only in the primary member of a compound; the second member of the compound retains its original form.

1. miad'	11. gel-miad'	30. mid'hisi gelea
2. baria	12. gel-baria	40. bar-hisi
3. apia	13. gel-apia	50. bar-hisi-gelea
4. upunia	14. gel-upunia	60. api-hisi
5. monea	15. gel-monea	70. api-hisi gelea
6. turuia	16. gel-turuia	80. upun-hisi
7. ea	17. gel-ea	90. upun-hisi-gelea
8. irilia	18. gel-irilia	100. mid'sau
9. area	19. gel-area	500. mone-sau
10. gelea	20, mid'hisi	1000. mid'hajar

The compounding allomorphs as used as regular adjectives in counting, with the forms horo,'man', bo','head(of cattle),and ora, 'house'(MG.65) These nouns,horo,bo',ora,are counting units,and take no number suffix.

kora honko,api horo; kuri honko,bar horo,'2 sons;3 daughters'

4. ADVERBS

An Adverb is an uninflected particle which fills the adjunct slots on clause level. These adverbs include, according to the slot wh which they fill, adverbs of place, time, manner and purpose, answering the questions: Where? When? Why? and How? Adverbs are free forms which fill the slots filled also by the oblique cases of nouns. The slot therefore is formally marked by the formative elements -re, -te,-ete, -sa', -ta', -te(ins), -a horate, -lo', -leka, and -mente.

4.A. ADVERB STEMS

Adverbs, according to their form, are simple, derived, and compound. The simple stems consist of a single root morpheme, the derived stems of a root plus affix, and a compound stem of two roots.

a) Simple Stems: Simple adverb stems are the stems of a single root. These cannot be identified by any morphological criteria. In syntax they fill the same slots as the adverbials which are oblique cases of nouns. Most simple stem adverbs are adverbs of time, answering the questions: ciula?,'when; what day?; cimta,(cimtang), 'when?'.

ciula?, 'when'	tising, 'today'
gapa, 'tomorrow'	hola, 'yesterday'
cimta?, 'when?'	imta, 'then'
na', 'now'	nimir, 'nowadays'

b) Derived Adverbs: The derived adverbs usually consist of an adjective base followed by the suffixes, -re,-te,-kote, indicating place or time. Adverbs of manner are also adjective based, but are marked with modal suffixes, -te(ins),-leka,-lekate. Final adverbs are marked by mente. The general formula for a derived adverb is as follows:

Derived Adverb = Adjective Base + Case Suffix

Forms which are made up of a noun base and a case suffix are the oblique cases of nouns, and contrast with the adjective-based adverbs. Since adjectives have no case concord with the nouns they modify, the suffix of a derived adverb must be interpreted as a derivational suffix. Still, some oblique cases of nouns are used so frequently as adverbials, that they are often listed among the derived adverbs of the language.

munu, ns.,'beginning' munu-re, 'in the beginning'

doya, ns.,'back' doya-re, av. 'behind'

Besides the regular case suffixes, adverbs are also formed with the suffixes -imta,'then'; -sa,-duang,'times'; -sing,-ma, 'day'.

imta, av., 'then' (+ ne) nimta, 'then'

bar-, num.,'two' barsa, 'twice'

api-, num.,'three' api-ma,'three days'

c) Compound Adverbs: Adverbs of more than one root occur, with or without the additional of derivational suffixes, such as:

tising, 'today' + gapa,'tomorrow' =

tising-gapa, 'nowadays'

jom,'eat' + ti','hand' + -sa','to' = jomti'sa','right-hand'

4.B. ADVERB CLASSES

Adverbs belong to one of four principle classes, the adverbs of time, the adverbs of place, the adverbs of manner, and adverbs of purpose. These may be distinguished, at least in some cases, by certain formal markings, particularly among the derived type of adverbs.

1. Adverbs of Place: The adverbs of place are adverbs which fill the locational slots on clause level marked by the locative cases of nouns, and are responses to the questions: okore?,'where';okotate?,whence?'etc. Formally, they are derived adverbs, marked with the suffixes -re, -te, and -kote, which are added to adjective stems to form these adverbs. As adverbs of place they may take other locative suffixes as well, including -re,-te,-ete,-tare,-sare,etc., but -re and -te are common. The principal adjective stems used to form these adverbs are as follows;

aiar, aj.,'ahead'	aiar-re,av.'ahead'
taiom, aj.,'behind'	taiom-re,av,'behind'
cetan, aj.,'upper'	cetan-re, av.,'above'
latar, aj.,'lower'	latar-re, av.,'below'
japa., aj.,'near'	japa-re, av.,'nearby'
sangin, aj.,'far'	sangin-re, av.'far away'
parom, aj.,'across'	parom-re, av.,'across'
tala, aj.,ns.,'middle'	tala-re, av. 'in the midst'
biter,aj.(H.),'inside'	biter-re, av.'inside'
bahar,aj.(H.),'outside'	bahar-re, av. 'outside'

Some of the locational adverbs are based on noun stems, and are more properly considered as adverbials,-the locative case of nouns. Such as:

raca,	ns.,'front yard'	raca-re,	av.,'out front'
kundam,	ns.,'back yard'	kundam-re,	av.,'out back'
sirma,	ns.,'roof;heavens'	sirma-re,	av.,'above'
cuti,	ns.,'summit'	cuti-re,	av.,'on top'
suba,	ns.,'lower part'	suba-re,	av.,'below'
doya,	ns.,'back(of body)'	doya-re,	av.,'behind'
danang,	ns.,'a screen'	danang-re,	av.,'screened'
gena,	ns.,'border'	gena-re,	av.,'on the border'
atom,	ns.,'edge'	atom-re,	av.,'on the edge'

It should be noted that the Mundari adverbials are more specific than the corresponding English formations. The adverbial base indicates the general locative area in question; the suffix specifies the adverbial: -re,'in(this area)'; -te,'towards(this area)'; -ete,'from(this area)'. The choice of suffix depends upon the context in which the form occurs.

e.g.	He is further forward.	ayar-re,'in the forward(area)'
	He went forward.	ayar-te,'to the forward(area)'

This area can be further specified by prefixing a demonstrative form.

ne-ayar-te,'to this forward' en-ayar-te,'to that forward'

Any further specification of the area of reference of the adverb would involve the pre-positing of a noun or noun phrase describing the place. This is what happens, in fact, when the above locational adverbs are used as prepositions governing locational nouns and noun phrases.

2. Adverbs of Time: The adverbs of time are adverbs which fill the temporal slots on clause level, marked by the locative clases of nouns, and by certain temporal words and suffixes,such as -sa,-duang, -imta, and acting as responses to the questions: ciula?,'what day?,when?' and cimta, cimtang?, 'when?'.Simple,derived,compound stems occur.

2a) Simple Temporal Adverbs, consisting of one morpheme.

ciula? 'when,what day?'	tising, 'today'
gapa, 'tomorrow'	hola, 'yesterday'
na', 'now'	nimir, 'nowadays'
enang, 'a while ago'	auri, 'later'
honder, 'some days ago'	janao, 'always'
maha, mā, 'last year	kalom, 'next year'
imta,imtang, 'then'	neskan,'next time'
dinaki,dinam, 'daily'	

2b) Derived compounds, with both stem and suffix freeforms. (MG.79)

ci + hula(ng) = ciula?, 'what day; when?'

ja + hula(ng) = jaula, 'any day, then'

ci + imta(ng) = cimta,cimtang, 'when?'

ne + imta(ng) = nimta, nimtang, 'then'

en + imtang = enimtang, -at that time'

han + imtang, = han-imtang, 'at that time'

ja + imtang = jaimtang, 'at any time'

jeta + imtang = jetaimtang, 'at some time'

Compounds of oko,'some' and eta','other' with imta do not occur.

2c) Derived compounds, with the suffixes -sa,-duang,-sing(-ma)(MG.79)

Numerals and other quantitative adverbs take the suffix -sa (-duang).

misa, 'once'	miad' + -sa
barsa, 'twice'	bar + -sa
isu-sa, 'many times;often'	pura'sa, 'many times; often'
isupura'sa,'very often'	

Numerals 'one' and 'two'take the suffix -sing,other numerals add -ma.

mu-sing, 'one day'	miad + -sing
bar-sing, 'two days'	bar + -sing
api-ma, 'three days'	api + -ma
upun-ma, 'four days'	upun + -ma

2d) Derived compounds with the locative suffixes,-re,-te,-kote.(MG.79)

munu, ns., 'beginning'	munu-re,av.,'in the beginning'
tundu,ns.,'end,finish'	tundu-re,av.,'in the end'
aiar, aj. 'previous;early'	aiar-re,av.,'before;sooner'
taiom, aj.,'following;later'	taiom-re,av.,'after;later'
sida, aj., 'first'	sida-re, av., 'before'

2e)Compounds of more than one root occur,often of two adverbs together

tising-gapa, 'nowadays'	tising + gapa
gapa-danang,'day after tomorrow'	gapa + danang,'hidden'
hola-tere, 'day before yesterday'	hola + -tere(bound)
sing-satub, 'all day long'	singi +-satub(bound)

2f) Some adverbs are repeated for intensification

misa misa, 'sometimes'	sirma sirma,'yearly'

3. Adverbs of Manner, of Modal adverbs, are adverbs which fill the modal slots on clause level, marked by the oblique non-locative case suffixes. They are marked by the other case suffixes, such as the instrumental, -te, manner, -leka, accompaniment,-lo',or are free forms. They answer the questions: cikana? 'what kind?, cileka? 'how?'

a) Simple Adverbs of manner occur, which are single morphemes.(MG.76)

isu, av., 'very'	era-ge, 'very' (one morpheme)
mermer, av., 'intensely'	kented, av., 'violently'

Often the adverbial usage is signalled by the emphatic suffix -ge.

sekera, aj., 'quick'	sekera-ge,'quickly'
sama, aj.,'useless'	sama-ge, 'uselessly,in vain'
eskar, aj.,'only'	eskar-ge,'only'
roka, aj.,'sudden'	roka-ge, 'suddenly'

3b) Derived adverbs of manner are marked with -te(ins),'-ly'(MG.77)

sekera-te, 'quickly	mani-te, 'slowly'
rabal-te, 'easily'	hambal-te,'with difficulty'
misa-te, 'together'	mi-miad-te,'separately'
bode-te, 'quickly'	andaga-te,'suddenly'

This is an open class of adverbs,formed from any adjective. A set of adverbials also occurs,with nouns or participles as a base form.

boro, ns., fear'	boro-te,'with fear;fearfully'
eklatan,part.,'trembling'	eklatan-te,'tremblingly'
rasika,ns.,'joy'	rasika-te,'joyfully'
ra'tan,part.,'crying'	ra'tan-te,'cryingly'

3c) Derived adverbials occur with the suffix -leka,-lekate.(MG.77-78) The only true adverbs formed in this way from adjective stems are the adverb-substitutes built on demonstrative,indefinite,interrogative roots. All other adverbials of manner are formed by nouns + leka(te).

cileka?, 'how; in what way?' jontu-leka,'like an animal'

raja-leka, 'like a king' dasi-leka, 'like a servant'

Time words with the leka suffix are adverbs of manner, answering the question cileka/,'how?',and formally marked with a manner suffix:

na'-leka, 'like now' enang-leka,'like then'

tising-leka,'like today' honder-leka,'like then'

The base upon which these temporal-manner adverbs are formed are listed as adverbs, but also have nominal use, in the subject slots on clause level, and also as a nominal base for adverbs, as in this case.

4. Adverbs of Purpose: If -mente,'for' be considered a bound form,then there are adverbs of purpose as forms, if not, there are no such adverbs. Adverbs of purpose are adverbs(or adverbials) which fill the purpose slot on clause level,are marked by mente, and act as responses to the question: cikana mente? cina-mente?, 'why? for what reason?'

The forms most likely to be considered single word adverbs are derived:

cina-mente, 'why?' ena mente,'therefore'

nea mente,'for this reason' hana mente, 'for that reason'

The prefered interpretation seems to be that all forms in mente are two words, and that these are adverbial phrases,marked by the free form prepositions, mente,'for'; nagen,nagente,'for'.

5. ADVERB SUBSTITUTES

Adverb Substitutes are forms which according to their outward shape are formally adverbs, but which have an overlaid signalling function that is independent of morphological shape. The form class of a substitute is called its (morphological) type; its overlaid function is called its (referential) domain. Adverb substitutes according to morphological type, are adverbs of the locative and non-locative types; i.e. adverbs marked by -re,-te,-ete, etc. and adverbs marked by -leka. Adverb substitutes according to referential domain, are the demonstrative, indefinite, and interrogative adverbs.

5.A. Locative Marked Adverbs

Adverb substitutes of the demonstrative, indefinite, and interrogative substitute classes, occur formally marked with the locative suffixes. These are adverbs of place and time. The adverbs of time have a few extra suffixes, such as -imta,'then'

1) Adverbial Substitutes,Locational: Adverbs of place are formed from a adjective substitute base, to which is added the locative suffixes. The base may be a demonstrative,indefinite,or interrogative.

a) Demonstrative Adverbs of Place are formed by using the demonstrative adjectives: ne, 'this', en,'that'; han,'that yonder' as a base, to which are added the locative suffixes, -re, -te, -ete, -sa, -ta, etc.

This combination produces adverbs of place, translated as follows:

nere, 'here'	enre, 'there'	hanre, 'there yonder'
nete, 'hither'	ente, 'thither'	hante, 'thither yonder'
neate, 'hence'	enate, 'thence'	hanete, 'thence yonder'

b) Indefinite Adverbs of Place are formed by using the indefinite adjectives, ja,'any'; jeta'some'; oko,'some', soben,'all' as a base.

jare, 'somewhere'	okore, 'somewhere'
jetare, 'anywhere	sobenre, 'everywhere'

c) Interrogative Adverbs of Place are formed by using the interrogative adjectives as a base, such as the interrogative oko?, 'what?'

okore, 'where?'	lit.'in what place?'
okote, 'whither?'	lit.'to what place?'
okoate,'whence?'	lit.'from what place?'

2. Adverbial Substitutes,Temporal: Certain adverbs of time are also formed with the locative suffixes. The adverbs formed from the demonstrative adverb en,'that',with locative suffixes, are used with reference to a point in time rather than space. These temporal adverbs are often used as conjunctions, refering back to a previous statement.

enre,	'at that time; meanwhile; in the meantime'
enre-o,	'at that time even; still, nevertheless'
ente(-do),	'tothat time; then,and then'
enate(-do),	'from that time;and then, after that'

The indefinites and Interrogatives,refering to time, would use the forms in -imta,'then',and sobenre,'everywhere',contrast with janao,'always'

5.B. Non-Locative Adverbs

Adverbs of the demonstrative, indefinite, and interrogative classes are formed with the non-locative suffixes, -imta,'then', and -leka, -lekate, 'like'. The results are adverbs of time and manner.

1. Adverbs of Time are formed from an adjective substitute base, to which is added the temporal suffix -imta, 'then'.

a) Demonstrative Adverbs of Time are formed from the demonstrative adjectives: ne,'this'; en,'that'; han, 'that yonder'.

nimta,nimtang, 'at this time'

enimta, enimtang, 'at that time'

hanimta, hanimtang, 'at that remote time'

b) Indefinite Adverbs of Time are formed from the indefinite adjectives ja,'any'; jeta,'some'; soben,'all' has a contrasting form,janao,'always'

jaimta,jaimtang, 'at any time'

jetaimta, jetaimtang,'at some time'

janao,janao janao, 'at all times; always'

c) Interrogative Adverbs of Time are formed from the interrogative particle ci-,'what?' and the suffix -imta,'then'

cimta,cimtang, 'at what time, when?'

2. Adverbs of Manner are made from an adjective substitute base, to which is added one of the manner suffixes,-leka,-lekate,'like': These occur with all the demonstrative,indefinite and interrogatives. Some have contracted forms,such as neka,nelka,enka,hanka,and cilka.

DEMONSTRATIVE ADVERBS

Dem.av. = dem/ajs/ + case suffix

(Attested)

Class #1: ne,'this' + locative		
(Base: ne-)	neta', (EM.2999)	nesa', (EM.2997)
nere, (EM.2997)	neta're, (EM.2999)	nesa're, (EM.2997)
nete, (EM.3000)	neta'te, (EM.2999)	nesa'te, (EM.2997)
neate, (EM.2985)	neta'ate, (EM.2999)	nesa'ate, (EM.2997)
nekore, (MG.72)	neta'kore, (MG.72)	nesa'kore, (MG.72)
nekote, (MG.72)	neta'kote, (MG.72)	nesa'kote, (MG.72)

Class #2: en,'that' + locative		
(Base: en-)	enta', (EM.1301)	ensa', (EM.1301)
enre, (EM.1300)	enta're, (EM.1301)	ensa're, (EM.1301)
ente, (EM.1302)	enta'te, (EM.1301)	ensa'te, (EM.1301)
enate, (EM.1292)	enta'ate, (EM.1301)	ensa'ate, (EM.1301)
enkore, (MG.72)	enta'kore, (MG.72)	ensa'kore, (MG.72)
enkote, (MG.72)	enta'kote, (MG.72)	ensa'kote, (MG.72)

Class #3: han,'that' + locative		
(Base: han-)	hanta', (EM.1600)	hansa', (EM.1599)
hanre, (EM.1598)	hanta're, (EM.1600)	hansa're, (EM.1599)
hante, (EM.1601)	hanta'te, (EM.1600)	hansa'te, (EM.1599)
hanate, (EM.1592)	hanta'ate, (EM.1600)	hansa'ate, (EM.1599)
hankore, (EM.1598)	hanta'kore, (MG.72)	hansa'kore, (MG.72)
hankote, (EM.1598)	hanta'kote, (MG.72)	hansa'kote, (MG.72)

INDEFINITE ADVERBS Indef.Av. = Indef.ajs. + case suffix (Attested)		
Class #1: ja,'any' + locative		
(Base: ja-)	jata', (EM.2017)	jasa', (EM.2016)
jare, (EM.2011)	jata're, (EM.2017)	jasa're, (EM.2016)
jate, (EM.2018)	jata'te, (EM.2017)	jasa're, (EM.2016)
jaete, (MG.71)	jata'ete, (EM.2017)	jasa'ete, (EM.2016)
*jakore, -----	jata'kore, (MG.72)	*jasa'kore, -----
*jakote, -----	jata'kote, (MG.72)	*jasa'kote, -----
Class #2: jeta,'some' + locative		
(Base: jeta-)	*jetata', -----	*jetasa', -----
jetare, (MG.70)	jetata're, (MG.70)	jetasa're, (MG.70)
jetate, (MG.70)	jetata'te, (MG.70)	jetasa'te, (MG.70)
jetaete, (MG.70)	jetata'ete, (MG.70)	jetasa'ete (MG.70)
jetakore (MG.72)	*jetata'kore, -----	*jetasa'kore, -----
jetakote, (MG.72)	*jetata'kote, -----	*jetasa'kote, -----
Class #3: soben,'all' + locative		
(Base: soben-)	sobenta', (EM.4021)	sobensa', (EM.4021)
sobenre, (EM.4021)	sobenta're, (EM.4021)	sobensa're, (EM.4021)
sobente, (EM.4021)	sobenta'te, (EM.4021)	sobensa'te, (EM.4021)
sobenete (MG.110)	sobenta'ete (MG.71)	sobensa'ete, (MG.71)
*sobenkore, -----	sobenta'kore, (MG.73)	sobensa'kore, (MG.73)
*sobenkote, -----	sobenta'kote, (MG.73)	sobensa'kote, (MG.73)

INTERROGATIVE ADVERBS Inter.Av. = Inter.ajs. + case suffix (Attested)		
Class #1: oko,'what?' + locative		
(Base: oko-)	okota', (EM.3088)	okosa', (EM.3086)
okore, (EM.3086)	okota're, (MG.70)	okosa're, (MG.70)
okote, (EM.3088)	okota'te, (MG.70)	okosa'te, (MG.70)
okoate, (EM.3084)	okota'ete, (MG.70)	okosa'ete, (MG.70)
ADVERBS OF MANNER (+ -leka)		
1. Demonstrative Adverbs		
neka(-te) (EM.2988)	neleka(-te) (EM.2988)	'in this way'
enka(-te) (EM.1299)	enleka(-te) (EM.1299)	'in that way'
hanka(-te) (EM.1597)	hanleka(-te) (MG.77)	'in that yonder way'
2. Indefinite Adverbs		
-----	jaleka(-te) (EM.1970)	'in any way'
-----	jetaleka(-te) (MG.77)	'in some way'
-----	okoleka(-te) (EM.3084)	'in some way'
3. Interrogative Adverbs		
cilka(-te) (cf.oko)	cileka(-te) ? (EM.851)	'in what way?;how?'
-----	okoleka(-te)?(EM.3084)	'in what way?;how?'
ADVERBS OF TIME (+ -imta)		
cimta(-ng)? (EM.853)	jaimta(ng), (EM.1961)	jetaimta(ng) (MG.79)
nimta(-ng), (EM.3010)	enimta(-ng) (EM.1298)	hanimta(-ng) (MG.79)

4

FUNCTION WORDS

Mundari forms belong to either the noun system, with typical noun formative elements, or to the verb system, with typical verb formative elements, or are uninflected particles. Among the uninflected particles are the major form classes, the adjectives and adverbs. All other uninflected particles are function words, and include the connectors, relators, intensifiers, emphatics and negatives.

