THE COPULA IN MUNDARI

I. INTRODUCTION

Mundari is one of the most important of the north Munda languages; it is spoken by well over a half million persons in the southern part of the state of Bihar, India. The grammatical sketch made here is based on the language of two educated informants who come from the area around Ranchi, the major city in the Mundari speaking region. Both are speakers of what may be called the "prestige dialect" which is also the standard language of a small but growing written literature. Field work was done by the author during the summer of 1962 under the auspices of the Munda Languages Project of the University of Chicago.[1]

Mundari forms will be cited in an orthography which is basically a transliteration of the standard Devanagari script. It may be considered a "broad phonetic transcription" in the IPA sense. We depart from IPA symbols to indicate retroflexion by a subscript dot, a glottal stop which is followed by a weak rearticulation of the preceding vowel by the symbol q, and the segments IPA $t\int$, $d_{\mathfrak{Z}}$, j by c, j and y respectively. As in other north Munda languages, q stands in a morphophonemic relationship with either j or g. Sentences will be written with spaces between "words", and word-division will again follow the standard orthography. Morpheme boundaries within words will be indicated by hyphens. Each Mundari example will be followed by an English gloss contained within single quotes. Occasionally for clarity, individual morphemes will be glossed directly above the Mundari example, and information about the grammatical categorization in the sentence will be written beneath it. We have also provided a glossary of the morphemes which appear in the examples used in the text and an appendix in which all of the transformations explicitly discussed in the text are stated in the order in which they apply in the grammar of Mundari. It will be noted that this order is somewhat different from the expository order in which the transformations are introduced, and hence numbered.

II. RELEVANT PHRASE STRUCTURE RULES IN MUNDARI

In this and in the following sections, certain phrase structure and transformational rules of Mundari syntax will be presented and partially justified. Primary attention will be given, of course, to constructions involving the copula, while other topics will be considered only when they impinge upon the discussion of such constructions.[2]

For our purposes, we may assume the following phrase structure rules for generating simple declarative indicative sentences in Mundari. Although the rules are numbered for convenience in making reference to them, their extrinsic ordering is not significant for the purposes of this sketch. We leave open the question, however, of the need for ordering the phrase structure rules in a complete grammar of Mundari.

1. $S \rightarrow NP\ VP$

2. $VP \rightarrow \left\{ \begin{matrix} \begin{bmatrix} \left\{ \begin{matrix} NP \\ AdjP \\ LocP \end{matrix} \right\} \end{bmatrix} \\ \left(\left\{ \begin{matrix} Q \\ NP \end{matrix} \right\} \right) (NP)\ (LocP) \end{matrix} \right\} (Neg) \left\{ \begin{matrix} Copula \\ Verb \end{matrix} \right\} Pr$

3. $Verb \rightarrow (Intens)\ V\ (Tense\ (Copula))$

4. $Copula \rightarrow Cop\ Tense$

5. $Tense \rightarrow Te\ T$

6. $AdjP \rightarrow (Intens) \left\{ \begin{matrix} Adj \\ Num \\ NP\ P \end{matrix} \right\}$

7. $LocP \rightarrow \left\{ \begin{matrix} Demons \\ NP \end{matrix} \right\} Loc$

8. $NP \rightarrow \left\{ \begin{matrix} Pt\ No \\ (Demons)\ N\ (No) \end{matrix} \right\}$

Rule 1 expands a sentence (S) into a noun phrase (NP) and a verb phrase (VP). The VP is expanded according to Rule 2. The outermost curly brackets of this rule are to be read disjunctively, so that the VP is expanded either into a copula construction containing a copula (Copula) preceded by either an NP, an adjective phrase (AdjP) or a locative phrase (LocP), or it is expanded into a verbal construction consisting of a main verb (Verb) preceded optionally by either a quotative element (Q) or an NP, followed by

an NP followed by a LocP. In addition, the VP always ends in a predicator (Pr), and may contain optionally a negative element (Neg) immediately preceding the Verb or Copula.

Rule 3 expands the Verb into a verb root (V) preceded optionally by an intensifier (Intens), and followed optionally by a tense construction (Tense). If there is a Tense, then also there may follow a Copula. By Rule 4, the Copula is expanded into a copula root (Cop) followed obligatorily by Tense. Rule 5 expands Tense into the constituent tense proper (Te) followed by a transitivity marker (T). Rule 6 expands an AdjP into an optional Intens followed by either an adjective (Adj), a numeral (Num), or a possessive construction, consisting of an NP followed by the possessive postposition (P). Rule 7 expands the LocP into either a demonstrative (Demons) or an NP followed by a locative postposition (Loc). Finally, by Rule 8, an NP is expanded into either a "pronoun" analyzable as a participant (Pt) and number (No) or a noun (N), which may be preceded by Demons and followed by No.

With respect to the phrase structure rules 1–8, we can easily define certain important grammatical relations for Mundari. In particular, the subject of the sentence is the NP which appears in the string NP VP produced by the application of Rule 1. The predicate of the sentence is the VP so produced. The direct object of the VP is the NP produced in initial position in the predicate by the second disjunct of Rule 2, while the indirect object of the VP is any NP which is not in initial position in the predicate (thus an indirect object follows either the direct object or Q). The predicate nominal is the NP in initial position in the predicate upon application of the first disjunct of Rule 2, while the predicate adjective is the AdjP so produced and the predicate locative is the LocP so produced.

III. THE MUNDARI LEXICON

By means of the phrase structure rules 1–8, it is possible to construct underlying phrase markers for a small class of Mundari sentences. These phrase markers have the property that their bottommost grammatical categories (viewing the phrase marker as a tree) are either the lexical categories N, V or Adj, or grammatical formatives, Q, Neg, Intens, Cop, Te, T, Num, P, Demons, Loc, Pt, No. Lexical items are substituted for the lexical categories by means of a special kind of substitution transformation, the theoretical aspects of which are discussed in detail by Chomsky (*op. cit.*). We shall not concern ourselves with the details of these transformations for Mundari, however facts about Mundari structure related to these transformations will be noted from time to time in the following discussion.

Of importance are certain subcategorizations of the grammatical formatives, which we now note. Mundari distinguishes five tenses (Te), which we shall call present (Pres), past (Pa), perfect (Perf), anterior (Ant) and aorist (Aor). The Ant cannot cooccur with Cop, while Pa obligatorily occurs with the Cop that follows V. Absence of the constituent Tense following a V is interpreted either as a future or as a kind of general tense. Since Tense must cooccur with Cop, the "future tense" of the copula must be expressed periphrastically.[3]

The category Num might well be considered a lexical one, since it includes the integers along with a small class of other number morphemes, such as *puraq* 'many'. Mundari has separate unrelated morphemes for the integers from one to ten, and also for the integer twenty. Eleven to nineteen are formed by composition of the units with ten, while a vigesimal system is used for larger integers up to and beyond 100. The units for 100, 1000, etc. have been borrowed from Hindi.

