

HIDATSA GRAMMAR

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In addition to classes in regular semesters at Indiana University, I was privileged to attend three Linguistic Institutes, one at Michigan and two at Indiana. At the Michigan Linguistic Program (1951), I first encountered a Siouan language--Usage--in Professor Hans Wolff's class. In the Linguistic Institutes at Indiana, I learned much from contacts with three Algonquian languages (1952), Blackfoot, Arapaho, and Shawnee¹ in the field methods class co-professored by C. F. Voegelin and D. M. Gaita, and two Siouan languages (1953), Hidatsa and Crow.

The Hidatsa informant, Margaret Haven, when not engaged in the field methods classes, was entrusted to me as my informant for beginning work on the present dissertation. She and other Hidatsa informants in North Dakota were extraordinarily patient during long and rather fast-paced informant sessions. (That these sessions were fast-paced for a beginner is due to two facts: (1) that I was given, carte blanche, the extra-

ordinarily voluminous Hidatsa field notes gathered by Voegelin and Harris fifteen years ago and could base my questioning thereon;² (2) that I used one, or frequently two, magnetic tape recorders in all informant sessions³ and, hence, frequently did not slow down to record citation forms, but, rather, encouraged informants to speak at their normal speed and later transcribed such speech from repeated playbacks. The Voegelin and Harris corpora included texts recorded on phonograph discs, and these, too, were made available for playback.)

The American Philosophical Society provided funds to the Linguistic Institutes for bringing informants from the field to Indiana for the Field Methods classes and for such independent research as I pursued; I was sent to North Dakota to seek an informant, with the happy result already noted of bringing back Mrs. Margaret Haven for the summer of 1953.

For the summer of 1954 the Research Committee of Indiana University provided me with generous funds to continue the work already begun in North Dakota; I wish to thank this Committee.

I wish also to thank the faculty and my fellow graduate students in the Ethnolinguistic Seminar for constructive criticisms of interim reports on my Hidatsa work--in particular, Professors Voegelin, Sebeok, Householder, Velten and Whitehall; and Mr. Johnegerlechner

and Mrs. Dorothy Maschube.

I am especially indebted to Professor C. F. Voegelin, who directed the dissertation which follows. His technique of numerically indexing morphemes and morpheme classes and of making distributional statements in the form of formulae using these index numbers, previously usefully employed in describing more clearly patterned languages, such as Algonquian, I have adopted here, finding it particularly useful for a language as amorphous as are Siouan languages.

Footnotes to Acknowledgments

1. During and after this Institute much interest and time were devoted to matters of translation, particularly to the development of Voegelin's technique of 'multiple stage translation'. This technique, discussed in From FL (Shawnee) to TL (English), autobiography of the author, C. F. Voegelin, IJAL 19.1-25 (1953); From FL (Shawnee) to TL (English): Some Differences between Two Versions of the Autobiography, C. F. Voegelin, Florence A. Lovinett, and Nancy F. Hickerson, IJAL 19.108-117 (1953), and Multiple Stage Translation, C. F. Voegelin, IJAL Vol. 20 No. 4 (1954), with slight modifications in the form of presentation, I have applied to a Hidatsa text in Chapter 5.
2. The published Hidatsa material of Voegelin and Harris consists of:

Hidatsa Texts Collected by Robert H. Lowe with Grammatical Notes and Phonograph Transcriptions, Sellig Harris and C. F. Voegelin, Indiana Historical Society, Prehistory Research Series 1.173-239 (1939),

Historical Results of Crow-Hidatsa Comparisons, According to Three Methods, C. F. Voegelin, Proceedings, Indiana Academy of Science 50.39-42 (1940). Although they worked together, there are actually two unpublished

copora--that of Voegelin and that of Harris.

Professor Harris has most generously sent all of his Hiatsa material to Indiana for our use.

3. In tape recording citation form repetition and translation of texts already recorded at normal speech speed, I followed the procedures described in Obtaining a Linguistic Sample, C. F. Voegelin and Florence M. Robinett, IJAL 20.39-100 (1954).

Chapter One

Phonemics

1.1 In 1874 Matthews presented Hidatsa in terms of sounds which we recognize today as allophones.

In general my perception of the phones of Hidatsa agrees with Matthews. However, in some cases he appears to have perceived sounds which are not distinguishable by me. Thus he recorded, and partially described, three varieties of a (which he wrote a 'in father, or in what', a 'u in tun' and ã; in contrast, I am able to recognize only one allophone of /a/). Matthews also distinguished three varieties of h, written as h initially and intervocalically, as apostrophe and as c preconsonantly, and two varieties of š (written as š 'sh in shun' and z 'in azure'), again, I am able to recognize only one of each.

Although Matthews wrote the three allophones of /w/ and the four of /r/ which I also recognize, he found his allophones to occur in positions in which I did not hear them; nevertheless he must be credited for appreciating the essential relationships of the allophones in question, as the following statement attests: 'The letters b, m and w are interchangeable; so also are d, l, n and r'.

Matthews failed to record--either consistently or at all--two phonemic components; namely, vowel length and fortis consonants (or clusters of consonants plus h).

He did note these components at morpheme boundaries, when he wrote double vowels and consonants followed by h. The glottal stop was apparently not heard at all by Matthews; there is nothing in his writing directly and no indirect orthography to imply it--e.g. his double vowels record length, as noted.

1.2 The first presentation of Hidatsa in terms of phonemes was made by Voegelin and Harris² in 1939; my alignment of allophones into phonemes agrees with theirs. However, alternative solutions are possible for certain parts of the phonemic system.

The stops and fricatives of Hidatsa may be phonemicized as two series, lenis and fortis (= aspirated)--this is the Voegelin and Harris solution. Stops and fricatives may, alternatively, be phonemicized as occurring in one series, that termed levis above. The remaining series, which is phonetically long and usually aspirated, may then be treated as constituting phonemic clusters, either of identical consonants (geminate) or of stop or fricative plus /h/.

I follow the analysis of a single series versus phonemic clusters of this series plus /h/. I am here influenced by morphophonemic considerations; with the analysis of two contrasting phonemic series, an additional morphophonemic statement would be necessary to cover the Juxtaposition of stops or fricatives and /h/ at morpheme boundaries.

Voegelin and Harris left open the question of the phonemic status of three-mora vowel length because of its variation with two-mora length. I am inclined to give phonemic status to the three-mora length, on the basis of contrasts appearing between it and two-mora length (as wá:ra winter, wá·ra my arm) in one style of speech; although in another style of speech the contrast does not appear. (For the effect of styles of speech on vowel length, see 2.3.5 and 2.4, below.)

To Voegelin and Harris' phonemic inventory I would add three junctures: /+/ phrase or word internal (phonetically, a brief pause), /ll/ phrase final (phonetically, a brief pause and a slight rise in tone on the preceding one or two syllables), and /#/ utterance final (phonetically, pause and descending tone on the preceding one or two syllables).

1.3 Rather than repeat the allophonic details of Hidatsa already analyzed by my predecessors, I prefer to postpone a detailed phonemicization of Hidatsa until I have the opportunity to study more extensively, from playback and with Sonograph analysis, the forty hours of tape recordings made in the 1953 Linguistic Institute. The following orthography³ will serve for morphemic and morphophonemic analysis.

Consonants

Stops p t c k ?

Fricatives š x h

Liquids w r

Vowels

i u

e o

a

Non-segmental

/˙/ (primary stress), /˙˙/ (two-mora vocalic length),
 /˙˙˙/ (three-mora vocalic length), and the three junctures
 mentioned above: /+/ , /ll/ and /⁴#/.

Footnotes for Chapter 1

1. Washington Matthews, Hidatsa (Minnetaree) English Dictionary, Shea's American Linguistics, Series II, No. 2 (1874).
2. Zellig Harris and C. F. Voegelin, Hidatsa Texts Collected by Robert H. Lowie With Grammatical Notes and Phonograph Transcriptions, Prehistory Research Series of the Indiana Historical Society, 1.173-239 (1939).
3. For the phonetic values of all the symbols except those for the three-mora length and the junctures discussed above see pp. 183-184 of Harris and Voegelin, *op. cit.*

Chapter 2
MORPHOPHONEMICS

2.0 Two types of morphophonemic variation occur in Hidatsa. One shows differences in the number of segmental phonemes in the alternants of particular morphemes; hence, the alternants are of different lengths. In the other type, the alternants are of the same length; differences appear by virtue of substitution of phonemes. Style, position of the morpheme in respect to particular phonemes or in respect to particular morphemes are the variables associated with each of these morphophonemic types.

General rules will be stated for variation which is determined by position in respect to particular adjacent phonemes for most morphemes--for wholly or generally unrestricted sets of morphemes. For variation in restricted sets of morphemes determined by phonemic environment, special symbols will be used. Besides such symbols, numbers are used to index morphemes; some of the index numbers include sub-numbers (i.e. numbers after decimal points) which serve to identify alternants determined by position in respect to particular morphemes rather than by phonemic environment.

2.1.0. The same alphabetic letters serve both for phonemic and for morphophonemic orthography; i.e. in morphophonemic writing, all the symbols used in phonemic

writing are employed with their regular phonemic values. In addition, the symbols given in the following section are employed for variation in restricted sets of morphemes.

2.1.1. Capital Š is used when a given morpheme shows /c/ preceding morpheme initial /h/ but /š/ elsewhere. Thus, we write morphophonemically réŠA- for a stem which appears in phonemic réšac it's nothing and réche·c he used it up.¹ The only other examples in the sample are the stem written morphophonemically iruxíŠI-, which appears in iruxíšic it's soaked and iruxíche·c he soaked it, and the stem written morphophonemically xíŠI-, which appears in xí·šic he's tired and xí·che·c it makes him tired.

2.1.2. Capitals I and A are used for vowels which are phonemically /i/ and /a/ in some environments and absent in others. These morphophonemes occur only as stem final vowels; they are phonemically actualized except when followed by the causative suffix (1021),² the imperative singular suffix (1282), or other stems. The morphophonemes I and A will hereafter be referred to as weak vowels.

Examples are listed here with the morphophonemic shape of the theme³ given first (in brackets), followed by forms showing its two phonemic shapes. The formula for the morphemic composition of each phonemically written form is given in parentheses after it. In all such formulae T stands for theme. A few affixes occur in

most of the examples listed below. They are: prefix or suffix zero or prefix/a-/ or/i-/ third person (43), suffix /-c/ predicative (1271), suffix /-he-/ causative (1021), and suffix zero or /-h/ imperative (1282).

Examples of themes containing I are listed in the following paragraphs.

[cá:kI] which appears in cá:kic he's wailing (43 +T+ 1271) and cá:k wail! (T+1282.).

[áraitI-] which appears in áraitic it's on fire (43 +T+ 1271) and áraithe·c he sets it on fire (43 +T+ 1021 + 43 + 1271).

[kipá·takI-] in kipá·takic it's closed (43 +T+ 1271) and kipá·tak close it (43+T+ 1282).

[tá·rI-] in tá·ric he crosses (43 + 43 +T+ 1271) and tá·t cross! (43 +T+ 1282). (The change of /r/ to /t/ is discussed in 2.2.2.)

[kí·rI-] in kí·ric he looks (43 +43 +T+ 1271) and kí·t look! (43 +T+ 1282).