All of the words in the Mundari lexicon belong either to one of the major form classes, which carry the main content of the message to be communicated, or they are function words, which establish relationships among the major form classes. The function words of Mundari are all uninflected particles. These function words are divided into groups according to their syntactic usage. Function words are:

1. Words that connect two syntactic units
   And are not constituents of either of the units.....Connectors
   And are constituents of one of the units.....Relators.
2. Words which intensify a single syntactic unit
   And are neither adjectives nor adverbs .....Intensifiers
3. Words which are syntactically independent
   And are completely independent of the sentence.....Exclamations.

Another group of words which can be included with the function words are the negative particles, which transform affirmative words, phrases, or sentences into negative words, phrases or sentences.

The function words of Mundari are considered under these headings:

(1) Connectors: The connectors are function words or suffixes which are used syntactically to connect two similar units. These include such forms are oro,'and'; enete,'and then'' ena mente,'therefore'

(2) Relators: The relators, which include what is ordinarily known as the prepositions and subordinating conjunctions, connect words,phrases or clauses to the main sentence, while indicating their dependence.

(3) Intensifiers: The Intensifiers modify a single word or phrase, and include both bound and free forms. They are of little importance to syntax, but place emphasis upon a particular word or phrase

(4) Exclamations;The exclamations include all the interjections and vocatives of the language; all words which can occur within a sentence but without affecting the syntax of the sentence itself.

(5) Negatives: The negatives of the language are the particles which transform words, phrases, or sentences into the corresponding negative. The main negatives of Mundari are alo-,'don't', and ka, 'not'

Because of the agglutinative nature of the Mundari language, many of the function words are the formative elements used in the noun system,as well as certain bound emphatic particles. In each class of function words, bound forms must be distinguished from free forms.

1. CONNECTORS(C)

The Connectors(C) of the language are the function words which connect two similar syntactic units, without being an immediate part of either unit. These purely mark a connection. They are the coordinating conjunctions of a language. In Mundari, they may be bound or free.

1.A. BOUND CONNECTORS

The bound connectors of Mundari include some of the suffixes already seen in the noun system, and some of the emphatic particles. The suffix -re,'in,at,on'is used, with the meaning -re,'if' in some connectors, and in independent usage with particles denoting condition. The suffix -do,'but,however' is an emphatic final particle, which appears with connectors or any other word, as a corrective.

1.B. FREE CONNECTORS

The free connectors of Mundari include simple and derived forms. The simple forms are single morphemes, and are used primcipally to connect single words and phrases, only rarely sentences:

oro, 'and' also ondo,'and'

ad', 'and' also ado','and'

mendo, 'but'

The derived connectors, formed from a base with one or more suffixes, are most frequently used to connect the clauses of the language.

en-re, 'in that(time); in the meantime; meanwhile'

ena-re, 'if that be the case; if that be so'

en-re-o, 'even if that be the case; still, nevertheless'

en-te, en-te-do, 'and then; thereupon' (also enad', enad'do)

en-ate, en-ate-do, 'from that' thereupon'

Some derived connectors are formed from the quantitative adjective base -min-, quantity, with a demonstrative prefix, and -re as suffix.

imin-re, 'if it be so much; if so'

imin-re-o, 'even if it be so much; even so'

Phrases consisting of a base with the free form postposition denoting purpose, mente, 'for', also serve as ordinary connectors.

nea mente, 'for this reason; therefore'

ena mente, 'for that reason; therefore'

True disjunctive connectors of the 'either...or' and 'neither...nor' type type do not exist in Mundari. Either the disjunction is a question, or it is a statement. For disjunction, the Munda uses these particles:

Statement: ka-re-do, 'if not; or else'

hende-ge-a, karedo pundigea, 'It is black, or else it is white.'

Question: ci ka?, 'or not?'

senape ci ka?, 'are you going, or not?'

The Hindi forms na...na, 'neither nor' are occasionally used in Mundari.

2. RELATORS (R)

The Relators(R) of the language are the function words which connect two units and are immediate constituents of one of the units. These usally include the subordinating conjunctions and prepositions of a language. In inflected languages, the case endings are a type of relator. In Mundari, the relators are bound and free relators.

2.A. BOUND RELATORS

The bound relators of Mundari are the suffixes called case endings under the noun system. These include the genitive endings, and the other oblique endings both locative and non-locative.

a) The genitive endings include the suffixes -a', -ra', and the locative based -taren, -ren, -rea. These are added to noun stems, and make of these noun stems adjectivals which are then subordinate to some other noun. The suffixes are relators between the two nouns.

b) The locative endings include the 17 locative suffixes derived from the suffixes, -re, -te, -ete, -tai, -sa', -kore, -kote and their combinations. These are added to noun or adjective stems, and transform them into adverbials, which then act as adjuncts to the sentence structure. The suffixes act as relator between the noun or adjective so inflected, and the clause structure in which it occurs.

c) The non-locative oblique endings include the suffixes -lo', -leka,

-te(ins) and semi-bound relators such as -a' horate, begar...-te. These suffixes are added to noun and adjective stems and transform them into adverbials which act as adjuncts to the sentence structure. The suffixes act as relators between the noun or adjective, and the clause structure in which the inflected form occurs.

2,B, FREE RELATORS

The free relators of Mundari are the postpositions, whether simple or derived, which occur after the word which they govern. The noun which is governed remains in the direct case, and is uninflected.

a) The simple postpositional relators are very few in number"

jaked','until'	(EM.1964) Nag.jaked'te
-ta',jaked','up to,as far as'	locational relator
mente,'for; because'	(EM.2817) ins.case of men,'say'
nagen,nagente,'for'	(cf.EM.2908) Nag.lagen,lagin.
hami',hamite,'as far as'	(cf.EM.1549, haba')

The prepositions borrowed from Hindi are often simple postpositions:

biter, r.,'inside'	bahar, r.,'outside'
begar,r.,'without(preposed)	sam, r.,'with'(preposed)

Most of these relators are simple postpositions which govern a noun or noun phrase, and relate it to the sentence in which it occurs. The free relator, mente,'by saying', is used to express"indirect" discourse. The direct words are given, following by the relator,mente.

b) The derived postpositional relators are all adverbs formed from adjectives stems, with the addition of locative suffixes,-te,-re,etc. as already described under adverb formation,(cf. 4.B.1.Adverbs) These words may occur independently as adverbs, or may act as postpositions governing the noun or noun phrase immediately preceding.

aiarre, av.,'ahead'

dáru aiarre, 'in front of the tree'

paromre, av.,'across'

gara paromre, 'across the river'

Adverbs formed on a noun base, as described under the formation of adverbs, can also act as postpositional relators in Mundari:

genare, av., 'on the border'

bir genare, 'on the border of the forest'

Note that the object that is governed by the postpositional relator occurs directly before the postposition which governs it. If the noun is inanimate, it is not inflected for case; but if the noun is animate, then it stands in the genitive case, and takes the suffix -a','of'

aiarre, av.,'ahead'

aina', aiarre, 'ahead of me'

horate, 'by the road'

aina' horate, 'by way of me; with my help'

This construction is used for all of the derived postpositional relators in -re,-te,-ete, etc. whenever the noun governed is an animate noun. All such nouns must be in the genitive case, with the suffix -a'.

3. INTENSIFIERS (I)

The Intensifiers of the language are the function words which are syntactically linked with a single syntactic unit, which it emphasizes or intensifies. Some of these are wide range intensifiers which may emphasize any word in the structure; other intensifiers are limited to particular word classes. Both bound and free forms occur.

3.A. BOUND INTENSIFIERS

The bound intensifiers of Mundari are the suffixes which are added after the case suffixes and usually occur in final or near-final position. These suffixes may be restricted or unrestricted!

a) The unrestricted intensifiers of Mundari include the following:

-ge, 'indeed; certainly' also ge-dang,

-dang, 'indeed;certainly'

-tera, 'probably'

-ja', 'perhaps; possibly'

-o, 'also,too; even'

-do, 'on the contrary; but,however'

b) The restricted intensifiers are restricted to the adjective class:

-no!, 'rather; a little' also no'ge

-uter,'very'(with qualitative adjectives)

-leka$_2$, 'approximately; rather'

3.B. FREE FORM INTENSIFIERS

The free intensifiers in Mundari are few in number, and appear under specified conditions. They occur much less frequently than bound forms. The form oro,'and', is used to form the comparative degree of adjectives, in a use paralleling that of the Hindi form, aur,'and'.

e.g. bugin, aj.,'good' oro bugin, 'better'

The true Munda speaker would prefer the construction with -ete,'from'.

e.g. en horo-ete bugin, 'better than that man.'

The form honang,'perhaps', is used with the indicative mood to indicate what would be the situation if certain conditions should be fulfilled. Placed after a conditional clause with -re,'if', the form honang marks a contrary-to-fact condition. The main verb is indicative (cf.MG.205).

e.g. orate senre-ng honang, mandi-ng jomea.

'If I were to go home, I would eat dinner.'

The form derang,'certainly', and cilang,(cimad),'most probably' are used with the main clause to denote actual fulfillment of a condition. In these complex conditional constructions, honang occurs in the clause with -re,'if', and the forms derang,etc.occur after the main verb.

e.g. orate senre-ng honang, mandi-ng jomea derang.

'If I go home, I will certainly eat dinner.'

In the same context, cilang,cimad could be used, meaning 'probably'. The free form intensifiers isu, pura', isu-pura','very', are used to intensify adjectives and adverbs, which they immediately precede.

4. EXCLAMATIONS

The Exclamations(E) or interjections of the language are the function words of the language which are syntactically independent of the utterance in which they occur, or by themselves form an utterance. They include the vocatives of the language, and all interjections.

4.A. VOCATIVES

The Vocatives in Mundari are nouns in the direct case, and are generally unmarked; however, there are a few optional vocative suffixes

-a, added to vocatives in familiar address.

suffixed to any part of speech,especially in commands

Paulus-a, 'Paulus!' hijume-a,'come!'

Similar particles occur in particular environments. The particle -ga, used with women relatives; and the particle -na with young girls. Only -a is used generally, the others restricted to the family.

4.B. INTERJECTIONS

The interjections in Mundari are many and varied, the following gives some indication of their range and their use:

a) Affirmative: he, 'yes' also hege, he-gedang

he oro, he derang, he honang

b) Dubitative:	idu, iduoro,	'perhaps'
	idu hale,	'who can tell'
	idutam,	'I don't know'
c) Negative:	ka, 'no!'	also, kage, kagedo,
	ka oro,	'isn't it?, to be sure'
	ci ka?	'isn't it?'; 'or not?'
	alo-, 'don't'	(with imperatives/optatives)

Other particles are used independently as injections for a variety of emotional situations, or to indicate motion to or from.

dola,dolabu,'let's go!'	also dollang(dual)
ju, ju senome, 'go away'	used for intentional rudeness
ela, hela,	used for surprise
tirbole,	congratulations
heina, ajaga,aianga,	pain or grief
eho!	hey!
ke!	how wonderful!
mar, martobe	'all right'
he mar, mar heu	'all right'

Forms derived from the verb stem bano', 'not to be,to be absent' are also used as interjections, in the following various combinations.

bano', bano'ge,	no
ban-re-do, (ka-re-do)	if not

Other interjections or vacatives that are syntactically independent may be included in this list, which is not exhaustive.

PART III

THE SYNTAX OF MUNDARI

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PART III

THE SYNTAX OF MUNDARI

Language is a code by which a message is sent from a source to a destination. In the study of phonology, we have considered the message in the channel as made up of bits, or phonemes, which are capable of changing the meaning of the message. In the study of morphology, we have considered these bits as grouped together into units, or morphemes which carry parts of the message. In the study of syntax, we consider how these meaningful units, or building blocks, are arranged into structures carrying the message.

The phonemes, or bits of the signal, do not have meaning of their own, but they are capable of changing the meaning of a lexical unit or morpheme. The meaning potential of a phoneme is sometimes called <u>differential meaning</u>. The morphemes of the language do have a meaning, which is listed with the morpheme in the lexicon. This is <u>referential meaning</u>. But the linguistic meaning of an utterance involves something more. When a word is used in a grammatical structure it assumes the meaning imposed by its place in that structure. This meaning is called the <u>grammatical meaning</u> of the form in context. Beyond this, there is a socio-cultural context in which the grammatical structure is used, but this added meaning is not linguistic meaning.

<u>Linguistic Meaning = Referential + Grammatical</u>

The study of syntax involves the study of grammatical structures and the grammatical meanings conveyed by these structures. It involves both the forms which are used in structures, and the function which these forms have in the structure. The forms have already been considered in morphology. But syntax considers particularly the function of these forms in the construction: In construction, something new has been added. What does this form mean in this construction? What new and added meaning has it taken on in this particular arrangement?The unit parallel to the phoneme of phonology, and the morpheme of morphology, is the tagmeme, a unit of grammar.

The tagmeme is a function-form relationship. It is a correlation between a functional slot, and a filler form class. Tagmemes sometimes have more than one functional or grammatical meaning. The different functions of a tagmeme are called tagmas, (from the Greek word, tagma, 'arrangement'). When a single tagmeme has several variants, these are said to be allotagmas, or 'other arrangements' of one and the same tagmeme. This tagmeme then represents a set, or class, of arrangements which are similar enough to be grouped together, but not identical. For example, the subject of a sentence is a tagmeme. It has not one,but several meanings, It may be an agent, the recipient of the action, a thing being described. But all of these meaningful arrangments are similar enough to be grouped under one subject tagmeme.The tagmeme is a universal, whose comprehension is made up of the distinctive features

of arrangements carrying grammatical meaning, and whose extension includes all of the particular forms and form classes which actually appear in this functional slot carrying this grammatical meaning. As universals, tagmemes do not occur; they are manifested by particular forms in particular arrangements. It is the task of the analyst to state which forms occur in which functional slots, and to define the slots relative to the constructions in which they occur.

Tagmemic Analysis is the process by which the tagmemes of a language are isolated and grouped into meaningful sets according to the constructions in which they appear at various grammatical levels. This type of analysis involves the following basic assumptions:
(1) Forms have Function: Every form that occurs in an actual utterance occurs with a specific function relative to the construction in which it occurs. Every form can be specified as to its functional slot.
(2) Hierarchical Levels: Constructions do not occur in a unilinear string but in a hierarchically structured model composed of levels, with lower levels typically mapping into higher levels of construction. In tagmemic analysis, and only in tagmemic analysis or similar systems, the taxonomy of description extends to the functions of syntax. Not only form classes but functions also are named in a function-form system of symbolization. The levels at which these function-form units occur are generally given as the sentence, clause and phrase levels. Word and stem level constructions are often relegated to morphology.

The Principles of Tagmemic Analysis, by which the utterances of a language are segmented and grouped into tagmemes, can be reduced to the following general rules for establishing tagmemes:

(1) The Principle of Identity. Invariant tagmas, which have only one set of manifesting form classes, associated with a constant function, are tagmemes. Variant tagmas with a single function and many different manifesting form sets, are allotagmas of the same tagmeme.

(2) The Principle of Contrast and Complementation. Tagmas which are found to co-occur in the same construction, are assumed to belong to different tagmemes, unless it can be established that they are a repetition of the same tagmeme. Tagmas which are mutually exclusive may belong to the same tagmeme. Every tagma has a distribution which is relative to the construction in which it occurs; this distribution will always be assumed contrastive, when the tagmemes occur together, and assumed non-contrastive, when the tagmemes do not occur together.

(3) The Principle of Grammatical Symmetry. In the grouping of tagmas under a tagmeme set, the resulting tagmeme must fit the emerging grammatical structure, Tagmemes are set up as units, within specific constructions at specific levels of the grammatical hierachy, with resulting simplicity in the statements of the emerging model.

(4) The Principle of Economy. That description is presumed to be best which involves the simplest statements of the structures of the given language, with the least number of resultant tagmemes. In multiple concordance, however, two statements are often simpler than one.

Tagmemic Procedures are discovery procedures, which are partly inductive and partly intuitive. The general procedure is as follows:
(1) Data: the utterances of the language are given in a phonemicly transcribed text, together with the gloss for each utterance. The gloss is used as a guide for grouping of elements into unifying functions.
(2) Insight: it is the work of the analyst to use his intelligence to perceive the intelligibility of the data as presented. This is, in the first instance,a guess-and-check procedure,in Longacre's terms,or, according to Pike, an analytical leap. It is not mechanical.
(3) Hypothesis: From insight into the intelligibility of the data, there is formed an etic hypothesis, which states the functions of all forms in terms of a general hypothesis, intended to explain the data, but this hypothesis must be further tested against all texts.
(4) Verification: The hypothesis formed is tested widely over a wide range of data. It found to be universal, it is set up as part of a permanent emic theory of the language, a theory which represents the psychological habits of the native speaker as he uses the language.

This procedure is not in any sense a mechanical discovery procedure. The key to its working is the intelligence of the analyst, which enables him to see into the intelligibility of the data, by an intelligent insight into the workings of the minds of other intelligent beings. Tagmemic presentation,on the other hand, is perfectly empirical and scientific; the results can be tested by any other analyst.

An adaptation of tagmemic procedures, currently coming into focus,is the realization that over a wide range of languages, there are four universal kinds of functions which emerge as essential to language structures. These are the nominal,verbal,adjectival and adverbial functions. If these be given metaphorically in terms of a drama,

(a) The nominals are the dramatis personae,-a term currently being widely used by Longacre. They include the subjects, objects, indirect objects, and object complements. The fillers in these slots are the nouns, noun substitutes, and nominal expansions of the language.

(b) The verbals represent the action of the drama, or the plot. They have the function of specifying what the characters do in the drama. They include the predicates, and are filled by typical verb forms and verbal expansions in the language.

(c) The adjectivals represent the costuming of the play. They are not significant at the clause level, but play an important part in the modification structures, the endocentric type, at the phrase level. They are associated,as modifying elements,with the dramatis personae.

(d) The adverbials represent the stage scenery of the play. They do not affect directly the main action or the characters of the play,but act as sentence adjuncts, specifying modalities of time,place,manner.

Beginning with these four functions as the universal functions of language, other sub-functions can be diagnosed for particular languages as the language structure demands; but the final emerging model will show an interplay between these four functions,and these only.