There are three demonstratives, two corresponding quite closely with English "this" and "that", while a third may be rendered something like "yonder". For our purposes, we shall consider there to be three locative postpositions (Loc), one designating location proper, and the other two indicating direction toward and away from the speaker. Intransitive verbs of motion must be subcategorized according to the Loc with which they cooccur, while Cop cooccurs only with the location proper postposition.[4]

Mundari inflects pronouns and animate nouns for singular (Sg), dual (Du) and plural (Pl) number. Inanimate nouns are not inflected for number, a fact which is presumably accounted for by a lexical substitution rule. The presence or absence of a No constituent is important for purposes of verb agreement. The "third person" pronouns can be considered to be noun phrases with the head N deleted, with No alone remaining. It will be observed that Sg has a considerable number of possible morphological realizations. When attached to an animate noun, it has zero phonological shape, but when functioning as a third person singular pronoun or as a subject agreement element, it has the shape *eq*. As an object agreement element, it has the shape *i*, and in one special circumstance as a subject agreement element it takes the form *iq*. The Pt is either speaker (Spkr) or hearer (Hr), or both, and combines with No phonemically to form the first and second person pronouns. These forms are all listed individually in the glossary.

[3] This fact was noted by John Hoffmann, *Mundari Grammar*, Calcutta, Catholic Press, 1903, p. 175.
[4] Mundari has a rich system of postpositions beyond the three simple locatives and the possessive discussed in this paper. For details, see Hoffmann (op. cit.).

Finally, the following observations concerning the morphological realization of Cop should be noted. The conjugation of Cop is suppletive; before Pa it takes the form *tai*, elsewhere the form *menaq*. Furthermore, the form which would otherwise be realized as *menaq* combines with Neg to form a special, morphologically simple, negative copula *bangaq*, *banoq* or *baŋ*. For the distribution of these three forms, see below, Section VI.

IV. AGREEMENT TRANSFORMATIONS

Before discussing the special properties of copula sentences [5] some comments about agreement in non-copula sentences are needed. First, we observe that if the subject of the sentence is animate, a part of it is usually reproduced somewhere in the predicate, either at the very end of the predicate, immediately before the V, or in case the V is followed by Cop, it may occur immediately before the Cop. The piece that is reproduced is (Pt)No, that is, if the subject is a first or second person pronoun, the entire pronoun, or else just the number constituent of the subject. Examples (1)–(4) below are illustrative.

(1)   (a)   hoḍo-ko   ka   kami-ke-d-   a-   ko   'The men didn't work'
man   not   work

(b)   *hoḍo-ko ka-ko kami-ke-d-a* 'The men didn't work'

(2)   (a)   *a-pe ka duram-ta-n-a-pe* 'You (pl.) aren't sleeping'

(b)   *a-pe ka-pe duram-ta-n-a* 'You (pl.) aren't sleeping'

(3)   (a)   *a-pe ka   duram-aka- n tai- ke-n-a- pe*
NP Neg   V   Perf T Cop Pa T Pr Pt   'You (pl.) haven't

(b)   *a-pe ka duram-aka-n-pe tai-ke-n-a*   been sleeping'

(c)   *a-pe ka-pe duram-aka-n tai-ke-n-a*

sky   make
noise

(4)   *rimbil saḍi-ta-n-a*   'It is thundering'

Note that in (4) there is no agreement with the inanimate subject.

The different choices in (1)–(3) are all grammatical, although native speakers will generally express a preference for the (b) or (c) varieties. To handle these facts, we shall assume that there is a subject-agreement trans-

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[5] We shall use the expression "copula sentence" to mean any (simple) sentence in Mundari containing the copula construction as its predicate.

formation which copies (Pt) No after the entire predicate, and a single subject-agreement movement transformation which optionally reattaches the agreement element immediately before V or Cop. When the movement transformation is confronted with a choice, as it would be in (3), we assume that it is free to do either. There are a number of independent reasons for stating the transformations in this fashion. One of them has to do with the nature of imperative sentences, and is discussed in my 'Mundari Verb Conjugation' (to appear in *Linguistics*). When the subject is inanimate, there will be no No constituent to copy, and hence no overt indication of agreement.

In certain cases, the subject-agreement movement transformation will shift the agreement element to a position directly following the number constituent of the subject. When this happens, the agreement element is deleted, unless the element is Pt No. For example:

(5) (a) *hoḍo-ko kami-ke-d-a-ko* 'The men worked'
    (b) *hoḍo-ko kami-ke-d-a*   ,,
(6) (a) *hoḍo-Ø duram-ta-n-a-eq* 'The man is sleeping'
    (b) *hoḍo-Ø duram-ta-n-a*   ,,

However:

(7) (a) *a-pe duram-ta-n-a-pe* 'You (pl.) are sleeping'
    (b) *a-pe-pe duram-ta-n-a*   ,,

It is important to realize that this deletion occurs only when the subject agreement element immediately follows the number constituent of the subject. In case it follows the number constituent of the object, it is not deleted, even if they happen to be identical. For example:

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                 child beat
(8) (a) hoḍo-ko    hon-ko    dal-ke-d- ko-a- ko  'The men beat the
        [N   P1]  [N   P1]   V Tense P1 Pr P1     children'
        [  NP  ]  [  NP  ]
    (b) hoḍo-ko hon-ko-ko dal-ke-d-ko-a                      ,,
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The Mundari subject-agreement deletion transformation is thus of interest, in that it shows the importance of conceiving of transformations as operating on structural descriptions of sentences, and not merely on their morphemic contents.

Mundari also shows agreement with direct and indirect objects; the object agreement element is added directly following the constituent Tense, and like the subject agreement element it is a copy of the constituent(s) (Pt) No.

Example (8) illustrates agreement with a P1 direct object, while the following are additional illustrations.

we see
(9) *hoḍo-ko a-le nel-aka-ḍ-le-a-ko* 'The men have seen us'
$\begin{bmatrix} N & P1 \\ & NP \end{bmatrix}$ $\begin{bmatrix} Pt \\ NP \end{bmatrix}$ V Tense Pt Pr P1

one
(10) *miad hoḍo-Ø hon-Ø -eq dal-aka-ḍ-i- a* 'A man has beaten
             N Sg   V Tense Sg Pr the child'

The phonological form of the transitivity element T depends upon whether or not it is followed by an object agreement element; if it is, it has the form *d*, if not, *n* (cf. Example (2)). If, however, the direct object is inanimate, the following situation arises: there is no overt (i.e. phonologically nonzero) indication of object agreement, nevertheless the constituent T is still pronounced *d*. For example:

(11) *hoḍo-Ø oḍaq   nel-aka-d-a- eq* 'The man has seen the house'
     $\begin{bmatrix} N & Sg \\ NP \end{bmatrix}$ $\begin{bmatrix} N \\ NP \end{bmatrix}$ V Te T Pr Sg

This observation suggests that in sentences such as (11), there is present a phonologically zero object-agreement element, whose presence is sufficient condition for the constituent T to be pronounced *d*. This analysis is nicely confirmed by the following additional evidence.