[kírukI-] in kírukic he packs it (43 + 43 +T+ 1271) and kíruk pack it! (43 +T+ 1282).

[púšI] in púšic it's closed (43 +T+ 1271) and púš close it! (43 +T+ 1282).

[kúxtI-] in kúxtic he helps him (43 + 43 +T+ 1271) and kúxt help him (43 +T+ 1282).

[á·xuwI-] in rá·ruwic he's still going along (43 +T+ T+ 1271) and [rá·ruph] go along!(T+T+ 1282). The change of

/w/ to /p/ is discussed in 2.2.2.

[kú·cI-] in kú·cic he takes it (43 + 43 +T+ 1271)
and kú·c take it! (43 +T+ 1282).

[kíruwI-] in kíruwic he counts it (43 + 43+T+ 1271)
and kíruph count it! (43 +T+ 1282).

[kiká·kI-] in wa·kiká·kic she sews something
(11 + 43 +T+ 1271) and wa·kiká·kh sew something!
(11 +T+ 1282).

[kíwiriki·rI-] in kíwiriki·ric he comes in (43 +
T+ 1271) and kíwiriki·the·c he let him come in (43 +
T+ 1021 + 43 + 1271).

[ká·rI-] in ká·ric he asks him (43 + 43 +T+ 1271)
and ká·t ask him! (43 +T+ 1282).

[cícI-] in cícic he jumps (43 +T+ 1271) and cíc
jump! (T + 1282).

[cá:kI-] in cá:kic he wails, mourns (43 +T+ 1271)
and cá:khe·c he makes him wail (43 +T+ 1021 + 43 + 1271).

[há·cI-] in há·cic it drops off (43+T+ 1271) and
há·chiwa·c I drop them off (43 +T+ 1021 + 41 + 1271).

[kátI-] in kátic it's true, he's sure (43 +T+ 1271) and
and aré·kathe·c it's too hot, it made itself very hot
(43 +T+T+ 1021 + 43 + 1271).

[xápI-] in xápíc he lies down (43 +T+ 1271) and
xáp lie down! (T + 1282).

[awaxá·tI-] in awaxá·tic it's lit, it's light

(43 +T+ 1271) and awaxá·the·c he lights it, he makes it light (43 +T+ 1021 + 43 + 1271).

[xá·pI-] in xá·pic he's thin (43 +T+ 1271) and xá·phe·c he makes it thin (43 +T+ 1021 + 43 + 1271).

[a...wá·kI-] in awá·kic he sits down (43 +T+ 1271) and awá·k sit down! (T+ 1282).

[ákI-] in ákic he joined (43 +T+ 1271) and riyak join! (42 +T+ 1282).

[ríkI-] in ríkič he hits it (43 + 43 +T+ 1271) and rík hit it! (43 +T+ 1282).

[íruxišI-] in íruxišic it's soaked (43 +T+ 1271) and íruxičhe·c he soaked it (43 +T+ 1021 + 43 + 1271).

[híši-] in híšic it's red (43 +T+ 1271) and (43 +T+ 1271) and híšhe·c he reddens it (43 +T+ 1021 + 43 + 1271).

[í·thipI-] in í·thipic he is under (43+T+ 1271) and í·thiphe·c he puts it under (43 +T+ 1021 + 43 + 1271).

[š:tI-] in ó: tic it's ripe, it's cooked (43 +T+ 1271) and ó:the·c she cooked it (43 +T+ 1021 + 43 + 1271).

[hiráwI-, há·wI-] in hiráwic he sleeps (43 +T+ 1271), and hiráphe·c he made him sleep (43 +T+ 1021 + 43 + 1271), and rihá·wic you sleep (42 +T+ 1271) and rihá·p sleep! (42 +T+ 1282).

[atÍ-] in ati house(T) and athé·rahta between the houses, in the village (T+T+ 1011).

[karáwI-] in karáwic he remembers (43 + T + 1271)
and karáp remember (T + 1282).

Forms containing A are listed in the following paragraphs.

[í·thipA] in í·thipac it's covered (43 + T + 1271)
and í·thiphe·c he covered it (43 + T * 1021 + 43 + 1271).

[cúhkA-] in cúhkac it's flat (43 + T + 1271) and
cúkhe·c he flattens it (43 + T + 1021 + 43 + 1271).
(The change of /hk/ to /k/ is discussed in 2.2.1.)

[ruwácA-] in ruwáca one (T) and ruwáche·c he made
it one (43 + T + 1021 + 43 + 1271).

[hí·tA-] in hí·tac he's fast (43 + T + 1271) and
hí·the·c he makes it fast (43 + T + 1021 + 43 + 1271).

[xátatakA-] in xátatakac he's quick (43 + T + 1271)
and xátatakhe·c he makes it quick (43 + T + 1021 + 43 +
1271).

[-pÁ-] in apá his nose (43 + T) and apí·rihu·c he
has a nosebleed (43 + T + T + T + 1271).

[-á·pa-] in á:pa his neck (43 + T) and á:phiru
his neck, his neckbone (43 + T + T).

[-íta-] in í·ta his face (43 + T) and i·tíš·i
halter (43 + T + T).

The /a/ of stem final clusters ua or ia is morphophonemically A. Thus, [išíA-] in isíac it's
bad (43 + T + 1271) and in išíhe·c he makes it bad

(43 + T + 1021 + 43 + 1271); and [cikúA-] in cikúac it's sweet (43 + T + 1271) and in cikúhe·c he sweetens it (43 + T + 1021 + 43 + 1271).

2.1.3. Capital E· has the underlying phonemic shape /ia/ when it precedes morpheme initial /a/; elsewhere it is /e·/. Thus, the stem written morphophonemically as šÉ·- appears as /šé·-/ in šé·c he says and as underlying /šia-/ in ší·?ac they say; the stem phE·- appears as /phe·-/ in phe·c he ate it up and as underlying /phia-/ in phi·?ac they ate it up. The change of /ia/ to /i/ before morpheme initial a is discussed in 2.2.3.

2.1.4. Italic capital -IA is set up for those morphemes which show final phonemic /ia/ in all environments. Only one morpheme in the sample contains this morphophoneme, the suffix -rIA reflexive (1061); all other morphemes with final phonemic /ia/ show variation when followed by morpheme initial /a/. Examples of -rIA are kí?iriac he rides horseback (43 + T + -rIA- + 1271) and kí?iria?a?ac they ride horseback (43 + T + -rIA- + 1201 + 1271). Examples of variation in other morphemes with final /ia/ are given in 2.1.2. and 2.2.3.

2.1.5. Parentheses are also used as morphophonemic symbols; they are placed around first vowels in stems of the type CVCV or CVCVV⁴ which are absent when the stem occurs with a phonemically constituted prefix--i.e. any prefix other than zero -- and are phonemically actualized

when the stem occurs without a prefix or with a zero prefix. Thus the stem which appears in hu·pá shoe (stem with no prefix) and ma·hpá my shoe (prefix 41 + prefix 51 + stem) is written morphophonemically h(u·)pá. The stem which appears in ka·hé·c he gives it away (43 as zero + 43 + as zero + stem + 1271) and wa·khé·c I give it away (43 as zero + 41 + stem + 1271) is written morphophonemically k(a)hé·-. The stem written morphophonemically š(i)kíA- appears with a zero prefix in šikíac it's curly (43 + stem + 1271) and with the prefix pa- (134) in paškíac it's kinky (43 + 134 + stem + 1271). The stem with morphophonemic shape x(a) té·- appears with a zero prefix in xaté·c he wins, beats (43 + stem + 1271) and with the prefix wa- (41) in wa·xaté·c I win, beat (41 + stem + 1271).

2.2.0. The variations treated above are explicated with symbols including capitals and parentheses. Other variations are now given in terms of general rules. The morpheme variations immediately following are dependant upon phonemic environment; they occur in all morphemes except those written with special morphophonemic symbols. Each set of examples below is preceded by a formula; the symbols used in these formulas are those used in phonemic writing plus V for vowel and WV for weak vowel, defined in 2.1.2.

2.2.1. [(hk, hc) + h>kh, ch]: clusters of /hk/ or /hc/ are replaced by the stop member of the cluster when

followed by morpheme initial /h/. Morphophonemic šáhkI- appears before /-c/ (1271) in šáhkic it's open and before /-he·c/ (1021 + 43 + 1271) in šákhe·c he opened it. Morphophonemic cawúhcI- appears before /-c/ (1271) in cawúhcic it's straight and before /-he·c/ (1021 + 43 + 1271) in cawúche·c he straightened it.

2.2.2. [wV>p;rV>t]: /w/ and /r/ followed by weak vowels (I and A) in the environments in which the vowels are absent (see 2.1.2.) are replaced, respectively, by /p/ and /t/. Thus, morphophonemic [karáwI-] appears before /-c/ (1271) as karáwic he remembers and before the zero alternant of the imperative singular (1282) as karáp remember! Morphophonemic [tá·rI-] appears before /-c/ in tá·ric he crosses and before zero in tá·t cross!

2.2.3. [V + a>a; V· + a>a· ; V₁V₂ + a>V₁·; V₁? V₁ + a>a?a]: before morpheme initial /a/ all final vowels except /u/ and /ú/ are assimilated to /a/ and vowels immediately preceding final vowels (i.e. the first members of clusters of non-identical vowels) are lengthened. Identical vowels separated by glottal stop both become /a/. The morpheme initial /a/ is then absent. In the examples given below forms without suffixes beginning in /a/ are listed in the column on the left; to these are added the suffix -a?a- plural (1201) in the column on the right.

cáckic <u>he's noisy</u>	[V + a>a]:	cácka?ac <u>they're noisy</u>
í·xpa <u>his wing</u>	+ -a?a->	í·xpa?a <u>his wings, their wings</u>

kárechec he believeskárecha[?]ac they believere[?]ec he talksra[?]a[?]ac they talk

[V· + a > a·]:

+ -a[?]a- >hopí·c it's a holehopá·[?]ac they're holesaraxáwa·c I set it on firearaxáwa·[?]ac we set it on firešákhe·c he opened itšákha[?]ac they opened it[V₁V₂ + a > V₁·]:tiríac he runstirí·[?]ac they runwúa fish + -a[?]a- >wú·aš fish (plural, named)

2.2.4. [V- + -V > V[?]V]: a glottal stop appears between morpheme final vowels and morpheme initial vowels. Thus, the sequence of prefix 21, wa·-, plus prefix 11, i·-, plus the stem í·he is phonemically wa·[?]i·[?]í·he paint. An overriding rule for fast speech is given below in 2.3.3.

2.3.0. Speed of speech has an effect analogous to phonemic environment in the five variations listed below (2.3.1.-5). Each set of examples is preceded by a descriptive formula.

2.3.1. [-V· ~ -V]: morpheme final long vowels when followed by juncture become short vowels in fast speech; but in slow speech these long vowels vary freely with short vowels. Thus, whether fast or slow speech, hopí· ends in a long vowel before a consonant: hopí·c it's a hole; but hopí hole (fast speech), and hopí· ~ hopí hole (slow speech).

2.3.2. [VrV ~ V[?]V]: intervocalic /r/ may be replaced

by glottal stop in fast speech. Thus, wíripuxhi beer in slow speech, and wíripuxhi ~ wí'ipuxhi beer in fast speech.