The Results of Tagmemic Analysis will be the tagmemes of the language identified and arranged in strings, or constructions, within a system of grammatical levels. Tagmemes will be listed as obligatory or optional to the constructions in which they occur. They must also be classified as nuclear or non-nuclear. A nuclear tagmeme is a tagmeme that is diagnostic of the construction in which it occurs. Nuclear tagmemes are not always obligatory, but obligatory tagmemes are always nuclear. An optional object, for example, with a transitive verb is still considered to be nuclear, because it diagnoses the construction as a transitive construction. The total expression of the grammar of the language in terms of tagmemic formulas is called a syntactic model.

The tagmemic-transformational model is a syntactic model made up of tagmemic statements, with the use of transformational statements where required. Transformational rules do not constitute a separate component of the grammar, but are a device used for simplicity of grammatical statement wherever they are required in the structure. This model consists of a series of statements at the sentence level, the clause level, and the phrase level, intended to represent in simple fashion the psychological habits of the native speaker of the language. By these syntactic statements, the utterances of the language, and only these utterances, may be generated. Each statement requires a specific ordering of construction and expansion possibilities. The relations between constructions must also be expressed.

A syntactic statement consists of a variable, a rewrite symbol, and a syntactic expression. The variable is the construction name. It indicates both the name of the level at which the construction occurs, and the type of construction which occurs. A variable name, such as "noun phrase" indicates that the construction is a noun type construction on the phrase level of syntax. The variable name is written to the extreme left. The rewrite sign is an equals sign. This means that the construction, wherever named with its variable symbol, may be rewritten as the syntactic expression which appears to the right of the equals sign. The syntactic expression includes whatever is written to the right of the rewrite symbol, and indicates the components of the construction.

A syntactic expression, in the system of tagmemic analysis, consists of a string of tagmemes, marked as optional or obligatory to the construction in which they appear. Each tagmeme is a grammatical unit, consisting of a functional slot within the construction frame, together with the filler class of morphemes or morpheme sequences that can fill this slot. There is a mutual relationship between the tagmeme and the construction in which it occurs. The number and kind of tagmemes that occur define the construction, yet the tagmemes only are intelligible in terms of their mutual opposition to other tagmemes within the same construction. For example, a Subject is opposed to a predicate, and a predicate opposed to a subject, in normal clause construction.

The Syntax of Mundari is determined by the agglutinative nature of the language. Mundari has a word oriented syntax. This syntax is further defined as a centered syntactic model, in which the finite verb form is a full clause in minature, and represents the total utterance

Finite Verb = Verb form + object + subject

Other elements of the Mundari utterance specify the subjects and objects already expressed in the verb form, as well as the sentence adjuncts of time, place, and manner.

(1) Verb forms usually occur in final position and express the total content of the clause. A Mundari finite verb is a complete utterance, and other elements can only specify the elements in the verb.

(2) Noun forms occur as either marked for case, or not marked for case. Noun forms unmarked for case are direct forms, and these forms occur as nuclear elements in the clause, specifying the subjects and objects of the clause. They are always nuclear, but never obligatory.

(a) Noun forms in the genitive cases act in an adjectival function with respect to the direct noun forms. They occur in modification structures at the clause level, with the direct nouns as heads of constructions.

(b) Noun forms in the other oblique cases act in an adverbial function, and are used to fill adverbial, or adjunct slots, on the clause level. They may represent adjuncts of time, manner, place, or purpose.

(3) Adjective Forms are uninflected, and are found in syntax in an adjectival function, modifying nouns in the direct case. They may also

occur in a predicate adjective position, related to a noun subject through the intermediacy of a linking verb or verb particle. (4) Adverb forms are uninflected, and fill adjunct slots on the clause level. They are either simple morphological forms defined by syntactic usage, or are formed by the nominal oblique endings used with adjectives and are thus formally recognizable as formed adverbs.

In Conclusion, forms are either marked or unmarked for syntactic function. The essential verb forms are marked by the typical verb suffixes, and the forms occur in final position. When two words or more occur, the pronominal subject is broken from the verb and attached as a suffix to the preceding word, but it still belongs to the verb form. The essential noun forms direct are unmarked, but are recognized either by plural markings,when they occur,or by the ability of such forms to take the typical nominal case endings. The essential adverbials are sometimes marked by the oblique noun suffixes, and elsewhere fill the same slots as forms marked with these endings:-re,-te-,-ete,etc. The adjectivals, proper only to the phrase level in endocentric-type structures, are unmarked, but fill the same slots as nouns with the genitive suffixes, or are recognized as members of closed lists of adjectives, or function syntactically like the genitives and the closed lists of numerals,demonstratives,indefinites,etc. Function words are closed lists of words occuring in specific minor functions, and are not relevant to the larger emerging grammatical picture.

1

THE MUNDARI SENTENCE

Sentence level constructions are those constructions in which the constitute is an isolated utterance, and the constituents are the various bases that underlie the utterance,syntactic linking particles and intonational patterns. The sentence level construction has often been compared to the first cut in immediate constituent analysis in which the intonational pattern of an isolated utterance is separated from its base. But in addition to this primary cut, the bases which remain must be sorted out into many kinds of major and minor bases. This operation is best carried out at the sentence level. so as to leave the subsequent clause level analysis uncluttered with this kind of detail. The resulting clause analysis will be a straightforward resolution of the base into subjects,predicates,objects and adjuncts.

A Mundari sentence is an isolated utterance, together with its characteristic intonational pattern. Utterances are isolated either by change of speaker, by significant phonological breaks in the stream of speech or by characteristically final intonation patterns. A sentence without its intonation pattern,i.e. subsequent to this first cut, is a sentence base. This base may be complete or incomplete, and also may be simple, complex or compound syntactically.

(1) A Sentence is either complete or incomplete,

(a) A complete sentence is a sentence containing a finite verb;

(b) An incomplete sentence does not contain a finite verb.

An incomplete sentence may be elliptical or non-elliptical,

1. Elliptical Sentences supposes a finite verb ellipsis.

a) Additions, to Statements spoken

b) Responses, to Questions asked

c) Interruptions, which break the structure.

2, Non-elliptical sentences suppose no finite verb.

a) Titles, a direct noun phrase

b) Vocatives, independent of structure

c) Exclamations, of pain,surprise,joy,etc.

(2) Complete Sentences are simple, complex, or compound,

(a) A Simple sentence contains a single finite verb,

and has no embedded sentence strings.

(b) A complex sentence contains a single finite verb,

with one or more embedded strings.

(c) A compound sentence contains more than one finite verb,

with or without embedded strings in each part.

(3) Complete sentences are Statements,Questions,or Commands.

(a) A statement expects no particular response

(b) A question expects an answer response

(c) A command expects an action response

The typical sentence is a simple, complete, statement.

1. ELLIPTICAL SENTENCES

Elliptical sentences are incomplete sentences which suppose the ellipsis of a finite verb form; non-elliptical sentences do not suppose the ellipsis of a finite verb form. Non-elliptical sentences include Titles, vocatives, and other exclamations; elliptical sentences include additions, responses and interruptions. The elliptical sentence is not a new type of structure, but a lack of structure. Elliptical sentences with the exception of interrupted ellipsis, can be restored, by recourse to the statements or questions which produced the ellipsis.

(a) Additions are elliptical sentences which occur as additions to a statement. Among these minor sentence types are included all of those sequential statements which suffer the ellipsis of the finite verb. Such additions are particularly frequent in dialogue, or in correction of a narrative of one speaker by a second speaker, or in simple requests for further information. In any such interchange, the full utterance can be reconstructed in the light of the initial complete utterance.

A: Hola Ranchi-te-ng senkena. 'Yesterday I went to Ranchi.'

B: Samu lo'... '...with Samu....'

A: Samulo'ge. 'Yes, with Samu.'

The second and third utterances are easily reconstructed as:

B: Samu lo' senkenam. 'You went with Samu.'

A: Samulo'ge-ng senkena. 'Yes, I went with Samu.'

It is absolutely required for ellipsis that the finite verb form be omitted. The inclusion of a finite form form produces a complete clause; as the verb form alone constitutes a complete clause in minature. For example, the Mundas frequently repeat the last word of a narrators sentence structure, which is almost always a finite verb, in order to show that they are following the narrative, and have heard the sentence.

A: Hola Ranchi-te-ng senkena. 'Yesterday I went to Ranchi'

B: ...senkenam.. 'You went...'

A: Enete pit-re sunum-bulung-ing kiringkeda. 'And bought...

B: ...kiringkedam... 'You bought...'

In this class of polite echoing procedure, the utterances of Speaker B are complete utterances, consisting of a single finite verb form. These sentences of Speaker B are not therefore, considered elliptical.

(b) Responses are elliptical sentences which occur in reply to questions. Among these minor sentences are included all replies to questions which suffer an ellipsis of the finite verb. They may be reconstructed by transforming the question into a statement, including the response.

A: Hola okotare-m senkena? 'Where did you go yesterday?'

B: Ranchi-te.... 'To Ranchi.'

This question-response can be reconstructed in statement form, as

B: Hola Ranchi-te-ng senkena. 'Yesterday I went to Ranchi.'

This type of ellipsis is relatively rare; but one word responses occur he, 'yes'; ka, 'no', iduoro, 'maybe', etc.

This type of elliptical response is most frequently marked with the emphatic final particles, -ge, gedang, -do, ja', etc.listed under the nominal system, and occur as hege,'yes indded'; kage,'no indeed',etc.

(c) Interruptions are elliptical sentences which are major sentence types which in actual speech are interrupted before the occurence of the final finite verb form. There is no way of reconstructing such sentences, as only the speaker, and he not always, can reconstruct the sentence as it would have been if he had not been interrupted. It simply must be noted that such incomplete structures may occur in a text.

(d) Titles are also incomplete sentences,and may be considered a minor sentence type. But they are not characterized by the ellipsis of a finite verb form, they are essentially nominal structures, with all of the possible nominal expansions; an incomplete non-elliptical utterance.

e.g. Maturaa' Kahani, 'The Story of Matura'

Such incomplete structures are phrasal,not clausal in nature, and do not require a finite form of the verb to express their phrasal purpose..

(e) Vocatives, likewise are incomplete as sentence forms. They may be complete utterances, but do not require a finite verb form. In Mundari these vocatives are often marked with a diminutive type particle.

e.g. Paulus-a, 'Paulus,friend!'

(f) Interjections,syntactically independent,are also minor types.

2. COMPLEX AND COMPOUND SENTENCES

Complex Sentences contain a simple clause with a single finite verb, and one or more embedded clauses; a compound sentence contains more than one simple clause, with or without embedded sentences. These elements may be called independent and dependent clauses. Simple sentences have a single independent clause, complex sentences have an independent and one or more dependent clauses, and compound sentences have more than one independent clauses. In Mundari, these independent and dependent clauses are defined by the verb forms.

(a) Compound Sentences contain more than one independent clause, that is, they are characterized by the occurence of more than one finite verb form in independent usage. These compound sentences may occur in simple parataxis without a connector, or may be joined by connectors. These connectors may be either conjunctive or disjunctive connectors:

Conjunctives: oro,'and'; ad',and'; mendo,'but',etc.

Ranchi-te-e senkena oro sunum-bulung-e kiringkeda.

'He went to Ranchi, and bought the necessary items.'

Conjunctive propositions are even more frequent with the connectors derived from the demonstrative and other adjectives, such as:

enre, 'meanwhile	enreo,'still,nevertheless'
enate,'and then'	enamente,'therefore'
iminre, 'if so'	iminreo,'even so'

Indirect Discourse, in Mundari, is a type of compound sentence which contains two finite verbs, one representing the verb in direct discourse and one verb form representing the verb 'to say'. It is similar also to a complex sentence, in that the verb in indirect discourse, while unchanged in form from direct discourse, is subordinated to the verb 'to say' by means of a postpositive participle,mente,'saying':

Direct: Hola Ranchi-te-ng senkena.

'Yesterday I went to Ranchi.'

Indirect: Hola Ranchi-te-ng senkena mente-e kajila'.

'"Yesterday I went to Ranchi",saying, he said.'

for, 'He said he went to Ranchi yesterday.'

Metalinguistic Discourse,in Mundari, is another type of indirect discourse, in which the subject is language about language, such as the phrases:"What do you call this? What do people say in this situation?" Here the formal expression, no matter how long, is understood to be in quotation marks, and acts as the object of the verb,'to say'; in the response, the formal expression is used as a predicate, complete with its own mood marker and pronominal subject. [MG.134-135].

Question: Nea cikana-pe kajia?

'What do you people call this object?" (this work?)

Response: "Hake"-a-le.'

'We call this object an "axe"'

Response: Nea-le "Mindi-ko gupitana"-a.

'We call this "they are herding the sheep".'

Literally,this is translated:"We 'mindiko-gupitana' this.' Similarly, in asking a question about a finite ~~verb~~ form in metalanguage,we ask:

Question: Cikana-pe "siu'tanako"-a?

'What do you mean by the Phrase "siu'tanako".'

('You "siu'tanako" what situation?)

Response:"Pahal lo' kamitanako"+nea-le "siu'tanako"-a.'

'They work with a plough. This we call"siu'tanako".'

(We "siu'tanako" this situation: working with a plough)

In this metalinguistic discourse, no -e is ever inserted in the future or indeterminate tense, before the mood marker -a. With transitive verbs, an -e would ordinary be inserted as an inanimate direct object. This gives us a contrast between language and metalanguage,such as:

Ordinary: Nea-le sirma-e-a.

'We shall roof this, make a roof of this.'

Metalanguage Nea-le" sirma"-a.

'We call this "sirma" (a roof)'

H offman's rather strong statement that Mundari propositions never have more than one subject and one predicate is not intended to apply to Compound sentences, nor to Indirect discourse, nor to metalinguistic discourse. In all of these, more than one finite verb form may occur, and each finite verb form is complete with its own subject. He says:

> "The Munda never tolerates more than one Subject and one Predicate in even the most complex proposition. Subordinate clauses with special subjects and Predicates can never occur in a Mundari proposition." [MG.Intro.lv.]

(b) Complex Sentences contain an independent clause with a single finite verb and one or more embedded dependent clauses. These clauses do not have finite verb forms, so that complex sentences follow the rule given by Hoffmann that a sentence has only one subject, one predicate. Subordinate clause types are embedded in different ways.(cf.MG.201-15). In general, dependent clauses are characterized by the absence of a mood marker; the resulting dependent verb form is a participle.

Relative Clauses are participial clauses used to modify or replace non-verbal elements in the main clause. There are no relative pronouns. Hoffmann gives the following procedures for their formation.(MG.lv)

1) Express the dependent clause as an independent utterance.
2) Remove the mood marker and pronoun suffix from the main verb.
3) Embed the resulting participial phrase into the main clause.

Example: The man who went to Ranchi yesterday has come.

Dep.Cl: Hola horo Ranchi-te-ø senkenø.(Delete -e, -a)
'Yesterday a man went to Ranchi.'

Ind.Cl. Hijuakana-e.
'He has come.'

Cmplx. Hola Ranchite senken horo hijuakanae.
'The man who went to Ranchi yesterday has come.'
(lit. 'The yesterday-to-Ranchi-having-gone man...)

Note that the pronoun of the dependent clause,-e, and the mood marker of the dependent verb,-a,have been deleted. The resulting participial phrase is then embedded into the main clause.

Conditional Clauses are governed by different transform rules.(MG.203) The mood marker is replaced by the conditional suffix, -re,'if', and the pronominal suffix which occured as subject becomes a possessive suffix. The procedures for the embedding of conditions are as follows:

1) Express the conditional clause as an independent utterance.
2) Replace the mood marker -a with the conditional suffix -re,'if'.
3) Whenever the subject of the conditional clause differs from the subject of the main clause, retain the suffix as a possessive marker.

Example: If I go to Ranchi, the man will come.

Dep.Cl. Ranchite-ng sena. (Replace -a with -re,'if')
'I will go to Ranchi.'

Ind.Cl. Horo-e hijua.
'The man will come.'

Cmplx. Ranchite senre-ng, horo-e hijua.
'If I go to Ranchi, the man will come.'
(lit. In-the-event-of-my-going to Ranchi...)

Note that,although the final -ng is interpreted as a possessive marker modifying the participle sen- , it is out of position and attached after the conditional -re,'if'. This order: Nominal + conditional + possessive can not be confused with other possessives, and is distinctive within conditional clauses. When the subjects of conditional and main clause are identical, this possessive suffix must be deleted.

e.g. Na' Ranchite sen-re, gapa-ing hijua.(not *sen-re-ng)
'If I go to Ranchi now, I will return tomorrow.'

Adverbial Clauses, the ordinary sentence adjuncts of time,place, and manner, are formed by reducing the dependent clause to a participle,to which the appropriate case ending is added: Some of these are:

1. Locational Clauses: marked by the locative suffixes,-re,-te,-ete,etc. but especially -sa',-ta','in the sense of 'near to..'; 'there where'

Marang daru ma'-ta', menaia. [MG.35]

'He is there where they are cutting the big tree.'

(Lit. nearby the cutting of....)

2. Temporal Clauses use the locative suffixes,-lo','at the same time as' -imta,'at the very moment'; -te,'when,after'; -ate,'since;from that time'

Gomke hiju-imta, ganta saripe. [MG.208]

'When the master arrives, ring the bell.'

3. Manner Clauses use the manner case suffix -leka,'as though,as if' This type of clause may also have strong overtones of purpose.Also -te.

En piala sabtea'banoleka-m sabakada. [MG.214]

'You have grasped that cup as if it had no handle.'

Adjectival Clauses are also formed using the genitive endings,-ra', and -rea', with or without the noun kaji,'a matter,an affair,an event'

Neado apuing menai-ra' kaji taikena. [MG.210]

'This happened at a time when my father was still alive'

(This was an affair of-the-time-when my father...)

In all of these clauses the participle acts as a verbal noun, inflected with the regular case endings, temporal,locational, instrumental, manner, and the genitive type endings in -ra', and -rea.

3. QUESTIONS AND COMMANDS

Statements are typical utterances which demand no particular response. These are in contrast with two other sentence formations, the questions, which expect an answer response, and commands, which expect an action response. Questions and commands differ from statements both in their intonational and stress patterns, and in their syntactic structure. The transformations required to change a simple statement into a question type sentence, or command type sentence are as follows:

(a) Questions of two types occur, a yes-no question, which expects the answer yes or no; and supplement questions, asking for information.

Q1. The Yes-no Question is signalled by a rising intonation, and may or may not be accompanied by a clause particle =ci, or cika.

Question: Ranchi-te sentanam? (rising intonation)

Ranchi-te sentanam-ci?(rising intonation)

'Are you going to Ranchi?' (Yes or no?)

Ranchi-te sentanam cika? (no rising intonation)

'Are you going to Ranchi or not?'

The rising intonation formula may be presented as follows:

Q1.Sent = Base: Clause ± Q.mk:-ci - Into:223↑

Read: A Question Sentence of type #1(yes-no question) consists of a base filled by a clause, an optional question marker slot filled by the interrogative -ci, and an intonational pattern, with rising intonation.

The falling intonation formula, which seems to expect the answer 'no' although the answer 'yes'might also be given is formulated as follows:

Q2.Sent = Base: Clause + Q2.mk.: cika - Into: 221

Read: A Question Sentence of type #2(expecting the answer 'nȯ'; consists of a base filled by a clause, an obligatory question marker slot filled by cika, and an intonational patterm, with falling intonation."

Q3. The Supplement Question is signalled by a member of the interrogative class, of the nominal,adjectival or adverbial form class.A statement is transformed into a question of this type by replacing a noun,adverb or adjective with the appropriate interrogative form. The response to the question is structurally identical with the question.

Question: Okota'te-m sentana?

'Where are you going?'