First, consider sentences just like (11), except without Tense. In such sentences, the object agreement element *is* phonologically overt, having the form *e*:

(12) *hoḍo-Ø oḍaq nel-e-a-eq* 'The man will see the house'

Compare:

(13) *hoḍo-Ø hon-Ø nel-i-a-eq* 'The man will see the child'

Second, when the Te is Pres, the object agreement element is obligatorily permuted with Tense, so that the agreement element immediately follows V. In such cases, too, the object agreement element is realized as *e*.

I moon
(14) *a iɲ canḍuq ka iɲ nel-e-ta-n-a* 'I don't see the moon'

Compare:

(15) *a-iɲ hoḍo-Ø ka-iɲ nel-i-ta-n-a* 'I don't see the man'

We observe that the element which agrees with an inanimate object is phonologically overt whenever it follows V, and is zero when it follows

Tense. It will be seen also that as a consequence of the permutation of the object agreement element with Pres T, the transitivity marker is not followed by the object agreement element in (14)–(15), even though that element is present elsewhere in the sentence. Hence T is realized as *n*. For details of other interesting consequences of this permutation, see my 'Mundari Verb Conjugation' (*op. cit.*).

If we now re-examine Exx. (1) and (5), we observe that it is possible to have sentences in Mundari in which T is realized as *d*, although there apparently are no direct objects in them at all. It turns out that all such sentences have as their V, a verb root which has some notion of physical activity inherent in its semantic interpretation. Other examples of such roots are *nir* 'run' and *sen* 'walk'. It is instructive to contrast the "behavior" of the roots *sen* and *senoq* 'go', the latter being a pure intransitive.

		village to			
(16)	*hoḍo-Ø*	*hatu te*	*sen-e-ta-n-a-eq*		'The man is walking to
	NP	LocP	V Tense PrSg		the village'
(17)	*hodo-Ø hatu te senoq-ta-n-a-eq*				'The man is going to the village'

For reasons which go beyond the scope of this discussion, we assert that verbs such as *sen, nir* and *kami* cooccur with a "dummy" direct object which is never itself overtly realized, but which is the source for the object agreement element. For further details, and for justification of this assertion, see my 'Mundari Verb Conjugation' (op. cit.).

Finally, let us note the fact that Q also acts effectively as an inanimate direct object, in order to account for the occurrence of the agreement element in such sentences as:

		yes indeed say		
(18)	*hoḍo-ko*	*"he mar"*	*men-ke-d-a- ko*	'The men agreed'
	NP	Q	V Te T Pr Pl	
(19)	*hoḍo-ko "he mar" men-e-a-ko*			'The men will agree'

V. SUBJECT AGREEMENT IN COPULA SENTENCES, DELETION OF TENSE AND OF *menaq*

When compared with the conjugation of verbs, the conjugation of the copula in Mundari appears to be full of peculiar irregularities. What we shall attempt to show in this section and in the following one, is that these apparent irregularities are due to the operation of several transformations whose domain of application is limited entirely to copula constructions.

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To be precise, only the Cop *menaq*, and its negative counterpart, are conjugated differently from verb roots. The conjugation of the suppletive Cop *tai*, which it will be recalled cooccurs only with Past, is like that of any intransitive V in the past tense. The following are illustrative:

	this	headman		
(20)	*ne hoḍo-Ø munḍa*	*-Ø-eq tai- ke-n-a*	'This man was the
	NP	NP	Sg Cop Pa T Pr	headman'

	mango	sweet		
(21)	*uli*	*sibil tai- ke-n-a*	'The mango was sweet'
	NP	AdjP Cop Pa T Pr	

(22)	*hon-ko oḍaq-re-ko tai- ke-n-a*	'The children were in the
	NP LocP P1 Cop Pa T Pr	house'

To discuss the Cop *menaq* at all coherently, we need to consider separately constructions involving predicate nominals, adjectives and locatives, and cutting across this subclassification, we need to consider whether or not the Te is Pres (the only other possibilities are Perf and Sp Pa, and we will give examples only with Perf in the following account). Finally, the presence or absence of Neg is of importance; in this section we shall deal only with affirmative copula sentences, and in Section VI below we shall deal with negative sentences.

Let us first consider the case in which we have a predicate nominal and Perf. The following examples are typical.

	flower lotus		
(23)	*ne ba salukid menaq-aka- n- a*	'This flower was once a
	NP NP Cop Perf T Pr	lotus'

	that		
(24)	*en hoḍo-ko munḍa-ko menaq-ko-aka- n- a*	'Those men have
	NP NP Cop P1 Perf T Pr	been headmen'

Example (24) has an odd peculiarity: the agreement element occurs in front of the Tense constituent, a situation which never arises in the conjugation of verb roots, except with Pres, and then it is the object agreement element, not the subject agreement element which appears in that position. To account for its position in (24), we clearly need a special transformation for moving it in front of the Tense (we can equally well say that it is attracted to the Cop – in fact we shall say so). We can state such a transformation as follows.[6]

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[6] In the statement of the structural conditions for the transformations discussed in this paper, we shall not explicitly state the greater environment in which they are applied. They are to be understood as all applying within a string dominated by a single occurrence of S.

(I) *Subject agreement attraction*

$$\underset{1}{menaq} \quad \underset{2}{\underbrace{Tense \ Pr}} \quad \underset{3}{\underbrace{(Part) \ No}} \quad \rightarrow 1+3 \ 2 \ \varnothing$$

When Sg is attracted to *menaq*, it is pronounced *i*, rather than as *eq*, its customary pronunciation as a subject agreement element. Cf. below, (42).

Now consider sentences comparable with (23)–(24), except that the Te is Pres. In such sentences, the constituents Cop and Pr are deleted. Corresponding to (23)–(24), we have (25)–(26):

(25)   *ne ba salukid ta-n-aq*   'This flower is a lotus'
(26)   *en hoḍo-ko munḍa-ko ta-n-ko*   'Those men are headmen'

Not only are Pr and Cop deleted, but also, we observe, in case the subject is inanimate, there is an overt subject agreement element of the form *aq*. Sentences of the form (25), in which agreement with an inanimate subject is marked, are unique in Mundari. We shall not attempt to state a rule to account for this remarkable fact, but shall only state the rule governing the deletion of Pr and Cop in such sentences. We shall refer to this rule simply as the copula deletion transformation.