2.3.3. [V'V ~ V·]: intervocalic glottal stop may be absent in fast speech. Thus, wíripuxhi ~ wí'ipuxhi ~ wí·puxhi beer in fast speech and only the first of these forms occurs in slow speech.

2.3.4. [V₁rV₂r ~ V₃·r]: where /r/ appears in slow speech between non-identical vowels followed by /r/ , fast speech shows a long vowel of a quality different than either of the non-identical pair. Only one sequence of this kind appears in our sample, namely, /ary/ in slow speech, which appears in fast speech as /o:/ : arurá·c (slow), o·rá·c (fast) you'll drink.

2.3.5. [V ~ V· ; V· ~ V:]: in very slow speech, which may also be called 'mother language'⁵ a mora of length may be added to any non-final vowel (i.e. short vowels may be long, long vowels may be overlong). Thus, withé cow in fast or slow speech, but wi·thé cow in very slow speech; and awá·thi river in fast or slow speech but awá:thi river in very slow speech.

2.4. One phonemic length in Hidatsa is restricted to very few morphemes in all styles of speech except that of very slow speech; this is the three mora length. All morphemes showing this in fast or slow speech appear in two alternants, one with three mora vowel (marked by colon,:), the other with two mora vowel (marked by

raised dot, ·). The variation between these alternants is free; the alternant with two mora vowel is more frequent when the syllable in which it occurs is followed by a short vowel in checked position. All themes in our sample in which this variation occurs are listed below.

wá:ra ~ wá·ra winter
 é:ca ~ é·ca all
 á:ši ~ á·ši horn
 á:pa ~ á·pa his neck
 cá:ki- ~ cá·ki- mourn
 nó:kte ~ nó·kte corpse
 icú:wuška ~ i·cú·wuška horse
 cú:wa ~ cú·wa seed
 ó:kci ~ ó·kci night
 cú:ta ~ cú·ta half
 ó:ti- ~ ó·ti ripe, cooked
 í:thipi- ~ í·thipi fall and cover
 ú:waca ~ ú·waca money
 cá:- ~ cá· dull (in color)

2.5. Morpheme alternants of affixes are discussed in 3.; those alternants of themes whose occurrence is associated with particular affixes are discussed here. (See 4. for the definition of themes.)

Two main types of theme variations occur--a two-alternant type and a three-alternant type. Each of these main types

appears in sub-types depending upon associations with particular affixes.

Sub~types of the two-alternant type are now listed together with examples for each sub-type. ⁶

Sub-type I. Here, a particular alternant appears when preceded by either prefixe 41 or 42 marking first or second person actor; another alternant appears in all other environments.

146.1 rakhí·ti-, 146.2-khí·ti- be in (rakhí·tic he's in, wa·khí·tic I'm in).

155.1 ka·rÍ-, 155.2-ká·- ask for (ka·ric he asks for it, wa·ká·c I ask for it).

218.1 kí'í-, 218.2-kí- pack (kí'ic he packs it, wa·kíc I pack it).

194.1 he·-, 194.2-a- say (hé·c he says, wá·c I say).

304.1 hiráwI-, 304.2-háwI- sleep (hiráwic he sleeps, wiháwic I sleep).

285.1 híri-, 285.2 -he·- make, do (híric he makes it, wahé·c I make it).

322.1 atá·ri-, 322.2 a...tará·ri- come out (atá·ric he comes out, awatará·ric I come out). (The significance of the three dots in the second alternant is discussed in 4. .)

411.1 opxíá-, 411.2 a...opxíá- stuff hole (opxíac he stuffs a hole, awopxíac I stuff a hole).

400.1 ó·pahti-, 400.2 a...ó·pahti- cork (ó·pahtic he

corks it, awó·pahtic I cork it).

388.1 išké·-, 388.2 a...šké·- think, worry (išké·c he worries, awašké·c I worry).

391.1 ihkíriki-, 391.2 a...hkíriki- throw (ihkíriki·c he throws it, awahkíriki·c I throw it).

392.1 i·kúhpa·-, 392.2 a...kúhpa·- hate (i·kúhpa·c he hates him, awa·kúhpa·c I hate him).

394.1 ihpúa-, 394.2 a...hpúa- throw (ihpúac he throws it, awahpúac I throw it).

395.1 okháta·-, 395.2 a...okháta·- dress (okháta·c he dresses, awokháta·c I dress).

398.1 ošé·-, 398.2 a...ošě·- put in (ošé·c he put it in, awošé·c I put it in).

399.1 ó·cahti-, 399.2 a...ó·cahti- bury (ó·cahtic he buried it, awó·cahtic I buried it).

410.1 úa-, 410.2 a...úa- make a fire (úac he makes a fire, awúac I make a fire).

174.1 kacá·-, 174.2 -kcá·- blow at (kacá·c he blows at him, wakcá·c I blow at him). Unlike 'parenthetic' vowels (2.1.5.) the first vowel of alternant .1 is not absent when kacá·- is preceded by goal prefixes, as wi·kacá·c he blows at me.

In sub-type II, a particular alternant appears only when preceded by prefix 41 marking first person actor; another alternant appears in other environments. The only example of this sub-type in our sample is: 113.1 rú·ti-, 113.2 -ú·ti- eat (rú·tic he eats, rarú·tic you

eat, wú·tic I eat).

In sub-type III, a particular alternant appears only when preceded by prefix 42--second person actor; another alternant appears in other environments. The single example of this sub-type in our sample is: 137.1 khú-, 137.2 rakhú- come back (khúc he comes back, wa·khúc I come back, rarakhúc you come back).

In sub-type IV, a particular alternant appears not only when preceded by prefix 41, first person actor, but also in all other sequences except those including prefix 42, second person actor, or prefix 43, third person actor, plus suffix 1201.1, plural. Conversely, the other alternant appears when preceded by prefix 42, second person actor, or followed by suffix 1201.1, plural, when not preceded by prefix 41, first person actor.

204.1 kí·-, 204.2 rakí·- be home, be back (wakí·c I'm back, kí·c he's back, rarakí·c you're back, raká·?ac they're back).

292.1 hú- , 292.2 rahu- come (húc he comes, wa·húc I come, rarahúc you come, rahúa?ac they come).

In sub-type V, a particular alternant appears preceding suffix 1201.1 marking plural; another alternant occurs in other environments. One example of this sub-type appears in our sample: 71.1 rahkú- , 71.2 -hkhú- go along, still (wa·rahkúc I'm going along, wahkhúa?ac we're going along).

Sub-type VI. Here the variation between the alter-

nants is free. Only one example of this sub-type appears in our sample: 100. karáwi-~ karáwI- (karáwihe·c ~ karáphe·c he makes him remember).

Next, sub-types of the three--alternant type are listed, together with examples of each sub-type.

In sub-type I, a particular alternant appears before suffix 1201.1--plural, in sequences which do not include prefixes 41 or 42; another alternant appears after prefixes 41 or 42 marking first or second person actor in sequences which include suffix 1201.1; still another alternant occurs in all other environments.

111.1 áruwI-, 111.2 underlying raríá- 111.3 underlying -ríá- be still along (áruwic he's still along, wá·ruwic I'm still along, rarí·?ac they're still along, warí·?ac we're still along).

In sub-type II, a particular alternant appears after prefix 41 or 42, first or second person actor; another alternant appears before suffix 1201.1 when not preceded by prefixes 41 and 42; still another alternant occurs in all other environments.

102.1 hí·- , 102.2 -á- , 102.3 under-lying híá- drink (hí·c he drinks, wá·c I drink, wá·?ac we drink, hí·?ac they drink).

In sub-type III, a particular alternant appears after prefix 41 or 42 marking first or second person actor; another alternant occurs in all other environments; still another alternant varies freely with the second in

sequences which include the causative suffix 1021.

442.1 té·- , 442.2 -tí- , 442.3 ta- die (té·c he dies,
watic I die, té·he·c ~ táhe·c he kills him).

In sub-type IV, a particular alternant appears after prefix 43 plus prefix 43 marking third person goal and third person actor; another alternant appears after prefix 41 marking first person goal when followed by suffix 1282 marking imperative singular; still another alternant occurs in all other environments.

79.1 kú- , 79.2 -úk, 79.3 kú?u- give (wakúc I give him,
wikúc he gives me, múk give me! ku?uc he gives him).

In sub-type V, a particular alternant appears in sequences which do not include suffix 1201.1, plural; another alternant appears in sequences which include prefix 41, first person actor, and suffix 1201.1; still another alternant occurs in all other environments.

27.1ré·- , 27.2 -há- , 27.3 rahá- go (ré·c he goes,
wa·ré·c I go, wa·há?ac we go, rahá?ac they go, rarahá?ac
you (plural) go).

FOOTNOTES

1. Exemplification in this chapter is based on a sample of about 800 inflected themes originally transcribed on slips by Voegelin and Harris in 1938 and recorded on tape by me in 1953, together with supplementary elicited forms. All the examples for each morpho-phonemic change obtained from this sample are cited, except where such changes are stated in terms of rules.
2. Numbers given in parentheses after affixes are the index numbers assigned to them in 3.1.
3. The distinction between stems and themes is discussed in 4.1.
4. C = consonant, V = vowel in this and other formulas given in this chapter.
5. C. F. Voegelin and Florence M. Robinett, 'Mother Language' in *Hidatsa*, IJAL 20.65-70 (1954).
6. Both for examples of the two-alternant type and for examples of the three alternant type, below, the non-first or non-second person form or the singular form is given first (i.e. as alternant .1), since the privileges of occurrence of such forms are greater. Word examples are given in parentheses after each theme example. An index number will be assigned to each theme as it is listed in the dictionary; for purposes of reference,

the numbers here assigned as index numbers are those assigned in the sample on the basis of their relative order on the tape.

Chapter 3

AFFIXES

3.0 Numbers are here assigned to affixes as an index for the morphemes in question and also as an indicator of their positions. The affixes are here listed by decade classes, such that the members of each class occur in the same position in respect to other classes of morphemes. The affixes within a decade class are mutually exclusive. In any sequence, affixes occur in the numerical order of their decade class. (Prefixes of Class 10 precede those of Class 20, which precede those of Class 30, and so on.) Since many of the classes of Hidatsa affixes--many of which contain only one member--may occur either before or after certain other classes or themselves, it was necessary to assign more than one decade number to some of the classes. Thus, prefix i.- instrumentive, which may precede prefixes of all other classes and may follow prefixes of only four classes, was assigned to decade Class 10-60. Members of Class 10-60 precede or follow members of Class 20-70 and Class 30-80, and members of Class 20-70 precede or follow members of Class 10-60 and Class 30-80, and so on. For convenience, in reference only the first positional number of multiple decade numbers is given in the numbers of specific affixes, as 11 for prefix i.- above, rather than 11-51. Thus

in listing the morphemes in *i·té·he* weapon, we write:
11 + stem die + 1021.

Decade numbers below 1000 are assigned to classes of prefixes, those above 1000 to classes of suffixes.

3.1 The decade classes of affixes are:

10-60.

11. *i·-* instrumentive

20-70.

21. *wa·-* indefinite (subject, object, possessor)

30-80.