Ranchi-te-ng sentana.

'I am going to Ranchi.'

The interrogative class is a function class which has as its overlaid function the value of signalling that a question is being asked. These interrogative words must be known as items,to recognize the question, as there is no clue in the intonational pattern to signal a question. Some of the interrogative words that exercise this function are:

N/Aj	Who?	okoe?	okoni'?	Whose? okoea'?
N/Aj	What?	cikan?	cilekan?	How much? cimin?
Av	When?	ciula?	cimta?	How? cileka?, cilekate?
Av	Where?	okore?	okota'te?	Why? cinamente?

The interrogative oko, 'what?,which?' and its derivatives [EM.3082], are identical in form with the indefinites derived from oko,'some,any'. Context is generally the only norm for distinguishing the interrogative, but oko is never interrogative in phrases marked by the emphatic -do.

oko horolo'-m jagarkèna. [EM.3083]

'With whom did you speak?'/ 'You spoke with some man.'

oko kami mena'? [EM.3083]

'What work is there?' / 'There is some work.'

The interrogative ci, 'what?' [EM.0840] is used both as a formative for interrogative words, and as a clause clitic prefixed or suffixed. In independent use, ci?,'what?; what is it?' is a free form, a question.

(a) As a clause clitic, ci transforms statements into questions.

1.Before the clause: ci + particles a, ga, na, hale, etc.

cia? alelo' Ranchitepea? (Rising Intonation) [EM.0840]

'What? are you going to Ranchi with us?'

2.After the clause: -ci ± particles a, ga, na, hale, etc.

mone takate ne kasi-m omia ci? (Rising) [EM.0840]

'Will you give this gelded goat for 5 rupees?'

(b) In yes,no and doubtful questions, ci and cika are used.

1. Questions expecting the answer: "yes"

kaci-ing sena? / ka-ing-ci sena? (Rising) [EM.0840]

'Should I not go?'

2. Questions expressing a doubt: Response,"I don't know!"

tising kupulko hijua ci ka? 'Will guests come or not..?'

(b) Commands(C) are formed from statements by a set of simple transforms 1) The subject of a statement is written as a vocative subject, which then becomes independent of the syntax, and an optional slot.

2) The predicate of the statement is rewritten as a verb form in the imperative mood, with Ø marker, or optative mood, with mood marker -ka-.

3) The negative ka, used with statements, is rewritten as the command negative particle alo-, 'don't', when the statement is negative.

4) The intonational pattern is broken into two parts; the first intonation for the vocative, and the second for the main clause. Emphatic stress marks both of these new intonational patterns.

Imper.Sent = ±Voc: N - Into: 221 + Base: Imp.Cl - Into:221

Read: An imperative sentence consists of an optional vocative slot, filled by nominals with falling pattern of intonation, and a base slot, filled by an imperative clause, with a falling intonational pattern.

Paulus! Hijume!	Alope sena!
'Paulus! Come here!'	'Don't go(you,pl.)!'

Imperatives are limited to the four tenses in -Ø, -ta, -le, and -aka to form the simple, static, anterior and continuous imperatives. The subject of the imperative is limited to 2nd person -me, -ben-, and -pe. representing the singular, dual and plural respectively, 2nd person. Optatives are also limited to the four tenses in -Ø, -ta, -le, and -aka; to form the simple, static, anterior and continuous optatives. But the pronominal subjects of the optative are not limited to 2nd person. Both moods may occur in the active, middle or passive voices.

Imperatives also occur in a polite form, with the marker -ko'-. This marker occurs only in the simple imperative,where the tense marker is -Ø. It does not co-occur with any other tense marker. It may also occur in the optative mood,simple optative. This marker is also used elsewhere as a tense marker for intransitive verbs in the anterior future,and corresponds to the anterior future in -le of transitive verbs[EM.2447]

Imperative: Paulus! Hijuko'me! (or, hijukom!)
Paulus! Please, come!

Optative: sen-ko'-ka-ing, (ambiguous,with intransitives)
Let me go now,please(let me first go.)

Optatives have a simpler transformation that the imperatives:
1) The predicate of the statement is rewritten as an optative form, that is, the mood marker is changed from -a- to -ka- (k is inserted).
2) The Negative particle ka,'not' of the statement, is rewritten as the command negative alo-.'don't, in negative propositions.
3) A further transformation in negative propositions places the mood marker -ka- as an infix between alo-and its subject. With the optative fully marked by this negative compound,the main verb takes marker -a.

sen-ka-ing, 'let me go'
sen-ko'ka-ing, 'let me go,please.' (or,anterior future)
*alo-e sen-ka, 'don't let him go.'(rarely used)
alo-ka-e sena, 'don't let him go.'

In an elliptical use of the optative, the prior form consisting of the negative-mood marker-subject,is used as a verb: alokae-a,'don't let him'

4. ACTIVE, MIDDLE AND PASSIVE

Active Statements are typical of the kernel sentences of the Mundari language. Middle and Passive statements are partly syntactic and partly morphological transforms of the active sentences. The passive statement contains a passive verb form. In tense forms marked with -Ø, -tan-, or -jan-, the verb stem is marked with the passive suffix -o'. Elsewhere, the passive is formed by adding the intransitive tense markers to transitive verb stems. The middle statement contains a middle verb form. The middle voice marker is the suffix -en added to the verb stem, and distributed parallel with the passive verb suffix. In tense other than those in -Ø, -tan-, or -jan-, the addition of the intransitive tense markers to transitive predicates produces a form which may be interpreted either as a middle or as a passive form.

(a) Passive Statements, as statements which contain passive verb forms. In transforming an active statement into the corresponding passive, the following transformational rules must be applied"

1) The active verb form is rewritten as a passive verb form.
2) The direct object of the active form is rewritten as subject.
3) The subject of the active form becomes the agent of the action in the passive form, and is either omitted, or rewritten with an agent marker, such as -te, 'by' (inanimate) or -a' horate, 'by' (animate).
4) Subject-Object changes apply to both nominals and pronominals.

The following examples illustrate the active-passive transformation:

#1) Samu ceneko-e lelkotana. (Active Form)

'Samu is looking at the birds.'

Ceneko Samu-a' horate-ko lelo'tana. (°Passive Form)

'The birds are being watched by Samu.'

#2) Ceneko-ing lelled'koa. (Active Form)

'I first saw the birds.'

Ceneko ainga'horate-ko lellena. (Passive Form)

'The birds were first seen by me.'

(b) Middle Statements, are statements which contain middle verb forms. There is no subject-object transformation, as the subject and object of a middle-voiced, reflexive statement, are identical. The marker is en The contrast here is rather between active statements with different subjects and object, and reflexive(middle)statements, in which the subject and object are identical. The marker -en, or its equivalent, acts as a demonstrative direct object, -en, 'that'(same one).

dalitanae, 'he(one person) strikes him(another).'

dalen-tana-e, 'he(one person) strikes himself.'

It follows from this contrast that a transformation from the active to the reflexive voice is obligatory, whenever the subject and object of the transitive verb are identical. Other occuring active forms must be interpreted as having a different subject and object, even when the pronominal subject and object are identical in form. Such forms, are as dal-ing-tan-a-ing(=dalentanaing), dal-me-tan-am(=dalentanam)incorrect.

5. NEGATIVE STATEMENTS

Affirmative Sentences make up the kernel of the Mundari language. Opposed to the affirmative are the negative sentences, which are marked with one of the two negative particles, ka or alo-. The particle alo- is used only in the imperative and optative moods, in those four tense marked with -Ø, -ta, -le, and -aka. The particle -ko', when used as a politeness marker in one of these four tenses, also takes alo-. The negative ka occurs in all other negative sentences. The particle ka is also used to mark a negative nominal, adjectival, or adverbial, whether these be single words or phrases. As a sentence negative, it is usually associated with the finite verb phrase of the sentence.

(a) Negative with alo-,'don't' include all imperatives and optatives. The uses of the particle alo- as a sentence negative fall into four formal categories; imperative contrasts with optative, and direct is in contrast with indirect discourse. These uses are listed.[EM.0095]

1. Negative Imperative in Direct Discourse

Neg.Imp.Cl = Neg: alo- + Subj:pn +#+ P: Imp.V.

Complete Clause: alom hijua, 'don't come!' (vs.hiju'me)

Elliptical Clause: aloma', 'don't!' (No verb stem)

In the elliptical clause, the verb is not expressed, and the form is constructed as follows: Negative + Pronominal + Mood marker

Imperatives have a mood marker overt only in negative statements.

2. Negative Optative in Direct Discourse

Neg.Opt.Cl = Neg:alo- +Md:-ka- + Subj:pn +#+ P:Ind.V.

Complete Clause: alokae sena, 'Let him not go.'

Elliptical Clause: alokaea', 'don't let him.'

As with the imperative negative statements, once the mood is marked by the particle alo-, the verb form reverts to an indicative mood form. In both elliptical forms,the -a added to the form is checked a'[a?a].

3. Negative Imperative in Indirect Discourse; and optative.

With the verbs to say, refering to physical articulatory speech, or verbs to forbid,prohibit,refering to actual or mental speech,the imperative or optative is given in direct discourse, followed by the particle,mente,'saying'(aloud or to oneself),and the verb of saying. In this construction particular care must be taken to use the correct pronominals in the subordinate clause governed by the particle mente.

Imperative: alom hijua mente-e kajiaiña,

'He will tell me not to'come'(saying:don't come,you!)

Optative: alokae sena mente-ng manakedmea.

'I forbad you to let him go.'(saying:don't let him go!)

Some of the difficulties encountered with the sequence of pronominals are given in the following examples, listed in the Encyclopedia.

alokae rengeoa mente takaing omadmea,(saying:let him not)

'I gave you money to save you from poverty,' [MG."álo",97]

álokáling regoa mente banduk-e idikeda(saying: let us not)

'He took a gun so that they would not be robbed.'[MG.98]

(b) Negatives with ka,'not', include all forms of the indicative mood.

(1) Particle ka may occur with indicative predicates; as a simple marker it immediately precedes the verb form,with the pronominal subject suffix.

(2) Particle ka with the pronominal subject may be considered a verb stem,and take a mood marker, with an ellipsis of the main verb root. This impersonal construction means:'not to do,to be unwilling to do'; and may occur with the tense signs -tan,-jan,-jad,AFTER the mood marker.

(3) Particle ka may be used in a personal construction,as a transitive verb: to refuse,to deny, or as an intransitive verb,'to say no.'

In the personal construction,ka acts like a regular verb stem.

1. The Particle ka as a negative statement marker

Affirmative: tising mandi-e jomkeda.

'Today he ate his rice.'

Negative: tising mandi ka-e jomkeda.

'today he did not eat his rice.'

2. The particle ka in impersonal construction(ellipsis of main verb)

Complete: ka-ing sena, "I won't go.'

Ellipsis: kaina', 'I won't.'

This impersonal construction (ka + pron. + a') generates a base form which then acts as a verb stem, and is followed by tense and mood.

Simple Future: kaina', kama',kaea',kakinga', kakoa',etc.

Indef.Present: kaina'tana Indef.Past: kaina'jana

Imperfect: kaina'tan taikena Conditional: kaina're

Note also the nouns: kaeaini!,kakinga'king,kakoa'ko,'the ones who won't'

3. The particle ka in personal construction(as a verb stem)

Transitive:	en kaji sobenko kakeda.	[EM.2149]
(deny)	'all denied this statement.'	
	ale-do-e kakedlea.	[EM.2149]
(refuse)	'As for us,he refused us!	
Intransitive:	hola-ing kakena, tisingo-ing katana.	[EM.2151]
(say no)	'yesterday I said no;today also I say no.'	

Conclusion: The kernel sentences of the Mundari language are sentences which are (1) Simple,(2)Complete,(3)Active,(4)Affirmative,(5)Statements.

1. Simple sentences, opposed to complex and compound;
2. Complete sentences, opposed to Elliptical;
3. Active Sentences, opposed to Middle and Passive;
4. Affirmative, opposed to negative; and
5. Statements, opposed to Questions and Commands.

All of the non-kernel sentences of the language can be derived from the kernel sentences, by the set of transformations outlined at the sentence level. At clause level, the kernel sentences only will be considered, and analyzed into the unit tagmemes, the constructions in which these tagmemes operate, and the field or system in which the constructions of clause level are in contrast. The exposition of the units, the constructions, and the system at clause level give the core structure of the language, which is then fully determined by the transforms of sentence and the expansions of phrase level.

2

THE MUNDARI CLAUSE

Clause level constructions are those constructions in which the constitute is a complete sentence base and the constituents are the subject, predicate, object and adjunct tagmemes which occur in contrast within this base. A clause construction is a tagmeme string which typically includes one predicate tagmeme in the string, and which typically fills the base slot on sentence level. Analysis at the clause level is limited to the simple, complete, affirmative, active statements which constitute the kernel of the language. With this in mind, we approach the study of independent clauses in which the predicate slot is filled by a finite verb form.

The Mundari independent clause is an isolated utterance from which intonation has been cut and which contains a finite verb form in the string. In Mundari, the verb form is the only element at this level which is obligatory and by itself constitutes a complete clause. All other elements of the Mundari clause are optional. However, among these optional elements, the subject and object slots are considered nuclear, as they assist in the diagnosis of construction differences at this level. Adverbials of time, place, manner and purpose are adjuncts which are both optional and peripheral to the clause structure.

1.Units: the Mundari clause is a string of tagmeme units

Nuclear tagmemes: are diagnostic of clause structure

And obligatory: the predicate slot,filled by a finite verb

And optional: the subject and object slots,filled by nominals

Peripheral tagmemes: non-diagnostic of the structure

All optional: adjunct slots, filled by adverbials

a) Temporals: give time setting, When?

b) Locationals: give place setting, Where?

c) Manner: gives circumstantial setting, How?

d) Final: gives purpose of the action, Why?

2. Constructions: the constitute formed by the string of tagmemes

Transitive Constructions: marked by a transitive verb form

Verb form: marked for transitivity, infixed objects

Specifiers: direct object specifier slot

Intransitive Constructions: marked by intransitive verb forms

Verb form: marked as intransitive, no infixed object

Specifiers: no direct object specifier slot

Equational Constructions: marked by linking verbs

Verb Forms: essential and accidental links

Specifiers: predicate attribute slot,nominal or adjectival.

3. System: the arrangments of constructions in a matrix or field

System of Sentence and clause types (3 x 3 matrix)

Multiplication of this matrix by negation,or passivity

System of Clause elements,diagnostics (3x3 matrix)

1. CLAUSE UNITS

Clause units are the constituents which make up the clause level string. These units are tagmemes, or slot-class correlations, consisting of a functional slot and a filler class, which are manifested by morpheme sequences of the filler class manifesting the tagmeme's function ina particular clause structure. Functions are defined as terms of opposition within a specified structure. Because of this structure they signal a specific grammatical meaning in each structure.

1.A. NUCLEAR TAGMEMES

Nuclear tagmemes are tagmemes which are diagnostic of the structure in which they occur. Not all nuclear tagmemes are obligatory, but it will generally be found that obligatory tagmemes are nuclear. The nuclear tagmemes of Mundari at the clause level are either verbal or nominal direct, all other tagmemes are considered peripheral.

(a) The Predicate Tagmeme is that unit which consists of a predicate slot filled by finite verb forms. It is nuclear and obligatory,in fact, the only obligatory element within the Mundari clause structure.

1.The Predicate slot is that slot which has the function of expressing the actions of the nominals, or the relationships between them. It exists in virtue of a suppositum-appositum(topic-comment) relation with a subject, and may or may not be further specified by other nominals.

2. The filler class for the predicate slot is the class of verb forms In independent clauses at this level, the forms must be finite verb forms marked for mood and pronominal subject. Whenever there is an object direct or indirect, this object is infixed in the verb form. This filler thus already contains all essential clause elements:

Finite Verb = (Stem + Voice)+(Tense + Object)+(Mood + Subject)

The essential clause relationships between the subject,predicate and object of the Mundari clause is already expressed in the verb form.

(b) The Subject Tagmeme: is that unit which consists of a subject slot filled by nominals in the direct case. There must be a nominal concord of gender-number-case between the subject filler in the subject slot and the pronominal subject of the verb form in the predicate slot.

1. The subject slot is that slot which has the function of specifying in Mundari, the pronominal subject expressed in the verb form. This slot is optional, but nuclear in virtue of its close tie with the pronominal subject of the verb. Taken together, nominal specifier and pronominal subject stand in opposition to the verbal action.

2. The filler class of the subject specifier slot is a nominal in the direct case,which is not overtly marked by a case ending. It includes all nouns, noun substitutes, nominal expansions, infinite verb forms, or any other form exercising the nominal function, and in nominal concord with the pronominal subject already included in the verb form. Even when this slot is filled, the pronominal subject is also expressed therefore it is rarely filled except for 3rd person subjects.

Besides the essential subject-predicate relationship expressed in the predicate and subject specifier tagmemes, there is a series of other direct nominal tagmemes which complement the action of the verb: such as the direct object, the indirect object, and the predicate attribute tagmemes. Some of these cooccur with the subject tagmeme, and are distinguished from the subject only by concord with the pronominal subjects and objects of the verb form, or by their position in the clause.

(c) The Direct Object Tagmeme is that unit which consists of a direct object slot, filled by direct nominal forms. The direct object specifier is an optional tagmeme, but the direct object must be expressed in a pronominal form with transitive active verb forms, unless there is an indirect object. With an indirect object, either the direct object or the indirect object must be expressed,but both cannot be expressed.
1.The Direct Object slot is that slot which has the function of giving the goal of the verbal action, whenever the verb is transitive active. The direct object slot specifies the direct pronominal object which is an obligatory element of the verb form in the predicate slot.
2.The filler class of the direct object specifier slot is a nominal in the direct case. In form it cannot be distinguished from the subject. It differs formally with the subject only in its concord with the pronominal direct object in the verb, whereas the subject is in concord with the pronominal subject in the verb form. Cases in which the gender-number-case of subject and object are the same,are ambiguous.

(d) The Indirect object tagmeme is that unit which consists of an indirect object slot, filled by nominal forms, either direct case or marked by -ta','to'. Indirect object is usually marked either by -ta' in the noun object, or by -a with the pronominal object. The simple future in -Ø, the simple present in -tan, and the simple past in -ked, have an overtly marked indirect object,marked with -a. Elsewhere, in other tenses, the infixed object may be either direct or indirect.

1. The Indirect Object Slot is that slot which has the function of expressing the indirect goal of the verbal action. Where the indirect pronominal object is formally marked in the verb, this slot formally specifies the indirect object already expressed. Elsewhere, this slot is formally marked by -ta' and specifies the indirect object, whether or not this object is repeated pronominally in the verb form.

2. The Filler Class of the indirect object slot is a nominal, -direct if the indirect object is marked in the verb, or marked with -ta' when the indirect object is not formally marked in the verb. This leaves open the possibility of double ambiguity, with subject and direct object. Concord is a partial guide, but in many cases context alone will determine what is subject, what object, what indirect object. The usual order, according to Hoffmann, is Subject-Ind.Obj.-Dir.Obj.

Gomke dasi talab-e oma'ia. [MG.86]

'The master gave the servant his wages.'

Gomke dasi-e ra'ki'a. [MG.86]

'The master called the servant.'

(e) The Predicate Attribute Tagmeme is that unit which consists of a predicate attribute slot filled by a nominal or adjectival form. This Predicate attribute tagmeme is nuclear. It excludes the direct and indirect object tagmemes. It is obligatory in construction with a verb form, or verb suffix in a limited class of linking verbs.

1. The Predicate Attribute Slot is that slot which has the function of modifying or identifying the subject with the intermediacy of a verbal link. It is the link + attribute here which expresses the predicate. This function occurs in the predicate form usually in the present tense, and becomes an overt slot, as in past clauses with täikena, was.