(II) *Copula deletion*

$$\underset{1}{\underbrace{NP \ (Neg)}} \quad \underset{2}{Cop} \quad \underset{3}{\underbrace{Pres \ T}} \quad \underset{4}{Pr} \rightarrow 1 \ \varnothing \ 3 \ \varnothing$$

Rule (II) must be considered to precede Rule (I), since otherwise the agreement element will have been attracted to Cop prior to the application of (II). But if this were to happen, the agreement element would be put in the wrong place in sentences like (25)–(26). Unlike other subject agreement elements, the position of those elements in (23)–(26) is fixed; they cannot be moved by the subject-agreement movement transformation discussed informally above in Section IV. This fact can be handled by requiring that for a subject agreement element to be moveable, it must be preceded immediately by Pr. This condition is violated in (23)–(26).[7]

Next, we consider those cases in which the Cop occurs with a predicate adjective. Again we need to distinguish the case in which the Te is Pres from the case in which it is not. In the former case, we observe that the constituent Tense, made up of Pres plus T, is deleted obligatorily. The subject-agreement element is, however, attracted to the Cop. Thus we have:

[7] This observation will also account for the fixed position of subject agreement elements in imperative sentences; cf. above, p. 79.

tall
(27)   *hoḍo-ko maraŋ menaq ko-a*   'The men are tall'
            NP   AdjP Cop P1 Pr
tree
(28)   *daru maraŋ menaq-a*   'The tree(s) is (are) tall'

The deletion of Tense in (27)–(28) is accomplished by a present tense deletion transformation. We shall not state this rule yet since it is somewhat more general, applying in the presence of a predicate locative as well, a case we shall consider directly. It may be wondered why we assume that Pres T occurs at all in the derivation of (27)–(28), since it is conceivable that these sentences could be generated directly by the phrase structure rules without Tense. We reject this latter alternative (which is the only reasonable one) on the grounds first that (27)–(28) and (33)–(34) below are all understood as "present tense" utterances, and second that we need to account for the fact that the Cop cannot overtly cooccur with Pres T in predicate adjective and locative constructions, while with a predicate nominal construction we find Pres T occurring in a copula sentence. Essentially by symmetry, we believe that the simplest explanation is to insist that Pres T may freely be chosen following Cop and that on the one hand the Cop is deleted if a predicate nominal precedes, and that on the other Pres T is deleted if anything else precedes.

Besides (27)–(28), we find synonymous sentences in which the AdjP has replaced the Cop. In the examples below (29)–(30) are mere stylistic variants of (27)–(28), while the (a) and (b) parts of (30)–(31) are variants of one another.

(29)   *hoḍo-ko maraŋ-a-ko*   'The men are tall'
(30)   *daru maraŋ-a*   'The tree(s) is (are) tall'
(31) (a) *hoḍo-ko maraŋ menaq-ko-aka-n-a*   'The men have been tall'
     (b) *hoḍo-ko maraŋ-aka-n-a-ko*   ,,
(32) (a) *daru maraŋ menaq-aka-n-a*   'The tree(s) has (have) been tall'

   (b) *daru maraŋ-aka-n-a*   ,   ,

Notice that (29) differs from (27) and that (31b) differs from (31a) in the placement of the subject agreement element; in the latter but not in the former cases, that element has been attracted to the Cop. This fact is presumably explained by the prior deletion of the Cop in (29) and (31b), that is the transformation which replaces the Cop by the AdjP precedes Rule (I). We shall postpone the statement of this transformation until we have discussed the negative counterparts to the affirmations (27)–(32) below in Section VI.

Finally, we consider those cases in which the Cop occurs with LocP. In case the Te is Pres, the constituent Tense is deleted; a fact which we noted above in our discussion of the predicate adjective construction. The following examples are typical:

		that place in				
(33)	*hoḍo-ko*	*en taq*	*re*	*menaq-ko-a*		'The men are there'
	NP	[NP Loc] LocP		Cop P1 Pr		

		ten path village in			
(34)	*gelea hora*	*hatu re menaq-a*			'There are ten paths in
	NP	LocP	Cop	Pr	the village'

The rule which deletes Pres T following a predicate adjective or a predicate locative can be stated without making explicit reference to either of these constituents; we simply order this transformation, which we call the present tense deletion rule, after Rule (II), but before (I).

(III) *Present tense deletion*

$$\text{Cop} \quad \overbrace{\text{Pres T}} \quad \text{Pr}$$
$$1 \qquad 2 \qquad 3 \rightarrow 1 \ \varnothing \ 3$$
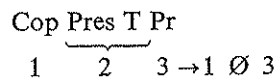
As before, in the case of predicate adjective constructions, the Cop may optionally be replaced by a preceding LocP. However, unlike sentences which are derived by replacing the Cop by AdjP, sentences derived by replacing the Cop by LocP still have the subject agreement element attracted. The following examples are illustrative; (35)–(36) are synonymous with their variants containing the Cop (33)–(34), while the (a) and (b) parts of (37) and (38) are variants of one another.

(35)	*hoḍo-ko en taq re-ko-a*	'The men are there'
(36)	*gelea hora hatu re-a*	'There are ten paths in the village'
(37)	(a) *hoḍo-ko en taq re menaq-ko-aka-n-a*	'The men have been there'
	(b) *hoḍo-ko en taq re-ko-aka-n-a*	,,
(38)	(a) *gelea hora hatu re menaq-aka-n-a*	'There have been ten paths in the village'
	(b) *gelea hora hatu re-aka-n-a*	,,

The rule which optionally replaces the Cop by a preceding LocP may be stated as follows. This rule follows Rule (I) to account for the attraction of the subject agreement element in (35), (36), (37b), (38b).

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(IV) *Optional copula replacement by LocP*

LocP *menaq*
1   2   → Ø 1

Notice that Rule IV operates only when *menaq* is immediately preceded by LocP.

VI. NEGATIVE COPULA SENTENCES

The negative counterparts of affirmative sentences containing the Cop *tai* are exactly like negative counterparts of affirmative sentences containing intransitive verbs, and require no special discussion. The following are the negations of (20)–(22).