31. *aru-* ~ or *u-* future, agentive, sphere of, place where

32. *aku-* agentive

40-90-110-1030-1110-1180

41. *wi-*(.1,.8), *wih-*(.1), *wi·-*(.2), *wa-*(.3,.4,.5,.6), *wah-*(.6), *w-*(.7), *-wa·*(.9), *-wi*(.10) first person

42. *ri-*(.1,.3,.4,.8), *rih-*(.2), *ri·-*(.2), *ra-*(.5,.6), *rah-*(.6), *r-*(.7), *-ra·*(.9), *-ri*(.10) second person

43. *i-*(.1,.3), *ih-*(.1), *a-*(.5), *zero-* (.2,.4,.6,.7,.8), *-zero*(.9,.10) third person

50.

51. *ta-*(.1), *t-*(.2) alienable

100-120.

101. *ki-* *suus*, become

130.

131. *k-* completive

140.

141. *ru-* by hand

142. *ra-* by teeth

143. ara- (.1) , -ʔa- (.2) by foot
144. pa- by force, with stick
145. ha- with knife
146. ka- with hammer, fist
- 1000-1210.
1001. -hta along, toward, in the position of
- 1010-1120
1011. -a·cI (.1) -racI (.2) approximative
1012. -ra. approximative
- 1020.
1021. -he· (.1), -hi (.2), -zero (.3) causative,
use for / as
- 1040.
1041. -kša iterative
- 1050.
1051. -wi quantitative
- 1060.
1061. -rIA reflexive
- 1070-1130.
1071. -ʔi· durative, iterative
1072. -ahi momentaneous
- 1090-1150
1091. -tha negative
- 1100.
1101. -hke· (.1), -hki (.2) causative, diminutive,
imitative
- 1170.
1171. -ha in reference to time, place.
- 1190.
1191. -hi (.1), -zero (.2) future, probability,

1200.

1201. -aʔa (.1), -ru (.2) plural

1202. -apa plural (group)

1220.

1221. -he that one here

1222. -ri objectifier, demonstrative

1223. -ka that one

1230.

1231. -kua (.1), -hkua (.2) in, into, that one

1232. -kuhaʔ (.1), -hkuhaʔ (.2) from

1240.

1241. -ši in reference to time

1250.

1251. -ru inclusive (time or place), if

1252. -toʔ indefinite, or

1253. -šta habitual agent

1260.

1261. -ware. quotative

1270-1280.

1271. -c predicative, utterance final

1272. -š substantive, named

1273. -wa as, when, at

1274. -šha concessive

1275. -še distributive

1276. -hiri because

1277. -rahe reportative

1278. -ak (.1), -k (.2) predicative, non-utterance
final
1279. -ʔ repeat-final-mora interrogative
1281. -ara imperative plural
1282. -zero ~ -h ~ -ka(.1) -a ~ -ah ~ aka(.2)
imperative singular
1283. -ški emphatic

3.2 We now discuss affix sequences by decade classes.

Prefix Class 10-60

Prefix 11, i·- instrumentive, occurs word initially or after prefixes of Classes 20-70, 30-80, 40-90-110 and 50. Sequences in which prefix 11 occur are of the following types. (The examples follow our usual style-- see Chapter 2-- of a Hióatsa form, followed by an English equivalent, followed by a morphemic formula in parentheses. Only the first number of multiple decade numbers is used here, as 40 rather than 40-90-110-1030-1110-1180 in the second formula.)

11 + S + 1021: i·pakíši towel (11 + S), i·té·he weapon (11 + S + 1021).

11 + 21 + 40 ± 140 + S + suffixes: i·?ũ?á·k he climbed by means of (it) (11 + 43 + S + 1278),

i·wa·?i·káhe·thac by it he blinds him (11 + 21 + 43 + S + 1021 + 43 + 1091 + 1271),

i·wa·paxúxhic he broke it (something) off (11 + 21 + 43 + 144 + S + 1271),

i·rahcíc he bit it off (11 + 43 + 142 + S + 1271).

+ (40 + 50) + 21 + 11 ± 131 + S:

wa·?i·?í·he paint (21 + 11 + S),

watawa·?i·?í·he my paint (41 + 51 + 21 + 11 + S),

wa·?i·kí·ka window (21 + 11 + 131 + S),

ilawa·?i·kí·ka his window (43 + 51 + 21 + 11 + 131 + S).

21 ± 31 + 11 + 40 ≠ S:

wa·i·ré what he's going for (21 + 11 + 43 + S),

wa·?oru?i·wi napá·ci what I'd be glad about (21 + 31 + 11 + 41 + S).

Prefix Class 20-70

11 + 40 + 101 + S + 1101 + 40 + other suffixes:

i·wikicé·šahke·c I'm greedy (= turned into a wolf with it) (11 + 41 + 101 + S + 1101 + 43.S + 1271)

iwikixá·pihke·thac I'm not getting thin (11 + 41 + 101 + S + 1101 + 43.9 + 1091 + 1271).

Prefix 21, wa·- indefinite occurs word initially or after prefixes of Classes 10-60, 30-60, 40-90-110, and 50. Sequences in which prefix 21 occurs are of the following types.

± (40 + 50) + 21 ± 30 + S ± 1101:

wa·?apá·ri weed (21 + S),

watawa·?apá·ri my weed (41 + 51 + 21 + S)

wa·?aru hí·ši something red (21 + 31 + S),

wata?wa·?arupóhoruwi my bullet (41 + 51 + 21 + 31 + S),

wa·?akupóhoruwinke apple (21 + 32 + S + 1101),

itawa·?akupóhoruwinke his apple (43 + 51 + 21 + 32 + S + 1101).

± (40 + 50) + 21 + 11 ± 131 + S: for examples see prefix 11 above.

21 + 31 + 21 + S: wa·?oru?wa·pá·hi the singing (21 + 31 + 21 + S).

32 ± (40 + 50) + 21 + S ± 1021:

akuwa·ʔáši hunter (32 + 21 + S),

akuwa·kírikihe blacksmith (32 + 21 + S + 1021),

akuitawa·ʔéʔe owner (32 + 43 + 51 + 21 + S).

21 ± 31 ± 11 + 40 + S:

wa·ʔaruwahé what I'm doing (21 + 31 + 41 + S),

for other examples see prefix 11 above.

± 11 + 21 + 40 ± 140 + S + suffixes:

wapé·hic he sings (21 + 43 + S + 1271),

wa·paxpíc he bumped it (21 + 43 + 144 + S + 1271),

for other examples see prefix 11, above.

((40 + 21) ~ (21 + 40)) + 40 + S + suffixes:

ri·wa·wahkiwáhkiwáxhuc (21 + 42 + 41 + S + 1271) I ask you something.

40 + 21 + 31 + 101 + S + 1021 + other suffixes:

wiʔwa·ʔarukiréche·racic she ignored me (41 + 21 + 31 + 101 + S + 1021 + 43 + 1051 + 1271).

31 + 21 + 40 + S + suffixes:

aruwa·wahé·c I'll work (31 + 21 + 41 + S + 1271).

40 + 32 + 21 + S + suffixes:

riʔakuwa·hiric you're a worker (42 + 32 + 21 + S + 1271).

Prefix Class 30-80

Prefixes of Class 30-80 (31. aru- ~ oru- future, agentive and 32. aku- agentive) occur word initially or after prefixes of Classes 20-70, 40-90-110 and 50.

The variation between the two allomorphs of prefix 31 (aru-, oru-) is free.

Sequences in which prefix 31 occurs are of the following types.

\pm (40 \pm 50) \pm 21 + 31 + S \pm suffixes:

aru[?]ácha the near one (31 + S),

aruháckihta lengthwise (31 + S + 1011),

wi[?]aruráxpi my skin (41 + 31 + S),

wi[?]aru[?]áta[?]a my sores (41 + 31 + S + 1201),

its[?]aruwía his wife (43 + 51 + 31 + S),

for additional examples see prefix 21, above.

31 + 40 + 50 + S:

aru[?]itawa·píša his greatgrandchild (31 + 41 + 51 + S).

31 \pm (40 or 21) + 40 \pm 140 + S + suffixes:

aruwi[?]ákiš where I joined (31 + 41 + S + 1272),

aruwa·rí[?]ic I'll shoot it (31 + 43 + 41 + S + 1271),

aruruxúxhic he'll break it (31 + 43 + 43 + 141 + S + 1271),

for additional examples see prefix 21, above.

+ 40 \pm 21 + 31 \pm 101 + S + 1021 + other suffixes:

arukó·wihetha[?]ac they will never stop (43 + 31 + S + 1021 + 1091 + 1201 + 1271),

for additional examples see prefix 21, above.

21 + 31 ± 11 + 40 + S and 21 + 31 + 21 + S. For examples of these two formulas see prefix 21, above.

Prefix 32, aku- agentive, occurs in sequences of the following types.

32 + S ± suffixes:

akušípi a thick place, thicket (32 + S),

akuʔó·thithaʔaš the ones that are not ripe (32 + S + 1091 + 1201 + 1272).

± (40 + 50) + 32 + 40 + S:

akuʔiréʔe interpreter, (32 + 43 + S)

itaʔakuʔiréʔe his interpreter (43 + 51 + 32 + 43 + S).

± (40 + 50) + 21 + 32 + S + 1101; 32 ± (40 + 50) + 21 + S ± 1021; and 40 + 32 + 21 + S + suffixes. For examples of these three formulas see prefix 21, above.

Class 40-90-110-1030-1110-1180

The prefix allomorphs of the members of Class 40-90-110-1030-1110-1180 (41 wi- (.1, .8), wi·- (.2), wa- (.3, .4, .5, .6), wah- (.6), w- (.7) first person; 42 ri- (.1, .3, .4, .6), ri·- (.2), ra- (.5, .6), rah- (.6), r- (.7) second person; 43 i- (.1, .3), a- (.5), zero - (.2, .4, .6, .7, .8) third person) occur word initially or preceded by prefixes of Classes 10-60, 20-70, 30-80, and 100-120.

The suffix allomorphs (41 -wa· (.9), -wi (.10) first person; 42 -ra· (.9), -ri (.10) second person; 43 - zero (.9, .10)

third person) occur word medially; alternants point 9 occur immediately preceded by suffix 1021 or 1101 and followed by another suffix or suffixes; alternants point 10 occur immediately followed by suffix 1091 and preceded by a stem or a suffix other than 1021 or 1101.

The distribution of particular allomorphs is determined by the morphemic composition of the sequence in which they occur--specifically, by the theme in the sequence or by the occurrence of prefix 51 or suffixes 1021, 1101, or 1191 in the sequence.

The allomorphs are numbered on the basis of their mutual membership in sets which occur in particular sequences. For their alignment into sets and paradigms and the specific decade positions of each paradigm see 3.3.

The variation between the two point six allomorphs of 41 and 42 and the two point one allomorphs of 41, 42 and 43 is phonemically determined; the alternants ending in /h/ (wah-, rah- (.6); wih-, rih-, ih- (.1)) occur before /k/ when n t followed by /h/, the alternants ending in vowels (wa-, ra- (.6); wi-, ri-, i- (.1)) occur elsewhere.

Sequences in which Class 40-90-110-1030-1110-1180 occurs are of the following types.