2. The filler class of the predicate attribute slot is either a direct nominal or an adjectival. A direct nominal is a predicate appositive; a direct adjectival is a predicate adjective; both are included under the term predicate attribute. This is the only slot on clause level in which an adjectival enters into the essential clause structure. Concord of gender-number-case exists between the subject and a predicate attribute, when that attribute is a nominal. Adjectives, however, have gender agreement where contrasing animate and inanimate forms exist for the adjective, but have no inflection of number-case.

The Tagmemes at clause level may be viewed in a series of nested constructions. The verb form, or predicate tagmeme is the central nucleus. The subject specifier tagmeme, and other specifiers such as direct object, indirect object, and predicate attribute are also nuclear.

1.B. PERIPHERAL TAGMEMES

Peripheral Tagmemes at the clause structure level are tagmemes which are not diagnostic of the structures in which they occur. These tagmemes are always optional. They may occur, or not occur, without affecting the structure of the clause. They are optional adjuncts. According to Robert Longacre, the nuclear elements occur near the crest of a wave structure and are more sharply differentiated; the peripheral tagmemes occur in the decline of the wave, and cannot be always sharply differentiated from each other. All of thses tagmemes are alike in being filled by some type of adverbial or adverb phrase.

(a) Temporal Tagmemes are sentence units which consist of a temporal slot filled by temporal adverbs. There are always optional tagmemes.
1.The Temporal slot is defined as that type of sentence adjunct which gives the circumstances of time to the verbal action, beyond that already indicated by tense. This slot is defined by those temporal phrases, which normally act as responses to the question: When?,which is specified in Mundari by ciula? what day?; cimta? what time?
2. The temporal filler class may include adverbials, words or phrases, which answer the question when? and are formally marked as follows:
Unmarked temporal adverbs,such as na','now'; tising,'today',etc.
Locative marked adverbs,in -re,-te,-ete and their compounds.
Specific temporal suffixes,such as -sa,-ma,-sing,-imta(ng),-ula(hulang)

Although the temporal tagmemes partially overlap with the locational tagmemes with respect to the locative markers, it seems that the time slot should be considered distinct,not only semantically, but because of the additional markers found only in the temporal tagmemes.

(b) Locational tagmemes are units which consist of a locational slot filled by locational adverbials, generally marked by locative suffixes.

1. The locational slot is defined as that type of sentence adjunct position which adds the spatial axis to the verbal action, and whose manifesting morpheme sequences are responses to the question,"where?", indicated in Mundari by forms such as okore?, okota'te?, okota'ete?.

2. The locational filler class includes all adverbial words or phrases which answer the question:"where?" and are formally marked by the suffixes -re, -te, -ete, and their compounds with -ta',-sa',-ko-. The 17 derived locative suffixes are found with adjective stems as adverb formatives, with nouns and pronouns as case endings, and,with or without a base, as relators in adverbial relator-axis phrases. All of these fillers have this in common, that the locative suffix is the final element of the adverbial word or phrase, and in utterances of any length serve as partial juncture with falling intonation pattern, setting off these locative-marked elements from the main clause. Note the pause groups in long utterances such as the following:

Isu sirma sidare, ne otedisumre, miad marang horo taikena.
(T) (L) (S + P)

'Many years ago, in this country, there was a great man.'

(c) Manner Tagmemes are units which consist of a manner slot and a filler class filled by adverbs of manner. Under this tagmeme are also listed adverbs of accompaniment, agency and instrumentality.

1. The Manner slot is defined as that type of sentence adjunct which gives the circumstances of manner,accompaniment of instrumentality to the action of the main verb, in response to the question: How?
In Mundari,these questions are cileka? how, cikana? 'what kind?'

2. The manner filler class: includes those adverbials, words or phrases, which serve as normal responses to the question: how?, some of which are formally marked by the suffixes -leka,'like'; -teʔ(ins),'by,with' -lo',with'(accompaniment), and their compounds. The suffix -te is often added to adjective stems to form adverbs,like the English'-ly! Many adjectives occur in adverbial use,often marked by emphatic -ge. such as samage,'uselessly'; eskarge,'alone'; rokage,'suddenly'.

(d) Final Tagmemes are units which consist of a final,purpose slot filled by adverbs or adverbial phrases of purpose.

1.The Final Slot is defined as a sentence adjunct giving the circumstances or purpose,answering the question: Why?, cinamente?

2. The final filler class includes those adverbials and phrase which include the markers mente,'for'; nagente,'for'. The form mente is probably best considered as a free form, a special usage of a form based on the verb root men,'to say' and the instrumental -te,'by' All fillers of the final slot would then be phrases,not words.

2. CLAUSE CONSTRUCTION

Clause Constructions, sometimes called "syntagmemes", are the strings of tagmemes at clause level, containing at least one predicate tagmeme in the string, together with a series of nuclear and non-nuclear optional specifiers. Even a single predicate tagmeme is listed as a construction, because it is potentially expandable by the addition of one or more specifying tagmemes. Clause level constructions in Mundari include three basic types, based upon the verb form in the predicate tagmeme. Constructions may be transitive, intransitive, or equational.

2.A. TRANSITIVE CLAUSES

Transitive Clauses (tCl) are clauses in which the predicate tagmeme is filled by a transitive verb form. This form has transitive markers inthe tense sign, an obligatory pronominal object, and allows the co-occurence of the direct and indirect object specifier tagmemes. In common with other clause types, it alos allows subject specifiers, and any of the peripheral tagmemes added optionally to the string.

(a) Subjects precede direct objects or indirect objects.

Ceneko da' ka-ko namjada, 'The birds find no water.'

(b) Indirect Objects precede direct,unless the indirect is marked(-ta')

Gomke dasi talab-e oma'ia.,'The master gave the servant wages'

but, Ne sadomko ako-ta'-ing omkotana,'I give them the horses.'

(c) The order of adjuncts relative to each other, or to subjects and objects is not fixed. They must be marked as they occur.

The formulation for a transitive clause in Mundari is as follows:

tCl = ± S: N ± O: N ± IO:N(-ta') + P: tV

Read: A transitive clause construction consists of an optional subject slot, filled with a noun phrase, an optional object slot, filled by a noun phrase, an optional indirect object slot, marked as oblique(ta!) and an obligatory predicate slot, filled by a trans.verb.

This formulation, while correct, and giving information about the order of elements, at least as far as statistical preference is concerned, gives us no information about the concordance of the nominals filling the subject and object slots, and the corresponding pronominals that appear in the predicate slot. In order to show this concordance, a mixed level,-containing structures on word and clause level,-presentation must be given. The transitive verb active is formulated as follows:

tva = + vnuc:tvs ± i.m:-a- +tm:tt + obj:pn + md:md + subj:pn

Read: A transitive active verb form consists of a verb nucleus slot, filled by a transitive verb stem, an optional -a-marking indirect object, a tense slot filled with a transitive tense marker, an object slot filled by pronoun, a mood slot filled by mood marker, and a subject slot, filled by a pronominal suffix.

Whenever the Mundari utterance contains more than one word, that is, one word form in addition to the predicate, the final subject pronoun is detached from the predicate, and attached to the preceding word. This transformation is considered to be stylistically obligatory, but the pronominal subject taken from the verb form is still a bound suffix,

The concord that operates between the marco-units at clause level and the micro-units at word level can be illustrated by parallel formulas:

Clause level: tCl = + S:N ± IO:N ± DO:N + P:tVa
c c c
Word level: tva = + subj:pn + (± io:pn ± do:pn) + v:tva

Read: A transitive clause consists of an optional subject, an optional indirect object, an optional direct object, and a predicate.

A transitive active verb form consists of a pronominal subject, an obligatory object slot filled by either an indirect or a direct object, and the remaining elements of the tva verb form.

"c": There is person-number-gender concord between the macro-units at clause level and corresponding micro-units at word level.

(a) Occurrence of an optional macro-subject slot

The pronominal subject always occurs and is attached to the word which immediately precedes the predicate in any utterance of more than one word. If a macro-subject occurs, it agrees with this obligatory micro-subject pronominal in person-number-gender.

(b) Occurrence of an optional macro-DO slot, with no IO present.

1. If the direct object is inanimate, the micro-object is filled by -Ø.

2. If the direct object is animate, and no indirect object occurs, then the micro-DO must occur as an infixed pronominal object in the verb form. An optional macro-DO may also occur, but it must agree with the obligatory micro-object in person-number-gender.

(c) Occurrence of both DO and IO in the same utterance.

1. If the direct object is inanimate, the micro-DO is filled by -Ø.

If the indirect object is inanimate, it is not expressed.

2. If both objects occur, one must be infixed in the verb form.

The micro-object infixed in the verb may be formally marked as an indirect object, or may be unmarked, and therefore unambiguously a direct object, if the tense is a simple tense,in -Ø,-ked, -tan. Eslewhere the micro-object is ambiguous,and may be i.o. or d.o.. Since both, either,or neither of the objects can occur on the macro-level, the following possibilities may occur:

2a. Macro-d.o. with micro-i.o. (Two different objects,no concord)

gota gora hore-ing omakoa. i.o.

I will give to them(i.o.) a whole field of kurti(d.o.)

2b. Macro-i.o. with micro-i.o. (Same object, therefore a concord)

enete sarako-e kaji-ako-tana.

Then he says to the baboons:.....

Note: the micro-i.o. is marked as indirect by -a ,as -ako- the macro-object is in the direct case, sarako .

2.c Macro-d.o. with micro-d.o. (Same object,therefore concord)

Hasur-honko magirikoa-ing.

I will cut the Asur-children to pieces.

Note: the micro-d.o. is unmarked,-ko-(but contrast with -ako) the macro-object is unmarked: hasur-honko.

2.d. Macro-i.o. with micro-d.o. (Two different objects,no concord)

(Sadomko) ako-ta'-ing om-ko-tana. d.o.

I am giving them(the horses) to them.

Note: the macro-i.o. is marked by -ta', in the form akota' the micro d.o. is -ko-(in contrast with -ako-,i.o.)

The co-occurence of two macro-objects,direct and indirect, presents what might be called the "ambiguous case". The micro-object in the verb which follows these two marco-objects may agree with either.

3. The occurence of Macro-d.o. with macro-i.o. (free choice)

3a. The micro-object is given as indirect.

cauli honko-ta'-ing omed'koa. (om-a-ked-ko-a) i.o. = a-ko

I gave the rice to the children.

3b. The micro-object is given as direct.

cauli honko-ta'-ing omkeda. (om-ked-ø-a) d.o.= -ø-(inan)

I gave the rice to the children.

3c. The micro-object is ambiguously i.o./d.o.(in tenses exc.-ø,tan,ked)

sadomko honkota'-ing omled'koa.

I first gave the horses to the children.

In this final case, the -ko- infixed in the verb form omled-ko-a, may refer either to the d.o. sadomko, or to the i.o. honko(marked by -ta')

The Analytic procedure here is as follows:

1. Given an object, does this object occur in a tense where i.o.= d.o. in form, or in a tense where i.o. and d.o.contrast(-0,-tan,-ked)? If they contrast, then i.o. and d.o.are clearly known as such. If they do not contrast, then the macro-objects are examined.
2. Given an ambiguous object(in any tense except -ø,=tan,-ked), is there existing concord with an overt macro-object? Supposing two macro-objects,is concord possible with both objects? The concord tells us whether the infixed object is ambiguous or not.

2.B. INTRANSITIVE CLAUSES

Intransitive Clauses (iCl) are clauses in which the predicate slot is filled by an intransitive verb form. This form is marked for its intransitivity, and never takes an infixed pronominal object. The verb stem may be either a transitive verb stem or an intransitive verb stem, a transitive stem being a stem which elsewhere is capable of taking the transitive tense markers. A transitive stem marked with an intransitive tense marker is a transitive verb passive or middle.

The formulation of intransitive clauses includes the subject and predicate tagmemes in the string, but excludes the direct object tagmeme. If an indirect object occurs, it will occur as a minor phrase governed by mente,'for, or -ta','to', but can never be represented in the verb form as any kind of infixed pronominal object. It is the verb form,then,which in all cases, gives the nuclear elements of the phrase. Other elements in the clause are to be considered nuclear, only if they have a transform potential which would make then nuclear in the verb phrase in any normal transformation. In this latter sense, the agent tagmeme with a passive verb construction might be considered nuclear, because in the passive-active transformation,if would become the subject of the transitive verb active. Such phrase would occur marked by the agent markers -te,'by'(inanimate) or -a' horate,'by'(animate). These are nuclear only with the transitive verb passive (tvp),middle(tvm).

The Intransitive Clause in Mundari is formulated as follows:

iCl = ± S:N + P: iV/tvm/tvp

Read: An intransitive clause construction consists of an optional subject slot, filled by a noun phrase,and an obligatory predicate slot,filled by an intransitive verb phrase,or a middle or passive transitive verb.

The intransitive verb phrase shows concord between its subject pronoun and the macro-subject slot. There are no objects,and no object concord.

The formula for the intransitive verb forms at word level are:

iva:= + vnuc: ivs + t:tm + md: md.m.(+ subj:pn)

Read: An intransitive verb (active) consists of a verb nucleus slot, filled by an intransitive verb stem, a tense slot filled by a tense marker,and a mood slot filled by a mood marker, followed by a movable subject slot, filled by a pronoun suffix.

The transitive verbs in the middle and passive voice take a double rule of formation. Voice is overtly marked in the stem by -o','passive' and -en,'middle', in the tenses ending in -Ø, -tan, and irregular -jan. Elsewhere the middle/passive is formed by adding the intransitive tense markers to transitive verb stems. Here middle voice = passive voice.

tvm = + vnuc:tvs + voc:-en + t:tm.+ md:md + (subj:pn) (3 cases)

Read: A transitive verb middle voice consists of a verb nuclear slot filled by a transitive verb stem, a voice slot filled by -en, a tense slot filled by a tense marker a mood slot filled by a mood marker,and a subject pronoun.

tvp = + vnuc:tvs + voc:-o' + t:tm + md:md + (subj:pn) (3 cases)

Read: (as above) except passive voice has marker -o'

tvm/tvp = + vnuc:tvs + t:tmi + md:md + (subj:pn) (elsewhere)

Read: (as above) except.tense filled by intransitive tense marker

The key to intransitive clause structures is the intransitive nature of the verbal predicate, and this intransitivity is manifested in the tense markers, which are incompatible with infixed direct objects.

INTRANSITIVE FORMS			
	Intransitive verb active .	TV Middle/Passive	TV Active
Future: Simple	ivs + -Ø	tvs + -o'/-en + -Ø	
Anterior	ivs + -ko'	-----	
Present: Simple	ivs + -tan	tvs + -o'/-en + -tan	
Continuous	ivs + $-akad_2$	-----	
Past: Simple	ivs + -ken	tvs + -ken	tvs + ken_2
Anterior	ivs + -len	tvs + -len	
Indefinite	ivs + -jan, $-jan_2$	tvs + -o'/-en + jan	tvs + jan_2
Perfect	ivs + -akan	tvs + -akan	

(a) Regular intransitive are distinguished both by the intransitive stem and by the final -n of the tense markings. except:

$-akad_2$: Present continous, as in senakada, senakad-ge-a.[MG.143]

-akan: present continuous, occurs only with a limited set of verbs, tingun,'stand'; dub,'sit';giti,lie down; hapen,'be silent'

(b) Intransitive Use of transitive stems in the middle and passive, is distinguished by the voice markers -o',-en with -Ø,-tan,-jan, and by the final -n of the markers -ken,-len,-akan.

(c) Intransitive Use of transitive stems in the active voice occurs,

$-jan_2$: Past, Intentional,'went to, began to.' ma'jana.[MG.148]

$-ken_2$: Past, incomplete,'was busy doing..' ma'kena [MG.145]

2.C. EQUATIONAL CLAUSES

Equational Clauses (eCl) are clauses in which the predicate slot is filled by an equational verb, or a suffix equal to this type of verb. The function of the verb form,in this type of clause, is merely to act as a linking agent between the subject, and some predicate attribute, either a nominal or an adjectival. Typical equational or linking verbs are the verbs "is","was","seems","appears". These forms are rendered in Mundari by the suffixes -tan,with nouns, and -a,with verbs, for the present tense "is'; the free form tăikena,"was", and other similar forms,such as lelo'tana,"seems". Such forms then become the link between subject and attribute, in what is essentially a transformed modification structure.

The formulation of equational clauses includes the subject and predicate attribute tagmemes in the string, with the predicate attribute tagmeme marked as obligatory to this type of structure. The link word may be omitted in ellipsis, or may be a verbal suffix which is attached to the predicate attribute, or may be a separate verb form in a predicate slot. All three elements subject + link + attribute are to be considered nuclear. The subject slot,is,as elsewhere, a subject specifier slot and is optional. The micro-subject,or subject pronoun is obligatory,even though the subject be expressed; When the attribute is nominal, there is person-gender-number concord with the subject.

The equational clause in Mundari is formulated as follows:

eCl = ± S:N + PA:N/Aj + P:eV

Read: An equational clause construction consists of an optional subject slot, filled by a noun phrase, a predicate attribute slot, filled by a noun phrase or adjective phrase, and a predicate slot filled by an equational verb (or linking particle).

The equational construction involves a person-number-gender concord between the subject slot and the predicate attribute noun filler, also between the optional macro-subject and the obligatory micro-subject.

(a) Equational clauses with ellipsis of the predicate link:

Munda ókoe? (P:-Ø) (Predicate precedes interrogative)

Who (is) the chief?

Ni'ge Munda (P:-Ø). (Predicate follows macro-subject)

This one (is) the chief. [MG.Intro.xxxvii]

(b) Equational clauses with a linking suffix:

Nom. Uraon-tan-ing, 'I am an Uraon.!' (link: -tan-)

Ne horo Uraon-tan-i, 'This man, he is an Uraon.!'

Adj. Eselge-a-ing, 'I am fair-skinned. (link: -a-)

Ne horo-e eselgea, 'This man is fair-skinned.'

Note: Adjectives, in attributive position, generally take -ge.

(c) Equational clauses with a linking free form.

Ne horo Uraon-e taikena, 'This man was an Uraon.!'

Ne horo esel-e taikena., 'This man was fair-skinned.'

For words denoting office or occupation, e.g. munda, 'chief'; raja, 'king' The link -akan-a is used: munda-akan-a-e, 'he is chief-ed' [MG.xli.]

3. CLAUSE MATRIX

Clause matrix is the systematic arrangement of the various types of clause construction into a two-dimensional system, an array of rows and columns. There are different kinds of arrays, depending upon the dimensions chosen. The main sentence types, compared with the main clause types, gives us an array which indicates the ordered possibilities of sentence-clause structure. An array of the various clause types with their internal elements, opens up the various possibilities of combination within the clause structure itself.

A Sentence-clause matrix is an array with the sentence level constructions in one dimension, and the main clause types in the other. If we consider the main three sentence types as statement(S), Question(Q), and Command(C); these may be arranged in an array with the main clause types, transitive(tCl),Intransitive(iCl),Equational(eCL) The possibilities of Sentence-clause formulated are arrayed thus"

	Statement	Question	Command
Transitive	tCl-S	tCl-Q	tCl-C
Intransitive	iCl-S	iCl-Q	iCl-C
Equational	eCl-S	eCl-Q	eCl-C

Given such an array, we can check the occurence of each of the possible sentence-clause types against an informant, or a text, to see if all of the types suggested by the array do in fact occur.

The sentence-clause matrix should be so designed as to represent in an array the main kernel sentences of the language. Other dimensions for the generation of non-kernel sentences can be introduced to the matrix via an operator,which will introduce the new dimension. If the kernel sentences are simple,complete,active,affirmative statments, the two dimensions of activity/passivity and affirmative/negative are added as operators, analagous to the multiplication of math matrices:

Matrix			Operators
tCl-S	tCl-Q	tCl-C	
iCl-S	iCl-Q	iCl-C	X /Neg/ X /Pass/
eCl-S	eCl-Q	eCl-C	

The results are a nine-cell matrix, which,if the two operations are performed, is paralleled by two other nine-cell matrices, generating a total of 3x9 = 27 basic sentence types,excluding possible ellipsis.