(39)	*ne hoḍo-Ø munḍa-Ø ka-eq tai-ke-n-a*	'This man was not the headman'
(40)	*uli sibil ka tai-ke-n-a*	'The mango was not sweet'
(41)	*hon-ko oḍaq re ka-ko tai-ke-n-a*	'The children were not in the house'

The negations of sentences containing the Cop *menaq*, however, contain instead of the morpheme sequence *ka menaq, a special fused negative copula, which has the form *bangaq* before the first and third person singular (animate) subject agreement elements, the form *banoq* when not followed by any agreement element, and the form *baŋ*, when followed by any other agreement element than the first and third person singular. Thus:

		not-be		
(42)	*ne hoḍo-Ø maraŋ*	*bangaq*	*-i*	*-a*	This' man is not tall'
	Sg	Neg + Cop		Sg	
(43)	*uli sibil banoq-a*				'The mango is not sweet'
(44)	*hon-ko oḍaq re baŋ-ko-aka-n-a*				'The children have not been in the house'

All sentences which contain the Cop *menaq* as affirmatives form their negations with the negative copula. Examples (42)–(44) illustrate the negative copula in construction with AdjP and with LocP. Examples (45)–(46) below illustrate the construction with NP; these sentences are the negations of (22)–(23).

(45)	*ne ba salukid banoq-aka-n-a*	'This flower was not once a lotus'

(46)   *en hoḍo-ko munḍa-ko baŋ-ko-aka-n-a*   'Those men have not been headmen'

Let us now state a rule, which we shall call the negative copula fusion transformation, which together with appropriate morphophonemic rules accounts for the facts just discussed.

(V) *Negative copula fusion*

Neg *menaq*
1   2   → Ø 1+2

We may assume that Rule (V) follows Rule (I), so that subject agreement attraction is true for the negative copula just as for the affirmative one.

We now investigate the negative counterparts of affirmative copula sentences in which the copula has been deleted. First, let us examine sentences in which *menaq* has been deleted according to Rule (II). In such sentences, Neg is realized by the usual negative morpheme *ka*. Thus, corresponding to (25)–(26), we have the negations:

(47)   *ne ba salukid ka ta-n-aq*   'This flower is not a lotus'
(48)   *en hoḍo-ko munḍa-ko ka ta-n-ko*   'Those men are not headmen'

It is clear that if Rule (II) precedes Rule (V), this fact is automatically accounted for. The Cop is deleted before it can fuse with Neg.

Next let us consider sentences in which *menaq* has been deleted in accordance with the rule, as yet not stated, which replaces the Cop with AdjP. Then, Neg is again realized as *ka*, and furthermore, the Neg precedes the AdjP. The fact that Neg now precedes the AdjP is accounted for by the observation that the Cop is not simply deleted, but is replaced by the AdjP. The following examples (49)–(52) are the negations of (29), (30), (31b), and (32b) respectively.[8]

(49)   *hoḍo-ko ka-ko maraŋ-(ge)-a*   'The men are not tall'
(50)   *daru ka maraŋ-(ge)-a*   'The tree(s) is (are not tall'
(51)   *hoḍo-ko ka-ko maraŋ-(ge)-aka-n-a*   'The men haven't been tall'
(52)   *daru ka maraŋ-(ge)-aka-n-a*   'The tree(s) has (have) not been tall'

We may formulate the transformation which replaces the Cop by AdjP as follows. This transformation, which we shall call copula replacement by

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[8] The morpheme *ge* in parentheses in (49)–(52) is an emphatic morpheme whose presence makes these and similar sentences in which Cop has been replaced by AdjP sound more natural. Its occurrence is not obligatory, however.

AdjP, precedes Rule (I) (in order to prevent subject attraction in (49)–(52)), but follows both Rules (II) and (III) (in order not to complicate the statement of those rules). Obviously, also, the rule precedes Rule (V).

(VI) *Optional copula replacement by AdjP*

> AdjP (Neg) *menaq*
> 1   2   3   → Ø 2 1

We are now faced with those cases in which *menaq* has been deleted according to Rule (IV). It turns out that there are no negative sentences in Mundari in which *menaq* has been replaced by LocP, that is, there are no negations directly corresponding to (35), (36), (37b) and (38b). Mundari speakers uniformly reject such non-sentences as:

(53)   **hoḍo-ko ka en taq re-ko-a*

The only way to express this idea is to leave the copula in, as in (54):

(54)   *hoḍo-ko en taq re baŋ-ko-a*   'The men aren't there'

The fact that sentences of the form (53) are rejected, however, follows immediately from our formulation of Rule (IV). Since, in negative copula sentences with a predicate locative, Neg is located between the LocP and *menaq*, the latter cannot be deleted by Rule (IV); the structural condition for Rule (IV) requires that nothing intervene between the LocP and *menaq*.

This completes our discussion of the structure of copula sentences, both affirmative and negative. We have shown how the striking peculiarities of the conjugation of the copula, and other facts concerning copula sentences follow directly from the application of six simple transformations which happen only to operate on copula sentences.

In the following section, we discuss a rule which replaces a particular intransitive verb with a preceding LocP, a rule which is quite similar in form to the rules of copula replacement discussed in this section. Then in the final section, we shall discuss pre-nominal modification, and in particular the relationship between adjectives in predicate position and those in attributive position. We shall also attempt to demonstrate how the expression of possession in Mundari is intricately tied up with copula sentences.

VII. REPLACEMENT OF *senoq* 'GO' BY LOCP

It will be recalled that Example (35), which we reproduce here for convenience, is arrived at upon deletion of Pres T by Rule (III), and of *menaq* Rule (IV).

(35)   *hoḍo-ko en taq re-ko-a*   'The men are there'

For each sentence of the type (35) it is possible to find a sentence containing exactly the same elements, except that in place of the postposition *re* 'in', the trans-locative postposition *te* 'to' is found. Thus, in this case, we have:

(55)   *hoḍo-ko en taq te-ko-a*   'The men will go there'

Despite the point-for-point morphological correspondence of (55) with (35), the difference in their respective semantic interpretations indicates that the two sentences have quite different underlying representations.

We can also arrive at this conclusion by purely syntactic considerations. First, we observe that (55), unlike (35), cannot possibly have Cop anywhere in its underlying phrase marker. Neither (56a) nor (56b) are possible in Mundari.

(56) (a) **hoḍo-ko en taq te menaq-ko-a*
      (b) **hoḍo-ko en taq te-ko tai-ke-n-a*

Second, we observe that corresponding to (55), there is a sentence containing Pres T:

(57)   *hoḍo-ko en taq te-ko-ta-n-a*   'The men are going there'

Thus, (55) has no occurrence of Tense in its underlying representation, which in turn means that (55) cannot be a copula sentence. Third, we observe that (55) has a negative counterpart with *ka*, whereas copula sentences with a predicate locative like (35) do not:

(58)   *hoḍo-ko ka en taq te-ko-a*   'The men won't go there'

Fourth, we note that (55) has an imperative counterpart (59), while copula sentences in general never occur in the imperative mood.[9]

(59)   *a-m en taq te-m*   'Go there'

We have, clearly, overwhelming syntactic evidence for not considering (55) to be a copula sentence. To determine its correct syntactic analysis, we can again make use of its semantic interpretation. There is no question but that (55) is synonymous with the following sentence (60):

(60)   *hoḍo-ko en taq te-ko senoq-a*   'The men will go there'

Since the synonymy of (55) and (60) is exact, the two sentences being simply stylistic variants of one another, and since there is no other sentence syn-

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[9] For a thorough discussion of the imperative in Mundari, see my 'Mundari Verb Conjugation'.