± other prefixes + 40 ± 50 ± other prefixes ± 111 + s
± suffixes:

wi?í my mouth (41.1 + S),

wi?íc it's my mouth (41.1 + S + 1271),

wata?áwa my land (41.3 + 51 + S),

wata?áwa?a our land (41.3 + 51 + S + 1201),

ritawa·?i·kí·ka your window (42.3 + 51 + 21 + 11 + 131 + S),

for other examples of sequences including prefixes 11, 21, 31 and 32 see the examples listed under each of these above.

+ other prefixes + 40 + 21 + 40 + other prefixes
except 51 + 140 + S + suffixes:

wí·rac I yawn (41.1 + S + 1271),

wa?axúac I hide it (43.2 + 41.5 + S + 1271),

kikhíc he drank up his own (43.6 + 101 + 131 + S + 1271),

kiruškíware·c he pulled out his own they say (43.6 + 101 + 141 + S + 1201 + 1271),

wa?ašú·kic I wiped it with my feet (43.2 + 41.5 + 143 + S + 1271),

for examples of sequences which include prefixes 11, 21, 31 and 32 see the examples listed under each of these above.

+ 31 + 11 + (40 + 21) or (21 + 40) or 101 + other
prefixes except 51 + 140 + S 1011 (1021 + 40 + other suffixes
+ (1101 + 40)) or (1101 + 40) + other suffixes:

cákhe·c he made him mourn (43.2 + S + 1021 + 43.9 + 1271),

arucákhe·c he will make him mourn (31 + 43.2 + S + 1021 + 43.9 + 1271),

kiré·che·c he uses up his own (101 + S + 1021 + 43.9 + 1271),

arukiré·che·c he will use up his own (31 + 101 + S + 1021 + 43.9 + 1271),

icítihtawa·c I followed him (43.2 + S + 1011 + 1021 + 41.9 + 1271),

paxúxhihe·c he made him break it off (43.2 + 144 + S + 1021 + 43.9 + 1271),

wi·kárawihe·racic he makes me remember a little bit (41.2 + S + 1021 + 43.9 + 1051 + 1271),

kárawihe·racihke·c he makes him remember it a little (43.2 + S + 1021 + 43.9 + 1051 + 1101 + 43.9 + 1271),

i·wikixá·pihke·c I'm getting thin (11 + 41.8 + 101 + S + 1101 + 43.9 + 1271),

for examples of sequences which include prefixes 11, 21 and 32 see the examples listed under each of these above.

± (40 ± 21) or (21 ± 40) or 101 ± other prefixes except 51 + S ± (1021 + 40) ± other suffixes ± (1101 + 40) + (40 + 1191) + other suffixes:

cixíhíc he'll jump (S + 43.10 + 1191 + 1271),

axúawíc I'll hide it (43.2 + S + 41.10 + 1191 + 1271)

kiré·chiwa·wic I'll use up my own (101 + S + 1021 + 41.9 + 41.10 + 1191 + 1271),

cixíhikiwa·wiha?ac we'll make him jump (43.2 + S + 1101 + 41.9 + 41.10 + 1191 + 1201 + 1271),

wa·hírihíc he'll work (21 + S + 43.10 + 1191 + 1271)

kárawihe·racihke·hic he'll make him remember it a little (43.2 + S + 1021 + 43.9 + 1051 + 1101 + 43.9 + 43.10 + 1191 + 1271).

40 + 40 + 50 + S + 1021 + 40 + other suffixes:
ri·watacákhiwa·c I like you (42.2 + 41.3 + 51 + S + 1021 + 41.9 + 1271),

wi·ʔitacákha·ʔac he likes us (41.2 + 43.3 + 51 + S + 1021 + 43.9 + 1201 + 1271).

40 + 50 + 32 + 40 + S:
itaʔakuʔiréʔe his interpreter (43.3 + 51 + 32 + 43.3 + S).

Prefix Class 50

Prefix 51, **t**₁- (.1), t- (.2) alienable, occurs word medially, immediately preceded by any point three allomorph of Class 40 and followed by another prefix or a stem.

The variation between the two allomorphs of prefix 51 is determined by the theme in a given sequence; **ta**- occurs in sequence with most themes which occur in sequence with prefix 51; **t**- occurs with a few such themes. (The themes in our sample which occur with t- are: ó·pi toobacco, ú·waki bed, úaxi saint and xúpa·ri medicine; i·púxi rattle occurs with either allomorph of 51.)

Sequences in which prefix 51 occurs are of the following types.

± other prefixes + 40 + 51 ± other prefixes ± 131 + S ± suffixes;

wata?iri my blood (41.3 + 51 + S),

ita?ó·pi his tobacco (43.3 + 51 + S),

aru?itawa·píša his greatgrandchild (31 + 43.3 + 51 + S),

aku?itawa?é?e owner (32 + 43.3 + 51 + S),

watawa·?i·kí·ka my window (41.3 + 51 + 21 + 11 + 131 + S),

ita?i·té·he his weapon (43.3 + 51 + S + 1021)

rita?áwa?ac it's your (plural) land (42.3 + 51 + S + 1201 + 1271).

40 + 40 + 51 + S + 1021 + 40 + other suffixes:

riwatacákniwa·c I like you (42.2 + 41.3 + 51 + S + 1021 + 41.9 + 1271).

40 + 50 + 32 + 40 + S:

ita?aku?iré?e his interpreter (43.3 + 51 + 32 + 43.3 + S).

Prefix Class 100-120

Prefix 101, ki- suus, become, occurs word initially or after prefixes of Classes 10-50, 20-70, 30-80 and 40-90-110.

Sequences in which prefix 101 occurs are of the following types.

± other prefixes + 101 ± 131 ± 140 + S + suffixes:

kiré·che·c he uses u. his own (101 + S + 1021 + 43.9 + 1271),

kikhíc he drank u. his own (43.6 + 101 + 131 + S + 1271),

ihk'rušú·kic he cleaned himself (43.1 + 101 + 141 + S + 1271),

kitúaru when it turns green (43.8 + 101 + S + 1251),
 i.wákihíšihke.c I'm blushing (= Become reddened by it)
 (11 + 41.8 + 101 + S + 1101 + 43.9 + 1271),
 arukitó'ohínke.c he'll turn blue (31 + 43.8 + 101 + S + 1101
 + 43.9 + 1271),
 wahkikí.ric I looked for it (43.2 + 41.8 + 101 + S + 1271).

(101 + 40) or (+ 101 + 40 + 101) + S + suffixes:

kiwirahcá.c I'm beginning to get careful (101 + 41.1 + S
 + 1271),
 kiwi.hí.rahpic I'm getting into a hard time (101 + 41.2 +
 S + 1271),
 kiwi.haxiša.cic I'm wet, but not very (101 + 41.2 + S +
 1051 + 1271),
 kiwi.xí'e.c (101 + 41.2 + S + 1271) or wi.kixí'e.c (41.2
 + 101 + S + 1271) or kiwi.kixí'e.c (101 + 41.2 + 101 + S
 + 1271) I'm getting old.

Prefix Class 130

Prefix 131, k- completive, occurs word initially
 (in the sense of being the first phonemically constituted
 element of the word) only when preceded by a zero alter-
 nant of prefix 43, third person; elsewhere, it occurs
 word medially, preceded by prefixes of Classes 10-60,
 20-70, 30-80, 40-90-110, 50, and 100-120 and followed by
 prefixes of Class 140 or stems.

Sequences in which prefix 131 occurs are of the
 following types.

40 + 40 or 101 + 131 + 140 + S + suffixes:

kikhíc he drank up his own (43.6 + 101 + 131 + S + 1271),

wahkaxúac I hide it away (43.2 + 41.6 + S + 1271),

wahkaraxúxnic I broke it by stepping on it (43.2 + 41.6 + 143 + S + 1271).

Prefix Class 140

Prefixes of Class 140 (instrumentals 141. ru- by hand, 142. ra- by teeth, 143. ara-(.1), -?a-(.2) by foot, 144. pa- by force, with stick, 145. ha- with knife, 147. ka- with hammer, fist) occur word initially only when preceded by a zero alternant of prefix 43, third person, elsewhere they occur word medially, preceded by prefixes of Classes 10-60, 20-70, 30-80, 40-90-110, 100-120, and 131 and followed by stems.

The variation between the two alternants of prefix 143 is morphologically determined; -?a- occurs when 143 is immediately preceded by first or second person actor prefixes (41.6 or 42.6); ara- occurs in other sequences.

Prefixes of Class 140 occur with only a limited number of stems, each of which occurs with only certain members of Class 140. These stems and the instrumental prefixes with which they occur are listed in 4. .

Sequences in which prefixes of Class 140 occur are of the type:

+ other prefixes + 40 + other prefixes + 140 + S
+ suffixes:

rušú·kic he wiped it with his hands (43.2 + 43.6 + 141 + S + 1271),

rahcakic he bit it off (43.2 + 43.6 + 142 + S + 1271),

arašú·kic he wiped it with his foot (43.2 + 43.6 + 143.1 + S + 1271),

waʔašú·kic I wiped it with my foot (43.2 + 41.6 + 143.2 + S + 1271),

pazpíc he pushed it off (43.2 + 43.6 + 144 + S + 1271),

hašíšhíc he cuts it by putting point of knife in (43.2 + 43.6 + 145 + S + 1271),

kazpíc he breaks it by pounding (43.2 + 43.6 + 146 + S + 1271),

for examples of sequences which include prefixes of Class 140 and prefixes 11, 21, 31, 40, 101, and 131 see the examples listed under each of these above.

Suffix Class 1000-1210

Suffix 1001, -hta along, toward, in the position of, occurs word finally or followed by suffixes of Classes 1020, 40-90-110-1030-1110-1180, 1050-1120, 1200, 1220, and 1270. Sequences in which suffix 1001 occurs are of the following types.

S + 1001 + 1222:

awašíhta to the cellar (S + 1001)

wirehta toward the door (S + 1001)

réhta along the edge (S + 1001)

íhe·htari in the others (S + 1001 + 1222).

± 40 + 31 + S + 1011 ± 1201:

aruháckihta lengthwise (31 + S + 1011),

aruhirá:ihtha?a their sleepy state (43.2 + 32 + S + 1001 + 1201).

40 + S + 1201 + 1011:

wi·cáha?ahtha by my canes (41.2 + S + 1201 + 1001).

40 + S + 1011 + 1051 + 1271:

iré?eht:·cic he likes to talk (43.3 + S + 1001 + 1051 + 1271).

40 or S + S + 1011 + 1021 + 40 + 1271:

icítihntawa·c I followed (tracked) him (43.2 + S + 1001 + 1021 + 41.9 + 1271),

í·awahuhtahe·c returns fur inside (S + S + 1001 + 1021 + 43.9 + 1271).

SUFFIX CLASS 1010-1120

Suffix Class 1010-1120 (1011-a·cI(.1),-racI(.2) approximative; 1012·-ra· approximative) occurs word medially preceded by a stem or a suffix of Class 40 (preceded by suffix 1021), 1040, 1090 or 1100, and followed by suffixes of Classes 1020 (plus 40), 1070, 1100 (plus 40) or 1200, plus 1270.