The analytic procedure for the use of such a matrix is this:

1. Mark every sentence in the corpus as statment,Question,or command.
2. Separate out the main clause types, transitive,intransitive,and equational, each with their appropriate marking.
3. Mark each sentence as negative or affirmative
4. Mark each sentence as active or non-active.

This constitutes the main sorting procedure. The types thus isolated can then be charted independently on separate charts for the resolution of each type into its essential nuclear constituents.

A Clause element matrix is an array with the clause level construction types in one dimension, and the nuclear elements of the clause structure in the other dimension. Taking our essential three clause types already listed above,transtive(tCl),intransitive(iCl) and equational(eCl), we contrast these in an array with the nuclear tagmemes at clause level, the Subject slot, the Predicate slot, and the objects slots, including the predicate attribute slot for equational clauses, along with their respective filler classes. These are arrayed thus:

	Subject	Object	Predicate
Transitive	± S:N	± O:N	+ P: tV
Intransitive	± S:N	-----	+ P: iV
Equational	± S:N	+ PA:N/Aj	+ P: eV

Such an array immediately points up the essential differences between these clause types, a difference in the object and predicate slots. This two-fold difference is sufficient to distinguish constructions.

Subsequent analytic procedures with this matrix are as follows:

1.Isolate the difference clause-sentence types according to the former matrix,and list on separate charts.

2. In the make-up of these charts, list the subject,predicate,and object slots as headings, and see how these are filled in utterances.

3. Adjunct slots at the clause level, as well as exaggerated expansions of noun phrase within these slots,can be temporarily omitted.

4. Dependent clauses can be analyzed as separate sub-types.

3

THE MUNDARI PHRASE

Phrase level constructions are constructions in which the constitute is a close-knit sequence of morphemes which act as a typical functional unit on clause level, and whose constituents are words. The phrase level constructions usually include the relator-axis type,in which the constituents are a relator which indicates the functional usage of the phrase, and the phrase proper,as its axis. The relator-axis type is first analyzed into two elements,relator and axis, and then the governed phrase which occurs in the axis slot is analyzed separately. Phrase level analysis proper is the analysis of endocentric structures, including an obligatory head slot, and a number of optional modifiers.

The Mundari Phrase is a close-knit groups of words, often partially separated from the utterance in which it occurs by junctures, and consisting of words as elements. These close knit word groups are isolated and then analyzed according to a constituent structure, first by the removal of functional relators, then the separation of phrases in apposition, and finally, the separation of the head slot from its various modifying slots. Phrases occur in nominal, adjectival,adverbial functions on the clause level. The close knit unity of verb with its auxiliaries is analyzed,at this level, as a verb phrase.

1. Relator-Axis Phrase: consisting of relator and axis only

Relators: bound or free forms, relate phrase functionally

Axis: noun phrase or nominals.

2. Appositive Phrases: consisting of two head slots, nominal

Item Slot: filled by a noun or noun phrase

Appositive Slot: filled by noun or noun phrase

3. Endocentric Phrase Constructions: with one head only

(a) Noun Phrases: a noun and its modifiers

Head slot: filled by noun, obligatory

Modifier slots: optional, in order of occurence

(b) Adjective Phrase: an adjective and its modifiers

Qualitative Adjectives, with intensifiers, e.g. isu, 'very'

Quantitative Adjectives, with qualifiers, e.g. -leka, 'about'

(c) Adverb Phrases: an adverb and its modifiers

Adverb, plus intensifiers, e.g. isu, 'very' + adverb

(d) Verb Phrase: a verb form of more than one word

Main verb, plus auxiliaries, in a close knit phrase,

e.g. imperfect verb forms with auxiliary taikena

An endocentric construction is named according to the character of the form which fills the head slot. Thus a noun phrase has a noun head, an adjective slot has an adjective head, etc. They are simple endocentric expansions of the word, and function like that word at clause level; when, however, relators are added to the nominal phrase, the phrase takes on the character imposed by the relator, as adjectival, or adverbial.

1. RELATOR-AXIS PHRASES

Relator-Axis Phrases are phrase level constructions which have two, only two, and always two, obligatory elements, These elements are an obligatory relator slot, filled with a bound or free relator, and an obligatory axis slot, filled by a noun or noun phrase. Relator-axis phrases are of two types, according to the function which they exercise on the clause level. There are adjectival and adverbial RA-phrase.

1.A. ADJECTIVAL RA-PHRASES

Adjectival relator-axis phrases are phrases composed of a relator and an axis, which fill adjectival slots on the clause level. Clause level is used here in a broad sense. The full RA-adjectival fills the same slots as adjectives, and these are typically the slots, which occur in modification structures modifying other nominals. The formal marking for this sub-class of RA-phrase is the relator. In the adjectival RA-phrase, the relators are the genitive endings of the noun system, the genitives in -a', -ra', -taren, -ren, -rea. These are bound relators which modify not the noun to which they are suffixed, but the total phrase, even though they are suffixed only to the phrase final word. There are no free form relators for adjectival RA-phrase.

Buruma hatu-ren Orea kili-ren horo taikena.

'There was a man, of the village Buruma, of the Orea clan.'

The following types of relators occur in adjectival RA-phrases:

1. The genitives in -a', and -ra' (possessive/ partitive)

-a': 'of', possessive or partitive, added only to animate nouns

Governed by either animate or inanimate nouns.

Samu Munda-a' ora', 'the house of Samu Munda.' (of:belonging)

-ra':'of', partitive, added only to inanimate nouns.

Governed by any noun, animate or inanimate.

Marang daru-ra' koto, 'the branch of the big tree.'(of:part)

2. The genitives in -taren,-ren (relationships)

-taren: 'of,near', constant attendance, added to any noun,but...

Governed by animate nouns, in concord with final -n of -taren.

Samu munda-taren dasiko, 'the servants of Samu munda.'

-ren: of,close to', close relationship, added to any noun,but...

Governed by animate nouns,in concord with final -n of -ren.

Samu munda-ren kuri, 'the wife of Samu Munda.'

3. The genitives in -ren, -rea!: (Place,age,price,material,dimension)

-ren: 'of,in', place,age,price,etc.,added to any noun, but...

Governed by animate nouns, in concord with final -n or -ren.

Marang bir-ren jontuko, ;the animals of the big forest.'

-rea!:'of,in', place,age,price,etc.added to any noun, but...

Governed by inanimate nouns,in corcord with final -a' of -rea'.

Mone taka-rea' daru, 'a tree priced at 5 rupees.'

Note: The final -n of these forms is a demonstrative adjective form; the final -a',an impersonal pronoun,acting as an appositive nominal.

4. The genitive in -ten,-tea' (Instrumental genitive)

-ten: 'of,by', used with a limited set of nouns, such as

nutum-ten,'by the name of....'

rup-ten, 'in the shape of...'

umbul-ten, 'in the shadow of.../ by the authority of...'

Governed by animate nouns, in concord with final -n of -ten.

Samu nutum-ten horo, ' a man by the name of Samu.'

-tea': 'the one by..', used with the limited set given above,

Governed by inanimate nouns,in concord with final -a' of -tea'.

Kilum nutum-tea' hatu,'a village,the one named Kilum.'

Note: Since the final -a' of-tea' is an impersonal pronoun, belonging to the nominal class, the forms in -tea' are more truly nominals than adjectivals. Hence -tea' has a wide range of usage as a nominal,and only a very restricted use as a genitive,with the nouns nutum,etc.

e.g. ol-tea','writing materials'; ka-lumo'-tea','a waterproof'[MG.188]

The Concord scheme for adjectival phrases is summarized as follows:

	Adjectival RA-Phrase	Governing Noun
1.	Animate noun + -a'	Any noun, no concord.
2.	Inanimate noun + -ra'	Any noun, no concord.
3.	Any noun + -taren	Animate noun, concord with -n
4.	Any noun + -ren	Animate noun, concord with -n
5.	Any noun + -rea'	Inanimate noun, concord with -a'
6.	Nutum,umbul,etc.+ -ten	Animate noun,concord with -n
7.	Nutum,umbul,etc.+ -tea'	Inanimate noun,concord with -a'

1.B. ADVERBIAL RA-PHRASES,

Adverbial relator-axis phrases are phrases which consist of a relator, bound or free, and an axis. These Adverbial RA-phrases fill adverbial slots on the clause level, of time,place,manner,purpose,etc. The formal marking for RA-phrases of the adverbial sub-type, as opposed to the adjectival type, is the form class of the relators used. This adverbial sub-type also uses free form relators, some simple and some compound, which do not occur in adjectival RA-phrases. In this section we consider the RA phrases with bound relators, and in the subsequent section the RA phrases with free form relators.

Adverbial RA-phrases occur with a set of bound relators, which are the oblique case endings of nouns in the nominal system,including:
1. Locative Relators: the 17 locative suffixes formed from the particles -re,-te,-ete; -ta',-sa', and -ko-. Of these, -ko- is never final. Phrases governed by these relators fill locational slots at clause level.
2. Temporal Relators: the locative relators are used of time, particularly the simple relators in -re,-te,-ete. Besides these,there are specific temporal relators,such as -sing,-ma,'day'; -sa,-duang,'times'
Phrases with these relators fill temporal slots at clause level.
3. Manner Relators: the suffixes of the oblique modal cases are relators, for phrases, such as -te(ins),'by'; -leka,'like'; -lo',with'(-sam,Sk.)
Phrases with these relators fill manner slots at the clause level.

Adverbial RA-phrases also occur with free form relators, most of which are compound relators containing one of the bound relators as final element. Some of the independent relators are formed as follows:

1. Locative free relators: The locative suffixes, -re, -te, -ete are added to noun or adjective stems to form adverbs; these adverbs are also used as postpositions, governing a noun or noun phrase.

e.g. ayar, aj.,'ahead' ayar-re, av/post.,'ahead'
doya, ns.,'back' doya-re, av/post.,'behind'

(a) Animate nouns governed by these relators take the genitive suffix -a','of', so the the total relator is a compound ...a' ayar-re.

e.g. aiñ-a' ayar-re, 'in front of me.'

(b) Inanimate nouns, however, remain unchanged in these RA phrases.

e.g. daru ayar-re, 'in front of the tree'

2. Temporal free relators: The locative suffixes, -re, -te, -ete are also used with time words to form temporal adverbs. These adverbs are then used as postpositions, following the pattern of inanimate nouns.

e.g. sida, aj., 'first' sida-re, av/post.,'before'
tayom,aj., 'late' tayom-re,av/post.,'after'

There are several formal differences between the locatives and temporals. Temporal postpositions have only adjective bases, locatives have also a noun base. Temporals are all inanimate; locatives take the genitive ending -a' whenever the noun governed is an animate noun. Temporals have a small limited class of simple relators, with no overt marking, such as jaked,'until'; imta,'then', not found in locatives.

3. Modal Free Relators occur, sometimes simple,sometimes compound.
(a) Accompaniment: Parallel to -lo!,'with', and -sam(Sk),'with' are the free forms, sam,'with'(preposited),and begar..(-te)'without'.
(b) Instrumental: Parallel to the inanimate instrumental -te$_2$,'by' are the free animate instrument, ...-a' hora-te,'by', in which the free form, horate,'by the way' is the instrumental case of hora,'way' and the genitive ending -a',follows the rules for animate locatives.
(c) Manner: There are no free forms, but in addition to the simple bound form -leka,'with' there is a compound bound form lekate,'with'
(d) Purpose: There are no bound relators expressing purpose. The free relators are mente,'for'; nagen, nagente,'for'. Of these, the form mente is a compound in -te, and nagente is a compound in -te.

Analysis at phrase level is intended to answer the grouping question: "What goes with what?". In the analysis of the relator-axis phrase, the relators help in the grouping of words into phrase,show the functional use of the phrase, and attach it to the main cluase. The procedure for the analysis of relator-axis phrases is as follows:
1. Find the relator. It is in RA phrase final position. Mark a break after the relator, and examine what goes before.(exc.sam,begar,ut supra)
2. If the relator is free,the governed noun precedes; if,however,the relator is bound,examine whether it might be a compound relator.Check the noun ahead for genitive ending -a',if the noun is animate.
3. The rest of the phrase is governed by rules for noun phrases.

2. ITEM-APPOSITIVE PHRASES

Item-Appositive Phrases are phrase level constructions which have two and only two obligatory slots, one of which identifies the item, and the other of which is in apposition with this item. Fillers of both slots are nouns or noun phrases. This construction contrasts with the relator-axis construction in two ways. First, the two slots here are syntactically equal,- neither one is dependent upon the other. Second, this construction is endocentric, in that the two slots taken together fill a single nominal slot at the clause level. This two-headed endocentric expansion is in contrast with the single-headed modified noun phrase, in which a single head slot occurs with a string of optional modifiers which are subordinate to that head. Formulated:

Relator-Axis: RA Phrase = +AX:N +R:r

Read: A relator-axis phrase consists of an axis slot, filled by a noun phrase, and a relator slot filled by relators. (Relators are regularly postpositive.)

Item-Appositive: IA Phrase = +It:N +App:N

Read: An item-appositive phrase consists of an item slot filled by a noun phrase, and an appositive slot filled by a noun phrase. (The order is optional.)

Some of the features of item-appositive phrases are as follows:

(a) One of the two slots is frequently filled by a proper name.

e.g. Buruma hatu-ren horo, 'the man from the village(of)Buruma.'

Relator-Axis Phrase: RA = +Ax:Buruma,hatu +R: -ren

Item-Appositive Phrase: IA = +It:Buruma +App: hatu

In the analysis of this type of structure,it does not matter which of the words in the phrase is called "item"and which "appositive",since the meaning of the two-headed construction is a relation of syntactic equality between the two heads, irrespective of their semantic value.

(b) Concordance exists between the two heads of construction, a concord of gender-number-case. The case marking of the second item is a relator which governs the entire phrase,and not properly a noun case ending. Number concord exists, even when the marking seems to be otherwise:

e.g. Sasan diriko, mundakoa' pata,(lelepe) [MG.Intro.viii]

(Look at)the burial slabs, the title deeds of the Mundas.

Note that: The plural of diri is overtly marked by -ko,
according to the rule that plural is optional(inanimate)
The plural of pata is unmarked, (being clear from diriko);
here the optional plural marking is omitted.

(c) Grammatical forms can in many cases be explained on an apposition basis. Why should the form a','it', become an adjectival suffix in the form rea', in limited use with tea', and a nominal with tea'. A consistent answer is that a',bound or free, is always pronominal. In this version, -rea',-tea' are nominalizing suffixes, which then are used in apposition with the governing noun,-always inanimate-,in which is equivalently a genitive usage, but formally an apposition.

e.g. marang bir-rea' daru, 'a tree of the big forest.'

IA-Phrase = It: marang bir-rea' + Ap: daru

Translate:'the tree,it-in-the-big-forest'

3. ENDOCENTRIC PHRASE EXPANSION

Endocentric expansions are phrase level constructions which have a single obligatory head slot, and a series of optional modifying slots. These endocentric expansions are properly called "phrase", they are close-knit groups of words nested about a single head word. There are noun phrase, adjective phrases, adverbial phrases, and verb phrases, but the term is not used univocally of all of these phrases. The nouns take members of various adjective sub-classes as modifiers, the adverbs and adjectives take some type of intensifier, and the verb forms are only associated in close knit groupings with the verbal auxiliaries. The object of analysis at this point in phrase structure is to define the maximum expansion potential of each of the major four form classes, and to give the order of occurence of elements in these expansions.

3.A. NOUN PHRASES

Noun Phrases are constructions which consist of a single head slot filled by a noun, and a series of modifying slots filled by members of the various adjective sub-classes. These modifying elements are:

(a) Demonstratives, which occur in initial position, e.g. ne, 'this'

(b) Possessives, which occur in second position, e.g. aina', 'mine'.

(c) Quantitative Adjectives, in third position, e.g. soben, 'all'

(d) Qualitative Adjectives, which occur finally, e.g. marang, 'big'

The formulation of the noun phrase is given in the following approximate order. The demonstrative is initial and the head noun is final; quantitative adjectives always precede qualitative; but the position of the possessive slot is not rigidly immovable in the frame.

N = ± Dem:dem ± Poss:poss ± Qn:qn.aj ± Ql:Ql.aj. + H:n

Read: A Noun phrase construction consists of a demonstrative slot filled by demonstratives, a possessive slot filled by possessive, a quantifier slot filled by quantitative adjectives, a qualifier slot filled by qualitatives, and a head slot filled by a noun.

This formula represents the maximum expansion of the noun phrase. The minimum expansions of the noun phrase with each of its modifiers may be illustrated, by listing all the classes of modifiers possible.

1. The Demonstratives are the limited class of adjectives represented by such forms as ne,'this'; en,'that'; han'that yonder'. These are phrase initial, whenever a demonstrative occurs in the noun phrase.

e.g. ne horo, 'this man'

en marang daru, 'that big tree'

2. The Possessives are the adjectives formed from nominal stems by the addition of the genitive suffixes, -a',-ra',-taren,-ren, and -rea'. In the expansion of the noun phrase, possessive pronouns only may fill the possessive slot. If,however, the possessive suffix governs a phrase, constituting a relator-axis grouping, then this RA group must' be initial to the Noun phrase. Premodifiers would link with the RAgroup.

e.g. ne bir-rea' jontuko, 'the animals of this forest'

bir-rea' ne jontuko, 'these animals of the forest.'

If the possessive suffix is attached to a noun, and this word is then preceded by a demonstrative, the demonstrative would modify this noun.

e.g. en hatu-ren Munda, 'the chief of that village.' [MG.91]

The phrase could not be translated: that village chief. Consequently, the only possessives that could follow a demonstrative in the string, are the pronominal possessives. These are generally the possessives in -a',(with the -a' omitted before the words: hatu,ora'.)

e.g. ne ale hatu-re, 'in this our village.'

en aina' mone taka, 'those five rupees of mine.'

3. The Quantitatives are adjectives of the general class expressing quantity, such as pura','many'; tara,'several'; eskar,'only'; the indefinites, oko,'some'; eta','other'; ja,'any'; jeta ,'some'; the demonstratives and interrogatives compounded with -min-,'quantity'; and the whole set of numerals,(Root forms are used with horo,ora,bo').

e.g. ne soben honko, 'all these children'

nimin marang daru, 'this many big trees.'

The occurence of a demonstrative compound in this slot would exclude any previous demonstrative slot. The demonstrative only occurs once.

4. The Qualitatives include all other adjectives, and express generally, the intellectual,moral,and physical characteristics of things,including color, size, shape, taste, At least two of these adjectives can occur that is, the qualifying slot may occur at least twice in the same string

e.g. salangi esel horo, 'a tall, fair-skinned man.'[MG.12]

ne aina' soben marang daru, 'all these big trees of mine.'

3.B. ADJECTIVE PHRASES

Adjective Phrases are constructions which consist of a single head slot, filled by an adjective, and an intensifier slot, filled by an intensifier, such as the free forms oro,'more', isu,'very'. There are also a few cases in which an adjective, in the head slot, will be modified by an RA phrase in leka,'like' or ete,'from' to indicate the aspect under which the adjective applies.