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onymous with (55) and (60) (except trivially, the variant of (60) in which the subject agreement element follows the predicator), it is reasonable to suppose that they have exactly the same underlying representation, with (55) being derived by means of the application of an optional rule which replaces *senoq* 'go' by the LocP in construction with it. Such a rule may be stated as follows:

(VII) *Optional senoq replacement*

$$\text{LocP (Neg) } senoq$$
$$1 \quad 2 \quad 3 \ \rightarrow \ \varnothing \ 2 \ 1$$

Again, the motivation for considering that LocP replaces *senoq* rather than that *senoq* is simply deleted, is to account for the position of the LocP with respect to Neg in sentences such as (58).

We still, however, have not accounted for the place of the subject agreement element in (55) and (58). To do so, we need to generalize Rule (I), the subject agreement attraction transformation, to say that not only the Cop *menaq* attracts that element, but that also a LocP does so when it immediately precedes the constituent(s) (Tense) Pr. Furthermore we require that Rule (VII) precede the newly revised Rule (I). We now state Rule (I) in the following fashion:

(I') *Subject agreement attraction*

$$\begin{Bmatrix} menaq \\ \text{LocP} \end{Bmatrix} \underbrace{\text{(Tense) Pr}} \underbrace{\text{(Part) No}}$$
$$1 \qquad\qquad 2 \qquad\qquad 3 \ \rightarrow \ 1{+}3 \ 2 \ \varnothing$$

This formulation correctly prevents subject agreement attraction in imperative sentences, since one of the properties of imperative sentences is the absence of Pr (cf. Ex. (59)). Formulating the attraction rule in this way, too, allows us to say that the one replacement transformation that formerly followed the attraction rule, Rule (IV), may precede it. Thus, all of the replacement transformations may appear together, namely before Rule (I'), and furthermore since they are mutually unordered and structurally similar to one another, it is tempting to try to state the rules together as one rule. Unfortunately, this effort runs foul of the three transformations' different requirements concerning Neg. As we shall see in the next section, although Rules (VI) and (VII) appear to treat Neg in an identical fashion, this is not in fact quite true, with the consequence that the three transformations have three different conditions concerning the presence or absence of Neg.

As a final comment for this section, we note that the third important locative postposition, the cis-locative *ete* 'from', is not involved in any verb-

replacing transformation such as Rule (VII). That is, there is no sentence of the form:

(61)   *hoḍo-ko en taq ete-ko-a*

related to, say:

come
(62)   *hoḍo-ko en taq ete-ko hijuq-a*   'The men will come from there'

in the same way that (55) is related to (60).

VIII. PRE-NOMINAL MODIFICATION

In this section, we deal with the question of the modification of nouns by transforms of sentences which function roughly like relative clauses in a language like English. We have not made any provision in the phrase structure rules to accommodate these clausal modifiers, nor in fact have we allowed for the modification of nouns by various kinds of quantifiers and other words which cannot be considered to be related to these clauses. It is a straightforward matter to make this provision, but to do so will lead us far beyond the intended scope of this article.

Also, rather than explicitly state the rules which determine the form of pre-nominal clausal modifiers, we shall simply state their general properties and indicate how they are related to full sentences. Upon doing this we shall examine more closely modifying clauses derived from copula sentences.

As the adjective "pre-nominal" suggests, these clauses appear directly in front of the nouns they modify; in fact in front of any other modifiers, such as Demons, which the noun might have. Furthermore, they do not contain any pronominal referent comparable to Indo-European "relative pronouns". We may assume that the sentence underlying the clause contains a noun which is identical to the noun being modified, and that this noun is simply deleted rather than pronominalized. In addition, the predicator and the subject agreement element, provided that it has not been attracted by Rule (I'), are deleted from the underlying sentence. The following examples are illustrative:

(63)   *a-m nel- ke- d-ko hoḍo-ko*   'the men whom you saw'

NP ⌈V Te T Pl⌉ N Pl
   | Verb |
   ⌊ VP ⌋

(64)   *oḍaq ete hijuq-ta- n hon kiŋ*   'the two children who are
         LocP   V   Te T N Du   coming from the house'

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In Example (63), we may assume that the modifying clause is derived from the sentence:

(65)   *a-m hoḍo-ko nel-ke-d-ko-a- m*   'You saw the men'
         NP   NP   V Te T P1 Pr Pt

in which the shared noun is the direct object of *nel* 'see', while in (64), the modifier is from:

(66)   *hon-kiŋ oḍaq-ete hijuq-ta-n-a-kiŋ*   'The two children are
                                                   coming from the house'

in which the shared noun is the subject of the sentence. In case the shared noun is embedded in a LocP in the modifying clause, then the "dangling" postposition is regularly moved to the end of the clause, and the morpheme *n* is added to the postposition in case the modified noun is animate, while *aq* is added in case the modified noun is inanimate. In the following ex-amples, part (b) is the full expression of the sentence underlying the modi-fying clause in the NP (a). Examples (67) and (68) illustrate cases in which the shared noun is embedded in a LocP.

                     enter
(67) (a) *a-m bolo -aka-n re-aq oḍaq*   'the house which you have
                                              entered'

     (b) *a-m oḍaq re bolo-aka-n-a-m*   'You have entered the house'
(68) (a) *a-m hijuq ete-n babu-Ø*   'the babu from whom you will
                                              come'
     (b) *a-m babu-Ø ete hijuq-a-m*   'you will come from the babu'

When the modifying clause is based on a copula sentence, the same general observations hold true, but when the Cop is *menaq*, the subject agreement element will be retained, since it will have been attracted to the Cop. Ex-amples (69)–(72) are typical.

                field   cow
(69) (a) *loyoŋ re tai-ke-n uḍiq-ko*   'the cattle which were in
                                              the field'

     (b) *uḍiq-ko loyoŋ re-ko tai-ke-n-a*   'The cattle were in the field'
(70) (a) *maraŋ menaq-ko ne hoḍo-ko*   'these men who are tall'
     (b) *ne hoḍo-ko maraŋ menaq-ko-a*   'These men are tall'
(71) (a) *maraŋ baŋ-ko ne hoḍo-ko*   'these men who aren't tall'
     (b) *ne hoḍo-ko maraŋ baŋ-ko-a*   'These men are not tall'
(72) (a) *oḍaq re menaq sengel*   'the fire which is in the house'
     (b) *sengel oḍaq re menaq-a*   'The fire is in the house'

With one important exception, it is also possible to have in Mundari a modifying clause based on a copula sentence in which the copula has been deleted. Again, if the modifying clause ends in a postposition, plus optionally an agreement element, then the agreement element (if present) is deleted, and *n* or *aq* is added to the postposition depending upon the animacy of the modified noun. In the following examples (73) is synonymous with (70), while (74) is synonymous with (72).