The variation between the two alternants of suffix 1011 is for most sequences phonemically determined -- -a·ci occurs when 1011 is preceded by a consonant or a single mora vowel, -raci occurs when 1011 is preceded by a long vowel; but, in sequence with a few stems either may occur, with a slight shift in the informant's translation, as: irá?a·cic he kind of talks (43 + S + a·ci + 1271), iré?eracic he talks a little (43 + S + raci + 1271).¹

Sequences in which suffix 1011 occurs are of the following types.

40 + S + 1091 + 1011 + 1270:

tó·pa·cic it's around four (43 + S + 1011.1 + 1271),

wa·ré·tha·cic I kind of didn't go there (41 + S + 1091 + 1011.1 + 1271).

irá?a·ciša he's kind of talking, but -- (43 + S + 1011.1 + 1274).

1. For the alternation of morpheme final vowels before morpheme initial /a/ see 2.2.3.

40 + S + S + 1041 + 1011 + 1071 + 1271:

waxúara?a·ci?i·c I'm always a little sick (41 + S + S + 1011.1 + 1071 + 1271),

iré?ekša·ci?i·c he always keeps on kind of talking (43 + S + 1041 + 1011.1 + 1071 + 1271).

40 + S + 1021 + 40 + 1011 + (1101 + 40) or 1071 + 1271:

wi·kikithe·racic he cheated me (41 + S + 1021 + 43 + 1011.2 + 1271),

kárawiwa·racihkiwa·c I make him remember it a little (43 + S + 41 + 1011.2 + 1101 + 41 + 1271),

aré?ehe·raci?i·c he gets kind of mad every now and then (43 + S + 1021 + 43 + 1011.2 + 1071 + 1271).

40 + 101 + S + 1011 + 1021 + 40 + 1271:

kihaxíša·chiwa·c I make him a little wet (43 + 101 + S + 1011.1 + 1021 + 41 + 1271).

S + 1101 + 1011 + 1051 + 1201 + 1271:

atía·cic it's a no good house (it's kind of a house) (S + 1011.1 + 1271)

atíhke·raca?ac these small houses are no good (S + 1101 + 1011.2 + 1201 + 1271).

21 + 31 + S + 1011 + 1272:

wa·?aru?išfaraciš the bad one (21 + 31 + S + 1011.2 + 1272).

Suffix 1012 occurs in sequences of the type 40 + S +

1012 + 1271, as watírac I almost died (41 + S + 1012 + 1271) (cp. watá·cic I fainted, 41 + S + 1011 + 1271).

SUFFIX CLASS 1020

Suffix 1021, -he·(.1), -hi(.2), -zero(.3) causative, use for or as, occurs word finally immediately preceded by a stem, or word medially preceded by a stem or suffix 1001 or 1011 and immediately followed by any point nine (suffix) alternant of Class 40 plus suffixes of Classes 1010-1120, 1040, 1060, 1070-1130, 1090-1150, 1100, 1190, 1200, 1250, or 1260 and 1270, or word medially preceded by a stem and followed by suffixes of Classes 1200, 1250, or 1270.

The variation between the three alternants of suffix 1021 is in part morphemically and in part phonemically determined; alternant .2 (-hi) occurs when 1021 is immediately preceded by a vowel and followed by 41.9 or 42.9 (first and second person actor); alternant .3 (-zero) occurs when 1021 is immediately preceded by a consonant and followed by 4̣1.9 or 42.9; alternant .1 (-he·) occurs elsewhere.

Sequences in which suffix 1021 occurs are of the following types.

± 31 ± 11 + (40 ± 21) or (21 ± 40) or 101 ± other prefixes except 51 + S ± 1001 or 1011 + 1021 + 40 ± other

suffixes + 1270:

wikáhukhe·c he fooled me (41.8 + S + 1021.1 + 43.9 + 1271),

wikáhukhira·c you fooled me (41.8 + S + 1021.2 + 42.9 + 1271),

táwa·c I killed him (43.2 + S + 1021.3 + 41.9 + 1271),

wa·tára·?a did you kill someone? (21 + S + 1021.3 + 42.9 + 1279),

aruwa·táhe·c he will kill someone (31 + 21 + S + 1021.1 + 43.9 + 1271),

arukó·wihe·tha?ac they will never stop (31 + 43.2 + S + 1021.1 + 43.9 + 1091 + 1201 + 1271),

kiré·che·c he uses up his own (101 + S + 1021.1 + 43.9 + 1271),

kárawihe·racihke·hic he'll make him remember it a little (43.2 + S + 1021.1 + 43.9 + 1011 + 1101 + 43.9 + 43.10 + 1191 + 1271),

aphúhkaha·k using it as a hat (43.8 + 43.5 + S + 1021.1 + 43.9 + 1278),

for other examples see the examples given under prefixes 11, 21, 31, 32 and 40 and suffixes 1001 and 1011 above.

± (40 + 50) + 11 or 31 + S + 1021 ± 1251:

i·té·he weapon (11 + S + 1021.1),²

ita?i·té·he his weapon (43.3 + 51 + 11 + S + 1021.1),

². For the variation of morpheme final long vowels with morpheme final short vowels see 2.3.1.

oru?f·rihe a loan, lease (31 + S + 1021.1),
 ita?aru?apaxihe·ru his place for resting (43.3 + 51 + 31
 + S + 1021.1 + 1251).

32 ± 21 + S + 1021 ± 1201 or 1253 ± 1279:

akutáhe one who was killed (32 + S + 1021.1),
 akutáha·?a ones who were killed (32 + S + 1021.1 + 1201),
 akutáhe·šta the one who was killed (32 + S + 1021.1 + 1253),
 akutáhe·šta?a which one is it that was killed? (32 + S +
 1021.1 + 1253 + 1279),
 akuwa·kírikihe blacksmith (32 + 21 + S + 1021.1).

40 + 40 + 50 + S + 1021 + 40 + 1271:

ri·watacaxiwa·c I like you (=make you my good) (42.2 +
 41.3 + 51 + S + 1021.2 + 41.9 + 1271).

S + S + 1021:

atícuahē tipi (=house put up conical) (S + S + 1021.1).

SUFFIX CLASS 1040

Suffix 1041, -kša iterative, occurs word medially, preceded by a stem or suffix 1021 plus 40 and followed by suffixes of Classes 1010-1120, 1070-1130, or 1200 and 1270.

Sequences in which suffix 1041 occurs are of the following types.

40 + S ± (1021 + 40) + 1041 ± 1201 + 1271:

iré?ekšac he talks all the time (43 + S + 1041 + 1271),

watíšaʔac we faint (41 + S + 1041 + 1201 + 1271),

aréʔera·kšac you're mad all the time (43 + S + 1021 + 42
+ 1041 + 1271),

aréʔehe·kšaʔac they're mad all the time (43 + S + 1021 +
43 + 1041 + 1201 + 1271).

40 + S + 1041 ± 1011 + 1071 + 1271:

té·kšaʔi·c he always faints (43 + S + 1041 + 1071 + 1271),

iréʔekša·ciʔi·c he always keeps on kind of talking (43 + S
+ 1041 + 1011 + 1071 + 1271).

SUFFIX CLASS 1050

Suffix 1051, -wi quantitative, occurs word finally preceded by a stem, or word medially preceded by a stem and followed by suffix 1171.

The following are examples of forms containing suffix 1051.

túawi how many (S + 1051),

túawiha how many times (S + 1051 + 1171),

šiʔawi that many (S + 1051),

šiʔawiha that many times (S + 1051 + 1171).

SUFFIX CLASS 1060

Suffix 1061, -rIA reflexive, occurs word medially preceded by a stem or a suffix of Class 40 (preceded by suffix 1021) and followed by suffixes of Classes 1070, 1100 (plus 40) or 1200 plus 1270.

Suffix 1061 occurs in sequences of the following types.

40 ± 101 + S + 1061 ± (1071 + 1101 + 40) ± 1201 +
1271:

wi·cákiriác I am fussy (good to/for me) (41 + S + 1061 + 1271),

wihkicákiria?i·hkiwa·c I always make myself fussy (41 + 101 + S + 1061 + 1071 + 1101 + 41 + 1271),

wihkicákiria?i·hkiwa·?ac we always make ourselves fussy (41 + 101 + S + 1061 + 1071 + 1101 + 41 + 1271),

kf?iria?a?ac they ride horseback (43 + S + 1061 + 1201 + 1271).

40 + S + 1021 + 43 + 1061 + 1270:

wi·hfšhe·riác I made myself red (41 + S + 1021 + 43 + 1061 + 1271).

SUFFIX CLASS 1070-1130

Suffix Class 1070-1130, 1071. -i- durative, iterative, 1072. -ahi- momentaneous, occurs word medially preceded by a stem or by suffixes of Classes 1010-1120, 1020 plus 40, 1040, 1060, 1090, or 1100 plus 40, and followed by suffixes of Classes 1100 plus 40, 40 plus 1190, 1200, 1250, 1260 or 1270.

Suffix 1071 occurs in sequences of the following types.

40 ± 101 + S ± 1041 ± 1011 + 1071 ± 1201 or 1261 + 1271 or 1283:

círi?i·c it's always yellow (43 + S + 1071 + 1271),

hf·ši?i·ruc they're always red (43 + S + 1071 + 1201.2 + 1271),

kitó?ohi?i·ruc they always turn green (43 + 101 + S + 1071 + 1201.2 + 1272),

té·kša?i·c he always faints (43 + S + 1041 + 1071 + 1271),

té·kša?i·ruc they always faint (43 + S + 1041 + 1071 + 1201.2 + 1271),

iré?ekša·ci?i·c he always keeps on kind of talking (43 + S + 1041 + 1011 + 1071 + 1271),

hí·šicaki?i·ruški they're always bright red (43 + S + S + 1071 + 1201.2 + 1283),

ré·?i·warec he went, they say (43 + S + 1071 + 1261 + 1271).

+ 40 + 21 or 40 + S + 1071 + 1272 or (1253 ± 1279):

wa·pa·hi?i·š the one who kept singing (21 + S + 1071 + 1272),

awaká?i·š I who always look (43 + 41 + S + 1071 + 1272).

wa·rúhta·?i·šta a crazy fellow (21 + S + 1071 + 1253),

wa·rúhta·?i·šta?a is he a crazy fellow? (21 + S + 1071 + 1253 + 1279).

21 or 40 ± S + S + (1021 + 40) or (1101 + 40) ± 1011
or 1091 + 1071 ± 1201 + 1271:

pú·ciwa·?i·c (43 + S + 1021 + 41 + 1071 + 1272) ~pú·cihkiwa·?i

(43 + S + 1101 + 41 + 1071 + 1272) I make him take it from him
always,

wa·rúticakihe·?i·ruc they always eat well (21 + S + S + 1021 + 43 + 1071 + 1201.2 + 1272),

aré?ehe·raci?i·c he gets kind of mad every now and then (43 + S + 1021 + 43 + 1011 + 1071 + 1272),

wi·hiráphe·tha?i·ruc they keep me awake all night (41 + S + 1021 + 43 + 1091 + 1071 + 1201.2 + 1272).