Adjectives on the word level have many intensifiers. Because of this, the adjective phrase, or more than one word, is comparatively rare. The following intensifiers were listed in discussing adjectives

a) The infix -p-, to intensify the adjective,with the meaning 'very' This intensifier is used only with words denoting dimensions,such as huring,'small'; marang,'great'; jiling,'long' and similar words.

b) The first order suffixes, -no',rather';-leka,'approximately'; -uter, 'very'(superlative), restricted to qualitative adjectives.

c) The second order suffixes, -o,'also'; -tera,'probably;-ja','perhaps' among which may be included the regular emphatics,-ge,-gedang,-do

Repetition of the same identical form is used for intensification, and occasionally a repetition with change of form(jingles). In this case, the two forms are considered as a single intense form.

e.g. huring huring honko, 'the very little children'

Adjective Phrases properly consist of an optional intensifier slot and an obligatory head slot filler by the adjective, such as:

Adjective Phrase Formula: Aj = ± Int:int + H:aj

. . e.g. isu bugin horo, 'a very good man'

oro bugin horo, 'a better man'

The second example is one method of forming the comparison of adjectives. Adjectives are modified also by RA phrases, which optionally fill the modifier slot, in a method parallel to the use of intensifiers.

Adjective with RA phrase: Aj = ± Int:RA + H:aj

e.g. en horo-leka senan, 'wise like that man'

en horo-ete bugin, 'better than that man'

The second example given is another method of giving the comparative of adjectives, which includes,as well, the term of the comparison. In both of the examples cited, the whole phrase, governed in the one case by -ete and the other by -leka, modifiers the head adjective. Superlatives may thus be formed: soben-ete bugin horo,'the best man.'

The analysis of adjective intensifiers is as follows:

1. Bound intensifiers are infixed or suffixed. They must be recognized by learning a list of intensifiers, as given above.

2. Repetition of the same adjective is the equivalent of, and therefore transformable with,an other type of intensification meaning 'very'

3. Adjective phrases with free form intensifiers are rare, and limited to a few words such as oro and isu, or pura'.

4. A dependent phrase immediately precedes,is marked with -leka,-ete.

3.C. ADVERB PHRASES

Adverb Phrases are constructions which consist of a single head slot, filled by an adverb, and an intensifier slot, filled by some intensifying particle, such as the forms isu,'very';oro,'more'. Although parallel in most respects to the adjective phrases, the intensifying of adverbs either at word level or phrase level is much more limited.

Adverbs on the word level, except for a few time words which double as nouns, such as tising,'today',hola,'yesterday'and the like, are,in the overwhelming majority, already marked with the suffixes -te,(ins), -ge,emphatic; -leka,'like',using these as adverb markers, as in sekera-ge,'quickly'; samage,'uselessly';rokage,'suddenly'.The presence of these markers tends to exclude most bound intensifiers.
(a) An intensifier such as -o,'also' might occur, but then it would be infixed in the word before the -ge,or suffixed after -te

e.g. sekera-o-ge, 'quickly also, but...

mani-te-o, 'slowly also.'

(b) Repetition is possible as a form of intensification, but in this case, the original adjective form is generally repeated, rather than the form complete with adverbial suffix. The suffix occurs only once.

e.g. mani mani-te, 'very slowly'

sekera sekera-ge, 'very quickly'

This type of repetition would not occur with noun and verb roots.

Adverb phrases properly consist of an optional intensifier slot and an obligatory head slot filled by an adverb. As with the adjective phrase, this optional pre-modifier may be either an intensifier word or a phrase governed by -ete,'from', -leka,'like', used for comparison.

Intensified Adverb: Av = ± Int:int + H: av

e.g. isu sekerage-e kamitana, 'he works very quickly.'

oro rabalte-e sayadtana, 'he breathes more easily.'

Adverb with RA Phrase: Av = ± Int: RA + H: av

e.g. ni'leka sekera ka-ing oldaria

'I can't write as quickly as this one(can).'

en horo-ete oro manite-e kajitana.

'He speaks more slowly than that man.'

With regard to the RA phrases, the relator acts as a hook to tie the phrase into the clause structure, either directly as a sentence adjunct expressing time, place, manner or purpose, or indirectly through the intermediacy of some word or phrase upon which the RA phrase is focussed. Phrases instituting a comparison seem to fall into the latter category.

The analysis of adverb intensifiers is instituted as follows:

1. Bound intensifiers are rare. Given that -te and -ge are used as markers for most adverbs, only a few suffixes,such as -o,'also',occur.
2. Repetition as a form of intensification is used only with adjective-based adverbs. The adjective is repeated,and then the suffix is added.
3. Adverb phrases occur with free intensifiers: oro; isu, pura', etc.
4. Dependent RA phrases occur as intensifiers,with -ete or -leka.

3.D. VERB PHRASES

Verb Phrases are constructions which consist of a close-knit group of verb forms, including a main verb and an auxiliary. The only verb phrases in Mundari are those with the past auxiliary, taikena, 'was'. In negative propositions, the negative adverbial particles, alo-, 'don't' and ka, 'not' should probably also be considered as essential parts of the negative verb phrase, especially since, in some negative transformations, they are joined to the mood markers which mark the phrase.

The verb phrases with taikena, called the "imperfect tenses" by Hoffmann, consist of a head slot filled by a transitive or intransitive participle and an auxiliary slot filled by taikena. The subject pronoun is attached to the participial form. Imperfects occur with the present tenses in -Ø, -tan, -jad, -akad, and the past tenses in -ked/ken, -tad, -led/len, -akad/akan. The past auxiliary is not used with future tenses.

Verb Phrase = + H:participle +subj:-pn + Aux: taikena

e.g. leltanko-ing taikena, 'I was about to see them'.

senakan-ing taikena, 'I had gone.'

Within the verb phrase construction, the occurence of participles in -ked/ken are rare. These forms are replaced by the anterior -led/len.

e.g. lelledko-le taikena, 'we had been seeing them.'(not lelkedko..)

The verb sen, 'go', however, usually occurs with -ken: senkening taikena.

The eight imperfect tenses are charted on the following page.

MUNDARI VERB PHRASES		
A. Imperfects Formed from Present Tenses		
	1. Indeterminate Imperfect	-Ø
lelko taikena,	'S was accustomed to seeing them.'	
sen taikena,	'S was accustomed to going.'	
	2. Simple Present Imperfect	-TAN
leltanko taikena,	'S was then seeing them/ ...about to see them.'	
sentan taikena,	'S was then going/ ...about to go.'	
	3. Indefinite Present Imperfect	-JAD
leljadko taikena,	'S was seeing them/ ...about to see them.'	
	4. Continuous Present Imperfect	-AKAD
lelakadko taikena,	'S kept on seeing them.'	
B. Imperfects Formed from Past Tenses		
	1. Simple Past Imperfect	-KED/-KEN*
*lelkedko taikena,	'S had been seeing them'	(rare,use -LED)
senken taikena,	'S had been going.'(w.sen only)	(rare,use -LEN)
	2. Static Past Imperfect	-TAD
leltadko taikena,	'S had once seen them.'	
	3. Anterior Past Imperfect	-LED/-LEN
lelledko taikena,	'S had been seeing them.'	
senlen taikena,	'S had been going.'	
	4. Perfect Past Imperfect	-AKAD/-AKAN
lelakadko taikena,	'S had seen them.'	
senakan taikena,	'S had gone.'	

CONCLUSION

A Descriptive Analysis of Mundari

This descriptive analysis has been a study of the structure of the Mundari language, with particular attention to the units of sound, the units of meaning, the units of grammar, and their mutually contrastive arrangement patterns. The Mundari language is the language of the Munda people, whose home is in the Chota Nagpur region of south Bihar State in India. This language is a member of the Munda family of languages, closely related to Santhali, Kharia and Ho in the immediate vicinity. This family of languages has existed from pre-Vedic times, and developed side by side with Indo-European and Dravidian languages in the relative isolation of the Indian sub-continent.

The phonology of Mundari is characterized by the following features. The vowel system is made up of the five simple vowels, /a/, /e/, /i/, /o/, and /u/, together with a corresponding set of five glottalized vowels of the form /V?V/. By the laws of vowel harmony, the high vowels may not occur in the same morpheme with low vowels. The consonant system includes a set of retroflex consonants. There are no initial or final clusters, and only the continuants,/m/,/n/,/l/, and /r/ form a smooth medial cluster. Open syllables are CV, closed syllables are CVC, but zero onset is allowed. Final closed syllables are stressed, but elsewhere stress is on the penultimate syllable.

The morphology of Mundari is typical of an agglutinative language. The noun system and verb system are characterized by groups of typical suffixes. Nouns have gender, number and case; verbs have voice, tense and mood. Other forms are uninflected particles. Prefixes do not occur except in reduplication, and infixes are derivational. Mundari nouns are animate or inanimate gender, with plant life listed as inanimate, and celestial bodies as animate. The animate nouns have singular, dual and plural number; inanimate nouns do not have number. Mundari pronouns have an inclusive and exclusive first person in the dual and plural numbers, forming a pronominal system of eleven animate pronouns, and one inanimate. Mundari verb forms, besides voice, tense and mood, have infixed pronominal objects and pronominal subjects which occur in word final position in the verb form.

The syntax of Mundari is built around the verb form, which is already a complete clause in miniature with its own subject, object and predicate. All other slots in the clause structure are optional specifiers of a subject and object already expressed in the verb form, or are optional sentence adjuncts peripheral to the sentence structure. Functional slots in the syntactic frame are marked by typical sets of nominal and verbal suffixes; case endings are used as phrase and clause relators, pronominal suffixes match the pronouns in form. This syntax is here expressed in a tagmemic-transformational model, using matrices to show the relation of sentence to clause, and clause to its elements.

This analysis was based upon the work of Rev.John Hoffmann,S.J. particularly his Mundari Grammar (1903) and Encyclopedia Mundarica(1930) The phonetic transcription was accepted as sound, and developed here into a phonemic system. The morphological system was complete,but had to be reworked in terms of form classes. The syntactic system, however, was not developed in Hoffmann's traditional approach, and had to be supplied by an analysis of Mundari structures. In order to make these results universally verifiable, citation forms were taken from the works of Hoffmann, rather than from private sources. The result is an updating of the work of Hoffmann in terms of modern linguistic science, based upon eight years actual experience working among the Munda people.

The descriptive analysis of a language is never complete. Not only does the language change in time, but the tools of linguistic science are in a state of flux. Methods unknown to Hoffmann fifty years ago are in common use today; methods unknown to us will be in use tomorrow. But a beginning must be made. With a preliminary descriptive analysis of the complete language in hand, it is possible to move towards an ever more accurate knowledge of this language, and through a comparison with the analyses of other languages, towards an ever more comprehensive view of the nature of language.

APPENDIX

1. Mundari Verb Forms: Future Tenses

2. Mundari Verb Forms: Present Tenses

3. Mundari Verb Forms: Past Tenses

4. Mundari Verb Forms: Imperative

5. Mundari Verb Forms: Optative

List of Illustrations

Bibliography

MUNDARI VERB FORMS

Future Tenses

1. Simple Future Tense:	24 forms,	with each pronominal subject
(a) Transitive:		(Tense Marker -Ø)
With marked i.o.	11 forms,	tvs + a + Ø + i.o. + a
With unmarked d.o.	12 forms,	tvs + Ø + d.o. + a
(b) Intransitive:		(Tense Marker -Ø)
With no object	1 form,	ivs/tvm/tvp + Ø + a
2. Static Future Tense:	12 forms,	with each pronominal subject
(a) Transitive:		(Tense Marker -TA)
With d.o. only	12 forms,	tvs + TA + d.o. + a
(b) Intransitive:	no form.	
3. Anterior Future Tense:	13 forms,	with each pronominal subject
(a) Transitive:		(Tense Marker -LE)
With i.o./d.o.	12 forms,	tvs + LE + i.o./d.o. + a
(b) Intransitive:		(Tense Marker -KO')
With no object	1 form,	ivs + KO' + a

Note 1: In tense 1b, tvm = tvs + -en, and tvp = tvs + -o'

Note 2: In tense 2a, indirect objects do not occur;
Marked indirect objects, inanimate, do not occur.

	1. SIMPLE FUTURE INDICATIVE	Ø / Ø
	Transitive Verbs	
	tva = tvs ± a + Ø + d.o./i.o. + a	
lelea,	'S will see it' / 'S sees it'	With i.o.
lelina,	'S will see me'	omaina
lellanga,	'S will see us (dl.inc)'	omalanga
lellinga,	'S will see us (dl.exc)'	omalinga
lelbua,	'S will see us (pl.inc)'	omabua
lellea,	'S will see us (pl.exc)'	omalea
lelmea,	'S will see you (sg)'	omamea
lelbena,	'S will see you (dl)'	omabena
lelpea,	'S will see you (pl)'	omapea
leli'a,	'S will see him/her'	oma'ia
lelkinga,	'S will see them (dl)'	omakinga
lelkoa,	'S will see them (pl)'	omakoa
	tvm = tvs + en + Ø + a	
lelena,	'S will see themselves'	
	tvp = tvs + o' + Ø + a	
lelo'a,	'S will be seen'	

	1. SIMPLE FUTURE INDICATIVE
	Intransitive Verbs
	iva = ivs + Ø + a
sena,	'S will go' / 'S goes'

	2. STATIC FUTURE INDICATIVE	TA /---
	Transitive Verbs	
	tva = tvs + TA + d.o. + a	
lelta',	'S will see it, once and for all'	No i.o.
lelta'ina,	'S will once see me'	
leltalanga,	'S will once see us (dl.inc)'	
leltalinga,	'S will once see us (dl.exc)'	
leltabua,	'S will once see us (pl.inc)'	
leltalea,	'S will once see us (pl.exc)'	
leltamea,	'S will once see you (sg)'	
leltabena,	'S will once see you (dl)'	
leltapea,	'S will once see you (pl)'	
lelta'ia,	'S will once see him/her'	
leltakinga,	'S will once see them (dl)'	
leltakoa,	'S will once see them (pl)'	
	Middle Static Future	
*No form	Use Simple Future Middle	
	Passive Static Future	
*No form	Use Simple Future Passive	

	2. STATIC FUTURE INDICATIVE
	Intransitive Verbs
	Static Future Intransitive
*No form	Use Simple Future Intransitive

3. ANTERIOR FUTURE INDICATIVE LE /---

Transitive Verbs

tva = tvs + LE + d.o./i.o. + a

lellea,	'S will first see it'
lellĩna,	'S will first see me' / 'S will first see for me'
lellelanga,	'S will first see us (dl.inc)' / ... for us'
lellelinga,	'S will first see us (dl.exc)' / ... for us'
lellebua,	'S will first see us (pl.inc)' / ... for us'
lellelea,	'S will first see us (pl.exc)' / ... for us'
lellemea,	'S will first see you (sg)' / ... for you'
lellebena,	'S will first see you (dl)' / ... for you'
lellepea,	'S will first see you (pl)' / ... for you'
lellĩa,	'S will first see him/her' / ... for him/her'
lellekinga,	'S will first see them (dl)' / ... for them'
lellekoa,	'S will first see them (pl)' / ... for them'

Anterior Future Middle

*No form	Use Simple Future Middle

Anterior Future Middle

*No form	Use Simple Future Middle

3. ANTERIOR FUTURE INDICATIVE

Intransitive Verbs

iva = ivs + KO' + a

senko'a,	'S will first go'

MUNDARI VERB FORMS

Present Tenses

4. Simple Present Tense:	24 forms, with each pronominal subject.	
(a) Transitive:		(Tense Marker -TAN)
With marked i.o.	11 forms.	tvs + a + i.o. + TAN + a
With unmarked d.o.	12 forms,	tvs + d.o. + TAN + a
(b) Intransitive:		(Tense Marker -TAN)
With no object,	1 form	ivs/tvm/tvp + TAN + a
5. Indefinite Present Tense:	12 forms, with each pronominal subject.	
(a) Transitive:		(Tense Marker -JAD)
With i.o./d.o.	12 forms,	tvs + JAD + i.o./d.o. + a
(b) Intransitive:	no form.	
6. Continuous Present Tense:	13 forms, with each pronominal subject.	
(a) Transitive:		(Tense Marker -AKAD...GE)
With i.o./d.o.	12 forms,	tvs + AKAD + i.o./d.o. + GE + a
(b) Intransitive:		(Tense Marker -AKAN-GE)
With no object	1 form,	ivs + AKAN + GE + a

Note 1: In Tense 4a, the i.o./d.o. precedes the tense marker -TAN

Note 2: In Tense 6b, -AKAN-GE is used with tingun,'stand',dub,'sit', giti,'lie down',hapen,'be silent'; -AKAD is used elsewhere.

	4. SIMPLE PRESENT INDICATIVE	TAN / TAN
	Transitive Verbs	
	tva = tvs ± a + d.o./i.o. + TAN + a	
leltana,	'S is seeing it now'	Marked i.o.
lelingtana,	'S is seeing me now'	omaingtana
lellangtana,	'S is now seeing us (dl.inc)'	omalangtana
lellingtana,	'S is now seeing us (dl.exc)'	omalingtana
lelbutana,	'S is now seeing us (pl.inc)'	omabutana
lelletana,	'S is now seeing us (pl.exc)'	omaletana
lelmetana,	'S is now seeing you (sg)'	omamtana
lelbentana,	'S is now seeing you (dl)'	omabentana
lelpetana,	'S is now seeing you (pl)'	omapetana
leli'tana,	'S is now seeing him/her'	omai'tana
lelkingtana,	'S is now seeing them (dl)'	omakingtana
lelkotana,	'S is now seeing them (pl)'	omakotana
	tvm = tvs + en + TAN + a	
lelentana,	'S are now seeing themselves'	
	tvp = tvs + o' + TAN + a	
lelo'tana,	'S are now being seen'	

	4. SIMPLE PRESENT INDICATIVE
	Intransitive Verbs
	iva = ivs + TAN + a
sentana,	'S is now going' / 'S goes'

	5. INDEFINITE PRESENT INDICATIVE	JAD'/---
	Transitive Verbs	
	tva = tvs + JAD' + d.o./i.o. + a	
leljada,	'S sees it'	d.o.=i.o.
lelja'ina,	'S sees me/ for me'	
leljad'langa,	'S sees us/ for us (dl.inc)'	
leljad'linga,	'S sees us/ for us (dl.exc)'	
leljad'bua,	'S sees us/ for us (pl.inc)'	
leljad'lea,	'S sees us/ for us (pl.exc)'	
leljad'mea,	'S sees you/ for you (sg)'	
leljad'bena,	'S sees you/ for you (dl)'	
leljad'pea,	'S sees you/ for you (pl)'	
lelja'ia,	'S sees him/her' / 'S sees for him/her'	
leljad'kinga,	'S sees them/ for them (dl)'	
leljad'koa,	'S sees them/ for them (pl)'	
	Indefinite Present Middle	
*No form	Use Simple Present Middle in -TAN	
	Indefinite Present Passive	
*No form	Use Simple Present Passive in -TAN	

	5. INDEFINITE PRESENT INDICATIVE
	Intransitive Verbs
	Indefinite Present Intransitive
*No form	Use Simple Present Intransitive in -TAN

6. CONTINUOUS PRESENT TENSE — AKAD-GE / AKAN-GE

Transitive Verbs

tva = tvs + AKAD + i.o./d.o. + GE + a

d.o. = i.o.

lelakadgea,	'S keeps on seeing it'
lelaka'ingea,	'S keeps on seeing me/ for me.'
lelakadlanggea,	'S keeps on seeing us/ for us (dl.inc)'
lelakadlinggea,	'S keeps on seeing us/ for us (dl.exc)'
lelakadbugea,	'S keeps on seeing us/ for us (pl.inc)'
lelakadlegea,	'S keeps on seeing us/ for us (pl.exc)'
lelakadmegea,	'S keeps on seeing you/ for you (sg)'
lelakadbengea,	'S keeps on seeing you/ for you (dl)'
lelakadpegea,	'S keeps on seeing you/ for you (pl)'
lelaka'igea,	'S keeps on seeing him/her','...for him/her'
lelakadkinggea,	'S keeps on seeing them/ for them (dl)'
lelakadkogea,	'S keeps on seeing them/ for them (pl)'