(73) (a) *maraŋ ne hoḍo-ko*   'these tall men
     (b) *ne hoḍo-ko maraŋ-a-ko*   'These men are tall'
(74) (a) *oḍaq re-aq sengel*   'the fire in the house'
     (b) *sengel oḍaq re-a*   'The fire is in the house'
(75) (a) *oḍaq re-n hon-ko*   'the children in the house'
     (b) *hon-ko oḍaq re-ko-a*   'The children are in the house'

The following example, in which *senoq* has been deleted from the underlying modifier should also be noted:

(76) (a) *oḍaq te-n hon-ko*   'the children who will go to the house'
     (b) *hon-ko oḍaq te-ko-a*   'The children will go to the house'

The single exception to the observation that any sentence with its copula deleted can serve as the basis for a pre-nominal modifying clause is provided by such sentences as:

(77)   *ne hoḍo-ko ka maraŋ-a-ko*   'These men are not tall'
(78)   *uli ka sibil-a*   'The mango is not sweet'

since it is ungrammatical to say:

(79)   **ka maraŋ ne hoḍo-ko*   'these men who are not tall'
(80)   **ka sibil uli*   'the mango which is not sweet'

The only permitted modifiers for expressing the notions of (79)–(80) are those in which the copula has not been deleted, namely:

(81)   *maraŋ baŋ-ko ne hoḍo-ko*   'these men who are not tall'
(82)   *sibil banoq uli*   'the mango which is not sweet'

It is not at all obvious how one should account for the non-occurrence of (79) and (80) except in an *ad hoc* fashion. Perhaps the most plausible explanation is the claim that the copula replacement by AdjP rule is more restricted in its application on all cycles except the last one[10], that is to say

[10] For an account of the notion of cyclical application of transformational rules in syntax, see Chomsky, op. cit., pp. 134–137.

that Rule (VI) when it applies to a sentence embedded as a modifier to some noun applies in the form:

(VI') *Optional replacement of menaq by AdjP in subordinate clauses*

AdjP *menaq*
  1   2   → Ø 1

while the less restricted version, Rule (VI), applies to main clauses. At the moment, I know of no cases in Mundari or in other languages like this one, in which one wishes to argue that a particular rule applies in a more restricted form in dependent clauses than it does in independent clauses, but if other convincing cases like this should be found, then this formulation will not in fact be so ad hoc in character.

This takes us finally to possessive modifiers. We wish to say that these modifiers are nothing more than a special kind of pre-nominal modifier derived from a full sentence in the same way that those discussed above are. What is not at all clear, however, upon first examination of possessive modifiers is how they are in fact derived from full sentences. We shall therefore first discuss the superficial characteristics of possessive modifiers without consideration of their underlying structure.

The actual form which possessive modifiers take depends upon the lexical classification of the noun it modifies and whether or not the possessor NP is a pronoun. When the possessor NP is not a pronoun (i.e. it contains an N), then possession is expressed obligatorily by affixing the possessive postposition *aq* to the possessor, and the entire construction precedes the modified, or possessed, N. A typical example is the following:

(83)   *ne hoḍo-Ø aq odaq*   'this man's house(s)'
$$\begin{bmatrix} [\text{NP} \quad \text{P]} \ \text{N} \\ \text{NP} \end{bmatrix}$$

If, however, the possessor is expressed by a pronoun, there are three ways of expressing possession, one of which is possible with a restricted class of possessed nouns, while the other two are possible in general. One of these two general ways is as before; the postposition *aq* is affixed to the pronoun, and the possessor stands before the modified noun. A typical example is provided by (84):

you-two
(84)   *a-ben aq oḍaq*   'your (dual) house(s)'
$$\begin{bmatrix} \text{Pt} \ \text{P]} \ \text{N} \\ \text{NP} \end{bmatrix}$$

For every construction of the type (84), there is moreover a permitted syn-

onymous alternative, although it is not so frequently employed, which is to prefix the morpheme *ta* to the possessor pronoun, and to place this construction after the modified noun. Thus (85) is semantically equivalent to (84):

(85)   *oḍaq ta-ben*   'your (dual) house(s)'

In all these cases, Sg (the third person singular pronoun) is realized morphologically as *e*, as in:

(86) (a) *a-e aq apu-Ø*   'his father'
      (b) *apu-Ø ta-e*   „

However, when the modified noun belongs to a small class of kinship terms (and not all kinship terms apparently belong to this class), a third means of realizing possession is possible. This third alternative is to insert the possessor pronoun between the modified noun and its number constituent, and under certain circumstances, to add the morpheme *te*. The following examples, I think, exhaust all the possibilities within this construction, where we take the modified noun to be *apu* 'father', the plural of which may also mean 'ancestors'.

(87) (a) *apu-iŋ-Ø*   'my father'
        N Pn Sg

      (b) *apu-te- e -Ø*   'his father' (cf. (86))
        N te $\begin{bmatrix} Pn \\ Sg \end{bmatrix}$ Sg

      (c) *apu-iŋ -te-ko*   'my ancestors'
        N Pn te Pl

      (d) *apu-te- e -te-ko* 'his ancestors'
        N te $\begin{bmatrix} Pn \\ Sg \end{bmatrix}$ te Pl

      (e) *apu-te- ko -te-ko* 'their ancestors'
        N te $\begin{bmatrix} Pn \\ Pl \end{bmatrix}$ te Pl

In (87), the abbreviation Pn means "pronoun", either first, second or third person. The distribution of the occurrence of *te* can be stated as follows: it occurs only before the constituent No, and then only if that No has non-zero phonological shape. This completes our analysis of the superficial structure of possessive modifiers.

In connection with these modifiers, however, we may also mention a special optional rule which may be applied in case the possessor is a pronoun introduced by *ta*, the modified constituent is itself a a (third person) pronoun,

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and the entire NP is the object of the VP. That rule affixes the *ta* plus pronoun to the subject agreement element, and deletes the head pronoun; the result of applying this rule can be seen in (88):

<div style="margin-left:2em;">
take
</div>

(88)   *a-m idi-ko-ta- n- a- m- ta-ko*   'You are taking those (anim.)
       NP V P1 Te T Pr Pt ta P1   things which belong to them'

Now we are faced with the problem of how to derive the various forms of the possessive modifiers. It seems reasonable to suppose, first of all, that possessives using the postposition *aq* are fundamental, and that the other two constructions are derived by very special transformations from these. Suppose for the moment that there existed in Mundari simple sentences like (89); such sentences do not in fact exist, but let us temporarily ignore that fact.