40 ± 101 + S ± 1061 or 1011 + 1071 + 1101 * 40 + 1271:

wíhkićákiriá?i·hkiwa·c I always wake myself fussy (41 + 101 + S + 1061 + 1071 + 1101 + 41 + 1271),

kárawi?i·hke·c he always makes him remember (43 + S + 1071 + 1101 + 43 + 1271),

kárawa·ci?i·hke·c he always makes him remember a little bit (43 + S + 1011 + 1071 + 1101 + 43 + 1271).

40 + S + 1011 + 1071 + 1101 + 40 + 1071 + 1271:

kárawaci?i·hke·?i·c he always makes him remember a little bit (43 + S + 1011 + 1071 + 1101 + 43 + 1071 + 1271),

kárawi?i·hke·?i·c he always makes him remember (43 + S + 1011 + 1071 + 1101 + 43 + 1071 + 1271). (Either of the two preceding sequence types may occur alternatively to this -- kárawi?i·hke·?i·c ~ kárawi?i·hke·c ~ kárawihke·?i·c he always makes him remember.)

+ 31 + 40 + S + 1278 + S + 1071 + 1251 or (1252 + 1278):

atá?akhu·?i·to·k if he coming up over always comes (43 + S + 1278 + S + 1071 + 1252 + 1278),

aru?atá?akhu·?i·ru at the place where he comes up, coming here (31 + 40 + S + 1278 + S + 1071 + 1251).

Suffix 1072, -ahi-, occurs in sequences of the following types.

40 + 40 + 140 + S + 1072 + 1201 or 1261 + 1271 or 1278:

hí·ahic he drank it all at once (43 + 43 + S + 1072 + 1271),

awakáhs?ac we caught sight of him (43 + 41 + S + 1072 + 1201 + 1272) (cp. awaká?ac we look),

ikáhiware·c he caught sight of him they say (43 + 43 + S + 1072 + 1261 + 1271),

wa·pahcákahic I slice it (43 + 41 + 144 + S + 1072 + 1271)
(cp.wa.pahcakic I cut it),

kíkšahak dressing him all at once (43 + 43 + S + 1072 + 1278)
40 + S + 1101 + 40 + 1072 ± (40 + 1191) ± 1201 + 1271
or 1279):

ó·cihkiwa·hic I took a little rest (43 + S + 1101 + 41 + 1072 + 1278),

ó·cihkira·hi?i did you take a little rest (43 + S + 1101 + 42 + 1072 + 1279),

ó·c.ihkiwa·hiwiha?ac we're going to take a little rest (43 + S + 1101 + 41 + 1072 + 41 + 1191 + 1201 + 1271).

SUFFIX CLASS 1090 - 1150

Suffix 1091, -tha negative, occurs word finally preceded by a stem; or word medially preceded by a stem or suffixes 1021 plus 40 and followed by suffixes of Classes 1010-1120, 1070-1130, 1170, 40 plus 1190, 1200, 1220, 1250, 1260 or 1270.

Sequences in which suffix 1091 occurs are of the following types.

± other prefixes + 40 ± S + S + 1091 ± 1091, 1012 or (40 + 1191) ± 1201 ± 1270:

wašákitha my thumb (41 + S + 1091) (cp. wašáki my hand),
 atíthac that's no house (43 + S + 1091 + 1271),
 ó·tithak it's not ripe, not being ripe (43 + S + 1091 +
 1278),
 rá·khitha?ac they didn't get back (43 + S + 1091 + 1201 +
 1271),
 wahkárache·thathaša though I didn't refuse (41 + S + 1091 +
 1091 + 1274),
 waríahitharac I almost stopped breathing (41 + S + 1091 +
 1012 + 1271),
 hára·tharic you can divorce him (43 + S + 1091 + 42 + 1191
 + 1271),
 i·wa·?i·káthac he can't see through it (11 + 21 + 43 + S +
 1091 + 1271),
 wihá·withawa when I cannot sleep (41 + S + 1091 + 1273),
 tó?oše·tha?ac they can't do anything about it (43 + 43 + S
 + S + 1091 + 1201 + 1271),
 oruwitó?oše·tha?ac they can't do anything to me (31 + 41 +
 43 + S + S + 1091 + 1201 + 1271).

40 + S + 1091 + 1171 or (1251 + 1278):

hú·thaha before he came (43 + S + 1091 + 1171),
 ó·titharu when they're not ripe (43 + S + 1091 + 1251),
 hešétharuk if it's not that (43 + S + 1091 + 1251 + 1278).

+ other prefixes + 40 + S + 1021 or 1101 + 40 + 1091

+ 1071 + 1201 or 1261 + 1271:

i·wa·ʔi·káhe·thac by it he blinds him (11 + 21 + 43 + S + 1021 + 43 + 1091 + 1271),

i·wa·ʔi·káhe·thaware·c by it he blinds him, they say (11 + 21 + 43 + S + 1021 + 43 + 1091 + 1261 + 1271),

arukó·wihe·thaʔac they will never stop (31 + 43 + S + 1021 + 43 + 1091 + 1201 + 1271),

wi·hiráphe·thəʔi·ruc they keep me awake all night (41 + S + 1021 + 43 + 1091 + 1071 + 1201 + 1271),

ré·hke·thac he doesn't let him go / want him to go (43 + S + 1101 + 43 + 1091 + 1271).

S + 1091 + 1282:

awahútha not as deep (S + 1091),

kuréʔetha don't carry it! (S + 1091 + 1282).

30 + S + S + 1091 + 1201 + 1272:

o·ruwaʔéʔethaʔa some who have none (31 + S + S + 1091 + 1201),

akuʔó·tithaʔaš the ones that are not ripe (32 + S + 1091 + 1201 + 1272).

S + 1091 + 1222:

rúwa·cathari just that one (person) (S + 1091 + 1222).

SUFFIX CLASS 1100

Suffix 1101, -hke·(.1), hki(.2) causative, diminutive, imitative, occurs word finally preceded by a stem, or word

medially preceded by a stem or suffixes of Class 1010-1120, 1020 plus 40, 1060, and 1070-1130 and followed by suffixes of Classes 40, 1010-1120, 1070-1130, 1090-1150, 40 plus 1190, 1200, 1250, and 1270.

The point two alternant, -hki, occurs when suffix 1101 is immediately followed by 41.9 or 42.9 (first or second person actor); the point one alternant, -hke, occurs elsewhere.

Sequences in which suffix 1101 occurs are of the following types.

\pm other prefixes + 40 \pm other prefixes + S \pm (1021 + 40) \pm 1011 + 1101 + 40 \pm 1072 \pm (40 + 1191) \pm 1201 or 1261 + 1271, 1278 or 1279:

kúxtihkiw·c I made him help him (43 + S + 1101.2 + 41.9 + 1271),

i·wikihí·šihke·c I'm blushing (becoming reddened by it) (11 + 41 + 101 + S + 1101.1 + 43.9 + 1271),

arukiré·che·hke·c he will make him use up his own (31 + 43 + 101 + S + 1021 + 43 + 1101.1 + 43.9 + 1271),

kahúkhe·hke·c he made him fool him (43 + S + 1021 + 43 + 1101.1 + 43.9 + 1271),

ó·cihkira·?ahi?i did you take a little rest? (43 + S + 1101.2 + 42.9 + 1072 + 1279),

ó·cihkiwa·?ahiwiha?ac we're going to take a little rest (43 + S + 1101.2 + 41.9 + 1072 + 41 + 1191 + 1201 + 1271),

kicákihka·k he becomes good / becoming good (43 + 101 + S + 1101.1 + 43.9 + 1278),

axpíhke·ware·c he left it over, they say (43 + S + 1101.1 + 43.9 + 1261 + 1271),

for additional examples see the examples listed under suffix 1021 above.

40 + 101 + S + 1061 + 1071 + 1101 + 40 + 1071 + 1201 + 1271:

pú·cikhkiwa·?i·c I made him take it from him always (43 + S + 1101.2 + 41.9 + 1071 + 1271),

ré·hkiwa·?i·ruc we let them go always (43 + S + 1101.2 + 41.9 + 1201 + 1271),

wihkicákiria?i·hkiwa·c I always make myself fussy (41 + 101 + S + 1061 + 1071 + 1101.2 + 41.9 + 1271),

for additional examples see the examples listed under suffix 1071 above.

40 + S + 1101 + 40 + 1091 + 1271:

ré·hke·thac he doesn't want him to go / he doesn't let him go (43 + S + 1101.1 + 43.9 + 1091 + 1271).

40 + S + 1101 + 1281 or 1282:

ikāhka show them! (43 + S + 1101 + 1282),

ikāhka·ra you (plural) show them (43 + S + 1101 + 1281).

40 + 101 + S + 1101 + 40 + 1251 + 1278:

kicó·tahke·ru when they start fading (43 + 101 + S + 1101.1 + 43.9 + 1251),

kiré·šahke·ruk when it is no more (becomes nothing) (43 + 101 + S + 1101.1 + 43.9 + 1251 + 1278).

+ prefixes + S + 1101 + 1201 + 1271, 1272 or (1251 + 1274):

wíahke small woman (S + 1101.1),

wáhtihke toy boat or car (S + 1101.1),

wištáhke my glasses (41 + S + 1101.1) (cp. wištá my eye),

a·tihka·ʔa their small houses (43 + S + 1101.1 + 1201),

watawa·ʔakupóhoruwihke my apple (41 + 51 + 21 + 32 + S + 1101.1),

wa·ʔakucí·rihka·ʔaš oranges (21 + 32 + S + 1101.1 + 1201 + 1272),

wa·rákahke·c it's my doll (43 + 41 + S + 1101.1 + 1271) (cp. waráka my young).

i·ʔaxúahke·ruš·a even curtains (11 + S + 1101.1 + 1251 + 1274) (cp. axúac it covers it).

40 + S + 1101 + 1011 + 1201 + 1271:

atíhke·racaʔac these small houses are no good (43 + S + 1101.1 + 1201 + 1271).

SUFFIX CLASS 1170

Suffix 1171, -ha in reference to time, place, occurs word finally preceded by a stem or suffixes of Classes 1050 or 1090-1150, and word medially preceded by a stem or suffix

of Class 1090-1150 and followed by suffixes of Classes 1200, 1230, 1250 and 1270.

Suffix 1171 occurs in sequences of the following types.

$40 \pm S + S \pm 1091 + 1171 \pm 1200 \pm 1278$:

wahkúha while she was there (43 + S + 1171),

ácaha while he was close / closely (43 + S + 1171),

ácahak it being close (43 + S + 1171 + 1278),

ó·theriha?a when they're almost ripe (43 + S + S + 1171 + 1201),

hú·thaha before he came (43 + S + 1091 + 1171),

wa·ríšithahapa before they dance (43 + S + 1091 + 1171 + 1202).

$S + 1171 + 1231$ or 1251 :

é·raha·ru long ago / past (S + 1171 + 1251),

é·raha·kua in the past (S + 1171 + 1231).

$S \pm 1051 + 1171 \pm \check{S}$:

kixhúha five times (S + 1171),

kixhúhapiiraka fifty (S + 1171 + S),

túawiha how many times (S + 1051 + 1171).

SUFFIX CLASS 1190

Suffix 1191, -hi (.1), -zero (.2), future, probability, ability, occurs word medially immediately preceded by suffixes

of Class 40 (person actor) and followed by suffixes of Classes 1200 and 1270.