Continuous Present Middle/ Passive

*No form	Use Simple Present in -TAN

6. CONTINUOUS PRESENT TENSE

Intransitive Verbs

iva = ivs + AKAD +(GE) + a (for most ivs verbs)

senakada,	'S keeps on going'

iva = ivs + AKAN + GE + a (w.dub, tingun, hapen, giti)

tingunakangea,	'S keeps on standing'

MUNDARI VERB FORMS

Past Tenses

7. Simple Past Tense:	24 forms,	with each pronominal subject.
(a) Transitive:		(Tense Marker -KED)
With marked i.o.	11 forms,	tvs + a + KED + i.o. + a
With unmarked d.o.	12 forms,	tvs + KED + d.o. + a
(b) Intransitive:		(Tense Marker -KEN)
With no object,	1 form,	ivs + KEN + a, (tvp = tvs + KEN)
8. Static Past Tense:	12 forms,	with each pronominal subject.
(a) Transitive only:		(Tense Marker -TAD)
With i.o./d.o.	12 forms,	tvs + TAD + i.o./d.o. + a
9. Anterior Past Tense:	13 forms,	with each pronominal subject.
(a) Transitive:		(Tense Marker -LED)
With i.o./d.o.	12 forms,	tvs + LED + i.o./d.o. + a
(b) Intransitive:		(Tense Marker -LEN)
With no object,	1 form,	ivs + LEN + a, (tvp = tvs + LEN)
10. Indefinite Past Tense:	1 form,	with each pronominal subject.
(b) Intransitive only:		(Tense Marker -JAN)
With no object,	1 form,	ivs/tvm/tvp + JAN + a
11. Perfect Past Tense:	13 forms,	with each pronominal subject.
(a) Transitive:		(Tense Marker -AKAD)
With i.o./d.o.	12 forms,	tvs + AKAD + i.o./d.o. + a
(b) Intransitive:		(Tense Marker -AKAN)
With no object,	1 form,	ivs + AKAN + a, (tvp = tvs +AKAN)

	7. SIMPLE PAST INDICATIVE	KED'/ KEN
	Transitive Verbs	
	tva = tvs ± a + KED' + d.o./i.o. + a	
lelkeda,	'S saw it'	Marked i.o.
lelki'na,	'S saw me'	oma'ina
lelked'langa,	'S saw us (dl.inc)'	omad'langa
lelked'linga,	'S saw us (dl.exc)'	omad'linga
lelked'bua,	'S saw us (pl.inc)'	omad'bua
lelked'lea,	'S saw us (pl.exc)'	omad'lea
lelked'mea,	'S saw you (sg)'	omad'mea
lelked'bena,	'S saw you (dl)'	omad'bena
lelked'pea,	'S saw you (pl)'	omad'pea
lelki'a,	'S saw him/her'	oma'ia
lelked'kinga,	'S saw them (dl)'	omad'kinga
lelked'koa,	'S saw them (pl)'	omad'koa
	tvm = tvs + KEN + a	
lelkena,	'S saw themselves'	
	tvp = tvs + KEN + a	
lelkena,.	'S were seen' / 'S has been busy seeing'	

	7. SIMPLE PAST INDICATIVE
	Intransitive Verbs
	iva = ivs + KEN + a
senkena,	'S went'

	8. STATIC PAST INDICATIVE	TAD'/---
	Transitive Verbs	
	tva = tvs + TAD' + d.o./i.o. + a	
leltada,	'S saw it, once and for all'	d.o.= i.o.
lelta'ina,	'S once saw me/ for me'	
leltad'langa,	'S once saw us/ for us (dl.inc)'	
leltad'linga,	'S once saw us/ for us (dl.exc)'	
leltad'bua,	'S once saw us/ for us (pl.inc)'	
leltad'lea,	'S once saw us/ for us (pl.exc)'	
leltad'mea,	'S once saw you/ for you (sg)'	
leltad'bena,	'S once saw you/ for you (dl)'	
leltad'pea,	'S once saw you/ for you (pl)'	
lelta'ia,	'S once saw him/her' / 'S once saw for him/her'	
leltad'kinga,	'S once saw them/ for them (dl)'	
leltad'koa,	'S once saw them/ for them (pl)'	
	Static Past Middle	
*No form	Use Simple Past Middle in -KEN	
	Static Past Passive	
*No form	Use Simple Past Passive in KEN	

	8. STATIC PAST INDICATIVE
	Intransitive Verbs
	Static Past Intransitive
*No form	Use Simple Past Intransitive in -KEN

	9. ANTERIOR PAST INDICATIVE	LED'/ LEN
	Transitive Verbs	
	tva = tvs + LED' + d.o./i.o. + a	
lella',	'S first saw it'	d.o.= i.o.
lelli'na,	'S first saw me/ for me'	
lelied'langa,	'S first saw us/ for us (dl.inc)'	
lelled'linga,	'S first saw us/ for us (dl.exc)'	
lelled'bua,	'S first saw us/ for us (pl.inc)'	
lelled'lea,	'S first saw us/ for us (pl.exc)'	
lelled'mea,	'S first saw you/ for you (sg)'	
lelled'bena,	'S first saw you/ for you (dl)'	
lelled'pea,	'S first saw you/ for you (pl)'	
lelli'a,	'S first saw him/her' / 'S first saw for him/her'	
lelled'kinga,	'S first saw them/ for them (dl)'	
lelled'koa,	'S first saw them/ for them (pl)'	
	tvm = tvs + LEN + a	
lellena,	'S first saw themselves'	
	tvp = tvs + LEN + a	
lellena,	'S first were seen'	

	9. ANTERIOR PAST INDICATIVE
	Intransitive Verbs
	iva = ivs + LEN + a
senlena,	'S first went'

10. INDEFINITE PAST INDICATIVE ---/ JAN

Transitive Verbs

tva = tvs + JAN + a

leljana, 'S went to see' (Intention) No objects

'S began to see' (Inception)

tvm = tvs + en + JAN + a

lelenjana, 'S saw themselves' (used as Simple Past)

tvp = tvs + o' + JAN + a

lelo'jana, 'S was seen' (used as Simple Past)

10. INDEFINITE PAST INDICATIVE

Intransitive Verbs

iva = ivs + JAN + a (w.sen,nir, apir, hoka)

senjana, 'S went (and has not returned)' (Incomplete Past)

nirjana, 'S ran away, and has not come back'

apirjana, 'S flew away, and has not come back'

hokajana, 'S stopped (for now),and has not resumed'

iva = ivs + JAN + a (for most ivs verbs)

inungjana, 'S has gone to play' (Intention)

'S began to play' (Inception)

Note 1: Although JAN is used with both transitive and intransitive verb stems, the forms in JAN make never take an object.

Note 2: The forms in JAD and JAN, although both are indefinite aspect, are distinct in time reference: JAD is present, JAN is past.

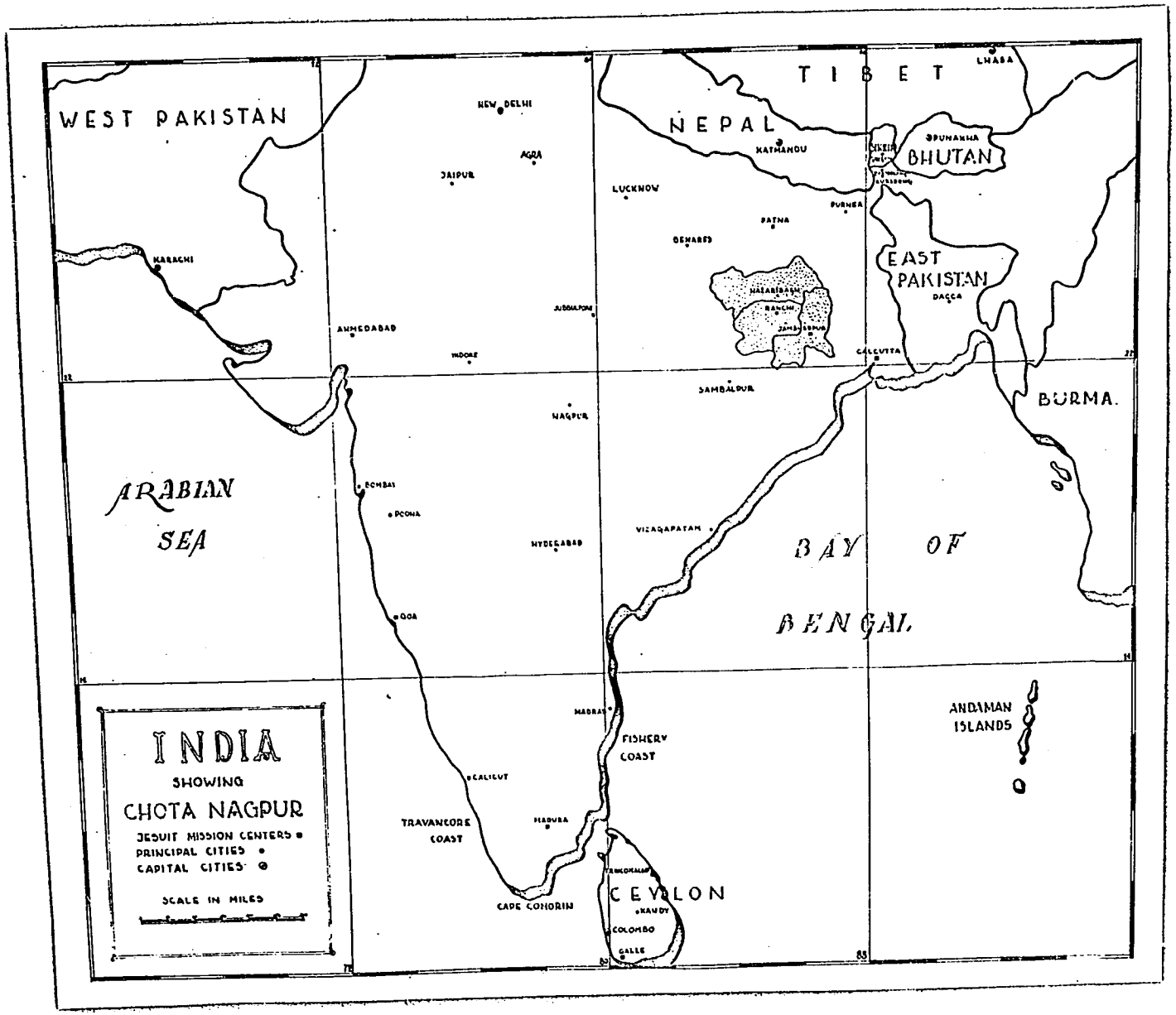
	11. PERFECT INDICATIVE	AKAD'/AKAN
	Transitive Verbs	
	tva = tvs + AKAD' + d.o./i.o. + a	
lelakada,	'S has seen it'	d.o. = i.o.
lelaka'ina,	'S has seen me/ for me'	
lelakad'langa,	'S has seen us/ for us (dl.inc)'	
lelakad'linga,	'S has seen us/ for us (dl.exc)'	
lelakad'bua,	'S has seen us/ for us (pl.inc)'	
lelakad'lea,	'S has seen us/ for us (pl.exc)'	
lelakad'mea,	'S has seen you/ for you (sg)'	
lelakad'bena,	'S has seen you/ for you (dl)'	
lelakad'pea,	'S has seen you/ for you (pl)'	
lelaka'ia,	'S has seen him/her' / 'S has seen for him/her'	
lelakad'kinga,	'S has seen them/ for them (dl)'	
lelakad'koa,	'S has seen them/ for them (pl)'	
	tvm = tvs + AKAN + a	
lelakana,	'S have seen themselves'	
	tvp = tvs + AKAN + a	
lelakana,	'S have been seen'	

	11. PERFECT INDICATIVE
	Intransitive Verbs
	iva = ivs + AKAN + a
senakana,	'S has gone'

	1. SIMPLE IMPERATIVE	Ø / Ø
	Imp/tva = tvs ± a + Ø + d.o./i.o. + S	
lelemø,-ben,-pe,	'look at it'	Marked i.o.
lelkomø,	'look at them' (+ 10 other d.o.)	omakomø(+10)
	Imp/tvm = tvs + en + Ø + S	
lelenme,	'look at yourself'	
	Imp/tvp = tvs + o' + Ø + S	
lelo'me,	'be seen'	
	Imp/iva = ivs + Ø + S	
senme,-ben,-pe	'go !'	
	2. STATIC IMPERATIVE	TA /---
	Imp/tva = tvs + TA + d.o. + S	
leltamø,-ben,-pe,	'look at it once'	No i.o.
leltakomø,	'look at them once' (+ 10 d.o.)	
	3. ANTERIOR IMPERATIVE	LE /(KO')
	Imp/tva = tvs + LE + d.o./i.o. + S	
lellemø,-ben,-pe,	'look at it first'	d.o.= i.o.
lellekomø,	'look at them first'(+ 10 d.o./i.o.)	
	4. CONTINUOUS IMPERATIVE	AKA / AKA
	Imp/tva = tvs + AKA + d.o./i.o. + S	
lelakamø,-ben,-pe,	'keep looking at it'	d.o.= i.o.
lelakakomø,	'keep looking at them'(+10 d.o./i.o.)	
	Imp/iva = ivs + AKA + S	
senakamø,-ben,-pe	'keep going'	

	1. SIMPLE OPTATIVE	Ø / Ø
	Opt/tva = tvs ± a + Ø + d.o./i.o. + k + a	
leleka,	'let S see it'	Marked i.o.
lelkoka,	'let S see them' (+ 10 other d.o.)	omakoka,+10
	Opt/tvm = tvs + en + Ø + k + a	
lelenka,	'let S see themselves'	
	Opt/tvp = tvs + o' + Ø + k + a	
lelo'ka,	'let S be seen'	
	Opt/iva = ivs + Ø + k + a	
senka,	'let S go'	
	2. STATIC OPTATIVE	TA /---
	Opt/tva = tvs + TA + d.o. + k + a	
leltaka,	'let S see it once'	No i.o.
leltakoka,	'let S see them once' (+ 10 d.o.)	
	3. ANTERIOR OPTATIVE	LE /(KO')
	Opt/tva = tvs + LE + d.o. + k + a	
lelleka,	'let S first see it'	d.o.= i.o.
lellekoka,	'let S first see them'(+ 10 d.o./i.o.)	
	4. CONTINUOUS OPTATIVE	AKA / AKA
	Opt/tva = tvs + AKA + d.o./i.o. + k + a	
lelakaka,	'let S keep seeing it'	d.o.= i.o.
lelakakoka,	'let S keep seeing them'(+10 d.o./i.o.)	
	Opt/iva = ivs + AKA + k + a	
senakaka,	'let S keep going'	

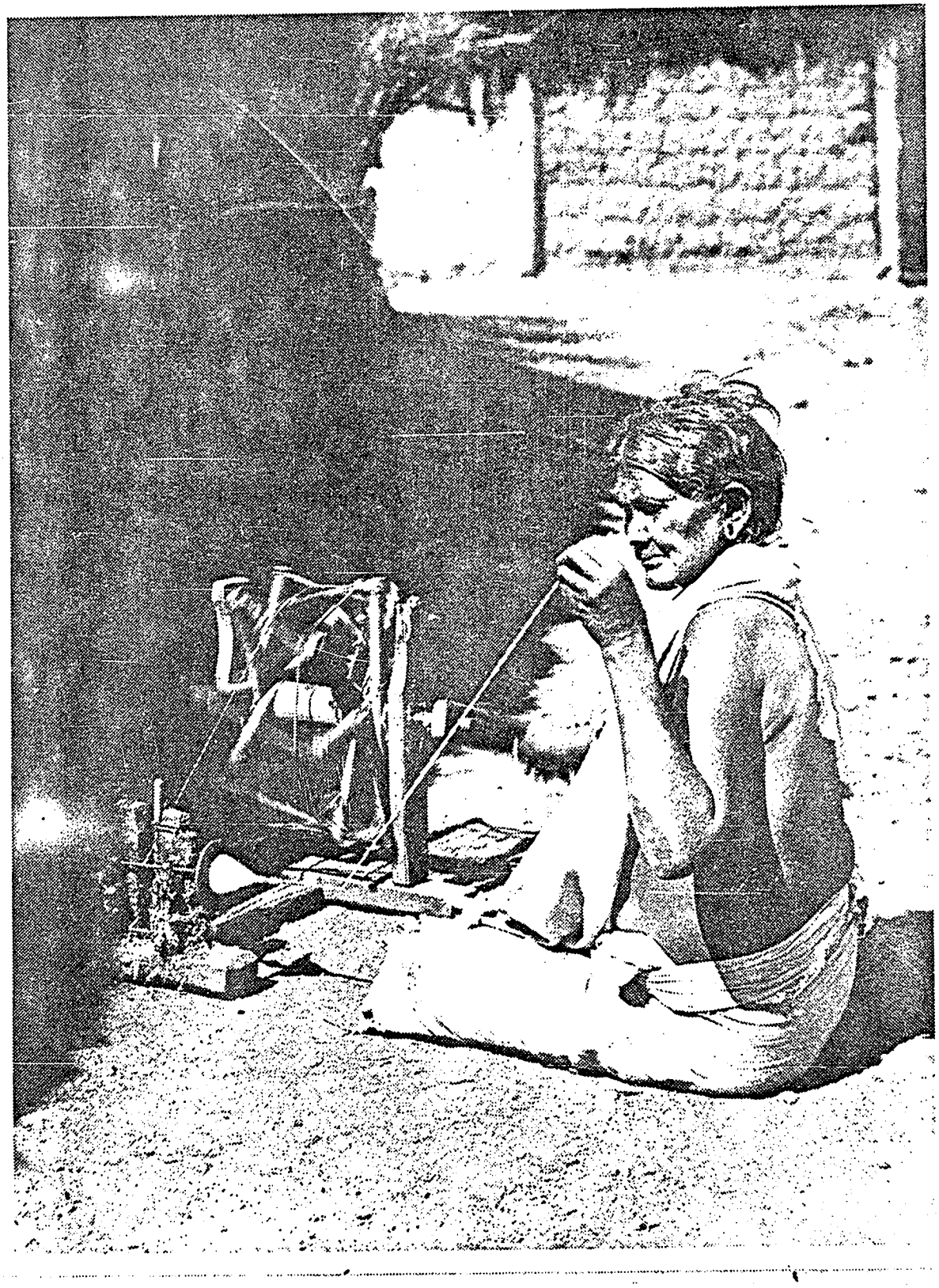
LIST OF ILLUSTRATIONS



INDIA: The Chota Nagpur Region

THE CHOTA NAGPUR REGION

HATURENI' GO'TEA'-LO'



BURIA CARKA-TE-E KAMITANA

DANGARAKO PAIKI-SUSUN-TANAKO

HARAM HASA-E KECO'TANA

KORA HON KERAKO-E GUPITANA

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(B) Unpublished Materials

Hoffmann, Rev.John, S.J., Encyclopedia Mundarica. Volume T, Volume U. Pre-publication materials on these two volumes made available by lists and microfilm from the Ranchi Mission Archives, by courtesy of the Ranchi Catholic Mission, Bihar, India.

Orea, Menas, Matura' Kahani: The Story of Matura. A 1000 page novel of the Munda people, by the man who served as John Hoffmann's chief informant in the preparation of the Encyclopedia. Pre-publication edition of the first 250 pages made available from the Ranchi Mission Archives, Ranchi, Bihar, India.

(C) Recorded Materials

A Passion Play in Mundari, directed by the Rev.John K.Bingham, S.J. Prepared and recorded by the staff of St.Michael's School, Bandgaon, Ranchi District, Bihar, India. Recorded in India at 3.3/4 ips. Two tapes. Playing time: 2 hours.

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