(89)   **oḍaq ne hoḍo-Ø aq (menaq)-a*   'This man has a house
      NP [NP   P] Cop Pr   (houses)'
         [AdjP]

Now suppose that (89), without the Cop, were embedded as a modifying clause to the N *oḍaq*. Then immediately we would have the structure underlying (83), which we cited as a typical instance of possessive modification, and our problem of deriving such structures would be solved.

Since (89) does not in fact exist, there is no point in pursuing this hypothetical analysis further. However, there do exist in Mundari sentences very much like (89), with meanings identical to those which we had assigned to these hypothetical sentences. The only differences between these real sentences and those of the type (89) are first that the order of the noun phrases is reversed, and second that a morphologically different postposition is used. For example, the following is a well-formed Mundari sentence:

(90)   *ne hoḍo-Ø oḍaq an menaq-i- a*   'This man has a house
      NP   [NP P] Cop Sg Pr   (houses)'
         [AdjP]

When the possessed NP is animate, then its constituent No is deleted before the postposition *an*. For example:

(91)   *ne hoḍo-Ø puraq misi an menaq-i a*   'This man has
      NP   [[Num N] P] Cop Sg Pr   many sisters'
          [[NP]]
          [AdjP   ]

Actually, one could render (91) quite literally as 'This man is many-sistered', in which the -ed suffix functions like the Mundari postopsition *an*. Note that

in the English case, too, the plural morpheme is deleted before -ed, revealing a most curious and quite unexpected correspondence between the two languages!

The reason that we are allowed to give the construction NP P the analysis AdjP (cf. phrase structure Rule 6) is that it behaves like a predicate adjective by optionally replacing the Cop, and that when it does so, the subject agreement element is found not to be attracted. These facts are illustrated by the following examples.

(92)   *ne hoḍo-Ø puraq misi an-a-eq*   'This man has many sisters'
(93)   *ne hoḍo-Ø ka-eq puraq misi an-a*   'This man does not have many sisters'

Constructions involving NP P, however, differ from ordinary adjective phrases in that sentences of the type (93) are allowed to serve as bases for prenominal modification as in (94):

(94)   *ka puraq misi an hoḍo-Ø*   'a man who does not have many sisters'

Leaving aside this lastmost difficulty, we now ask whether sentences such as (90)–(93) can serve as bases underlying possessive constituents of the type exemplified in (83). It turns out that they can, and furthermore, no more descriptive apparatus is required.

Let us state the example (83) again for convenience:

(83)   *ne hoḍo aq oḍaq*   'this man's house(s)'

Suppose we take as the sentence underlying the possessor in (83) one which would independently be realized as (95); in fact a stylistic variant of (90):

(95)   *ne hoḍo-Ø oḍaq an-a-eq*   'This man has a house (houses)'

Suppose we take *aq* and *an* to be morphophonemic variants of the possessive postposition P, where *an* is used with the possessed noun, and *aq* with the possessor noun. To derive the possessive modifier of (83) out of (95), we simply delete the common noun *oḍaq*, the predicator and the subject agreement element. Nothing further is required.

To derive the special kinds of possessive constructions when the possessor is a pronoun we require two additional transformational rules. The formulation of these rules is not a particularly interesting problem; the only real issue seems to be whether or not one should view the morphemes *ta* and *te* to be variants of the postposition P, or as "transformational constants" added by these particular rules.

The expression of possession in Mundari, as we have just seen, does not depend upon the use of a particular verb of possession such as English *have,*

but is done by means of a special adjectival construction together with the copula, in which the possessor is the subject of the copula sentence, and the possessed is embedded within the predicate adjective.

APPENDIX I

Glossary of Mundari Lexical Items and Grammatical Formatives

Nouns.

Animate. *apu* 'father', *babu* 'babu', *hoḍo* 'man', *hon* 'child', *misi* 'sister', *munḍa* 'headman', *uḍiq* 'cow'

Inanimate. *ba* 'flower', *canḍuq* 'moon', *daru* 'tree', *hatu* 'village', *hora* 'path', *loyoŋ* 'field', *oḍaq* 'house', *rimbil* 'sky', *salukid* 'lotus', *sengel* 'fire', *taq* 'place', *uli* 'mango'

Verbs.

Intransitive. *duram* 'sleep', *hijuq* 'come', *bolo* 'enter', *saḍi* 'make noise', *senoq* 'go'

Semitransitive. *kami* 'work', *nir* 'run', *sen* 'walk'

Transitive. *dal* 'beat', *idi* 'take', *nel* 'see'

Indirect Object. *om* 'give'

Quotative. *men* 'say'

Adjectives. *maraŋ* 'tall', *sibil* 'sweet'

Num. *gelea* 'ten', *miad* 'one', *puraq* 'many'

Neg. *ka* 'not'

Te.

Pres. *ta*,

Pa. *ke*,

Perf. *aka*,

Ant. *le*,

Aor. *ja*

Demons. *ne* 'this', *en* 'that', *han* 'yonder'

Loc. *re* 'in', *te* 'to', *ete* 'from'

Pt.

Sg. *iɲ* 'I', *m* 'you'

Du. *laŋ* 'we (incl.)', *liŋ* 'we (excl.)', *ben* 'you two'

Pl. *bu* 'we (incl.)', *le* 'we (excl.)', *pe* 'you all'

APPENDIX II

Order of Application of Transformations Formulated in this Paper

Rules (IV), (VI) and (VII) cannot be assigned an order relative to one another; Rule (VII) moreover is not ordered with respect to (II) and (III).

Rule (II), p. 84. *Copula deletion.*

NP (Neg) Cop Pres T Pr

1   2   3   4 → 1 Ø 3 Ø

Rule (III), p. 86. *Present tense deletion.*

Cop Pres T Pr

1   2   3 → 1 Ø 3

Rule (IV), p. 87. *Optional copula replacement by LocP.*

LocP *menaq*

1   2 → Ø 1

Rule (VI), p. 89. *Optional copula replacement by AdjP.*

AdjP (Neg) *menaq*

1   2   3 → Ø 2 1

This rule apparently applies less generally in embedded sentences. The more restricted form of the rule, p. 95 is:

AdjP *menaq*

1   2 → Ø 1

Rule (VII), p. 91. *Optional senoq replacement.*

LocP (Neg) *senoq*

1   2   3 → Ø 2 1

Rule (I′), p. 91 (a less general form of the rule was given on p. 84 as Rule I). *Subject agreement attraction.*

$\begin{Bmatrix} menaq \\ LocP \end{Bmatrix}$ (Tense) Pr (Part) No

1   2   3 → 1+3 2 Ø

Rule (V), p. 88. *Negative copula fusion.*

Neg *menaq*

1   2 → Ø 1+2