The point two alternant, -zero, occurs when suffix 1191 is immediately preceded by 41.10 or 42.10 (first or second person) and followed by suffixes other than 1201 (plural); the point one alternant, -hi, occurs elsewhere.

The actor is marked twice in forms containing suffix 1191, once immediately preceding 1191 (by 40.10) and once by prefix or, in the case of forms containing 1021 or 1101 (causatives), by suffix (40.9).

Suffix 1191 occurs in sequences of the following type.

$\underline{+ 40 + 40 + S + (1021 + 40) + 1011 + (1101 + 40) + 1072}$ or $\underline{1091 + 40 + 1191 + 1201 + 1271}$:

ácahic: it might be near (43 + S + 43 + 1191.1 + 1271)

raráhuric you must come (42 + S + 42 + 1191.2 + 1271),

wahé•wic I might - / I can make it (43 + 41 + S + 41 + 1191.2 + 1271),

wahpiwiha?ac we'll take a bath (43 + 41 + S + 41 + 1191.1 + 1201 + 1271),

hára•theric you can divorce him (43 + S + 1021 + 42 + 1091 + 42 + 1191.2 + 1271),

cixihkiwa•wic I'll make him jump (43 + S + 1101 + 41 + 41 + 1191.2 + 1271),

ó•cixkiwa•?abiwiha?ac we're going to take a little rest (43

+ S + 1101 + 41 + 1072 + 41 + 1191.1 + 1201 + 1271),
kárawihe·racihke·hic he'll make him remember it a little
bit (43 + S + 1021 + 43 + 1011 + 1101 + 43 + 43 + 1191.1
+ 1271).

SUFFIX CLASS 1200

Suffix Class 1200 (1201.-a?a .1, -ru .2 plural; 1202.-apa group plural) occurs word finally preceded by a stem or suffixes of Classes 1000-1210, 1090-1150, or 1170, and word medially preceded by a stem or suffixes of Classes 40, 1010-1120, 1020, 1040, 1060, 1070-1130, 1090-1150, 1100, and 1190 and followed by suffixes of Classes 1000-1210, 1220, 1230, 1250, and 1270.

The point two alternant of 1201 (-ru) occurs when 1201 is immediately preceded by 1071 (durative, iterative); the point one alternant (-a?a) occurs elsewhere.

Sequences in which suffix 1201 occurs are of the type \pm prefixes \pm S \pm S \pm other suffixes + 1201 \pm 1001 or 1251 \pm 1270, as;

hopá?a holes (S + 1201.1),

f·xpa?a his wines, their wines (43 + S + 1201.1),

wú·aš fish (S + 1201.1 + 1272),

cácka?ac they're noisy (43 + S + 1201.1 + 1271),

táha·?ac they killed him (43 + S + 1021 + 43 + 1201.1 + 1271),

kí?iria?a?ac they ride horseback (43 + S + 1061 + 1201.1 + 1271),

wa·?áhtu·?ahe these skulls (21 + S + 1201.1 + 1221),

wa·há·tha?aru when we cut it, when I cut them (43 + 41 + 145 + S + 1201.1 + 1251),

rawáha?aruk if you (plural) want it (43 + 42 + S + 1201.1 + 1251 + 1278),

wi·cáha?ahta by my canes (41 + S + 1201.1 + 1001),

aruhiráwihta?a their sleepy state (43 + 31 + S + 1001 + 1201.1),
 atínka?a small houses (S + 1101 + 1201.1),
 watawa?akucí·rihka?aš my oranges (41 + 51 + 21 + 32 + S + 1101 + 1201.1 + 1272),
 kitó?ohicaki?i·ruc they always turn a good green (43 + 101 + S + S + 1071 + 1201.2 + 1271),
 híšicaki?i·ruški they are always bright red (43 + S + S + 1071 + 1201.2 + 1283),
 ré·hkiwa?i·ruc we let them go always (43 + S + 1101 + 41 + 1071 + 1201.2 + 1271).

Suffix 1202, -apa group plural, occurs in sequences of the following types.

$\pm 40 + 40 + S \pm 1012 + 1202 \pm 1231 + 1270$:

á?apak they have it, having it (43 + 43 + S + 1202 + 1278),
 íapakuac they're over there (43 + S + 1202 + 1231 + 1271),
 tárapac they're dying (43 + S + 1012 + 1202 + 1271).

40 + S + 1091 + 1171 + 1202: wa·rišithahapa before they dance (43 + S + 1091 + 1171 + 1202).

SUFFIX CLASS 1200

Suffix Class 1200 (1221. -he that one here, 1222. -ri objectifier, demonstrative, 1223. -ka that one, time-place localizer) occurs word finally preceded by stems or suffixes of Classes 1000-1210, 1010-1120, 1100, or 1200, and word

medially preceded by stems or suffixes of Class 1200 and followed by suffixes of Classes 1230 and 1270.

Sequences in which suffix 1221 occurs are of the type
 $\pm 21 \pm 11 + S \pm 1201 + 1221 \pm 1231$, as:

wacé·he that man (S + 1221), wa·rahe this winter (S + 1221),
 wa·ʔáhtu·ʔahe these skulls (21 + S + 1201 + 1221),
 wa·ʔi·ʔaxíhekua in that corral (21 + 11 + S + 1221 + 1231).

Suffix 1222 occurs in sequences of the following types:

± 31 or (40 + 50) + S + 1222 ± 1270 :

ihá·ri the other (S + 1222) (cp. ihá·c it's different),
 ciríari a cold (S + 1222) (in ciríari wiʔákšiac I caught a cold),
 watxúpa·ri my medicine (41 + 51 + S + 1222) (cp. xúpa·c it's holy),
 orukíʔiri the rider (31 + S + 1222),
 šéʔeriwa (S + 1222 + 1273) or šéʔeric (S + 1222 + 1271)
that's the one.

S + 1001 or 1201 + 1222:

ihá·htari in, toward the others (S + 1001 + 1222),
 ši·ʔari those (S + 1201 + 1222).

Suffix 1223 occurs in sequences of the following types:

$\pm 31 \pm S + S \pm 1201 + 1223 \pm 1231$:

awahúka inside, in the inside (S + 1223),
 wapíhirika nowadays (S + S + 1223),
 aruwatúka where there is (31 + S + 1223) (in wirí aruwatúka where there is water),

ší·ʔakakua at that time (S + 1201 + 1223 + 1231).

40 + S + 1001 + 1101 + 1201 + 1223:

iwaráʔacihka·ʔaka we just talk about it (43 + 41 + S + 1001 + 1101 + 1201 + 1223).

SUFFIX CLASS 1230

Suffix Class 1230 (1231. -ku .1 , -hkua .2 in, into, that one; 1232. -kuha· .1, -hkuha· .2 from) occurs word finally preceded by stems or suffixes of Classes 1000-1210, 1170, 1200 or 1220, and word medially preceded by stems or suffixes of Class 1200 and followed by suffixes of Classes 1250 and 1270.

The point two allomorphs (1231.2 -hkua and 1232.2 -hkuha·) occur when suffixes 1231 and 1232 are preceded by long vowels or identical vowels separated by glottal stop; the point one allomorphs (1231.1 -kua and 1232.1 -kuha·) occur elsewhere. (For the alternation of morpheme final /a·/ with /a/ when followed by juncture see 2.3.1.)

Suffix 1231 occurs in sequences of the following types:

+ (21 + 11) + S + 1201 + 1220 + 1231:

atíkua in the house (S + 1231.1)

wa·ʔákašikua in the paper (21 + S + 1231.1),

wiráʔahkua into the fire (S + 1201 + 1231.2),

ší·ʔakakua at that time (S + 1201 + 1223 + 1231.1),

wa·ʔi·ʔaxíhekua in that corral (21 + 11 + S + 1221 + 1231.1)

S + 1001 or 1171 + 1231:

rěhtakua along the edge (S + 1001 + 1231.1),

ě·rahakua long ago (S + 1171 + 1231.1).

40 + S + 1202 + 1231 + 1251 + 1270:

fapakuac they are there (43 + S + 1202 + 1231.1 + 1271),

tá·pakuaruk wherever she is (going) (43 + S + 1231.1 + 1251 + 1278).

Sequences in which suffix 1232 occurs are of the following type:

+ 40 + S + 1232 + 1278:

šé?ehkuha from that, for that reason (S + 1232.2),

í·hkuha from her mouth (43 + S + 1232.2),

páhčitakuha·k from the west, he being from the west (43 + S + 1232.1 + 1278).

SUFFIX CLASS 1240

Suffix 1241, -ši in reference to time, occurs word finally preceded by a stem or word medially preceded by a stem or a suffix of Class 40 (preceded by 1021) and followed by suffixes of Classes 1250 or 1270.

Sequences in which suffix 1241 occurs are of the following types:

31 + S + 1241:

arukixhúši at five (31 + S + 1241).

S + 1241 + 1251:

ó·kciaširu last night (S + 1241 + 1251),

hú·riširu yesterday (S + 1241 + 1251).

40 + S + 1241 + 1276:

arí·tišihiri because he's hungry (S + 1251 + 1276),

tá·pašihiri that's why (S + 1251 + 1276).

40 + S + S + 1021 + 40 + 1241 + 1273:

ixúare·he·šíwa because it made him sick (43 + S + S + 1021 + 43 + 1241 + 1273).

SUFFIX CLASS 1250

Suffix Class 1250 (1251.-ru inclusive (time or place) if; 1252. -to.- indefinite, or; 1253. -šta habitual agent) occurs word finally preceded by stems or suffixes of Classes 40, 1020, 1070-1130, 1090-1150, 1100, 1170, 1200, 1220 and 1240, or word medially preceded by stems or suffixes of Classes 40, 1020, 1070-1130, 1090-1150, 1100, 1200, and 1230 and followed by suffixes of Class 1270.

Suffix 1251, -ru, occurs in sequences of the following types.

\pm 40 + 40 \pm other prefixes + S \pm (1091 \pm 1223) or 1201 or 1223 + 1251 \pm 1270:

ó·tíru when they're ripe (40 + S + 1251),

hešētharuk if it's not that (40 + S + 1091 + 1251 + 1278)

rawaḥā'aruk if you (plural) want (43 + 42 + S + 1201 + 1251 + 1278),

tá·pakuaruk wherever she is (going) (43 + S + 1231 + 1251 + 1278),

wakúruš·a even if I give him (43 + 41 + S + 1251 + 1274),

riʔa·ráciruc he's behind you (42 + 43 + S + 1251 + 1271),

kitúaru when it turns green (43 + 101 + S + 1251),

š·tithakaru when they're not ripe (43 + S + 1091 + 1223 + 1251),

hí·ruk if he came (43 + S + 1251 + 1278).

101 + S + 1101 + 40 + 1251 ± 1278;

kicš·tahke·ru when it starts fading (101 + S + 1101 + 43 + 1251),

kiré·šahke·ruk when it is no more (101 + S + 1101 + 43 + 1251 + 1278).

± (40 + 50) ± other prefixes + S ± 1021, 1101, 1171
or 1241 + 1251 ± 1274;

a·táru in the morning (S + 1251),

wi·té·rušha even buffalo (S + 1251 + 1274),

é·raharu long ago (S + 1171 + 1251),

š·kciaširu last night (S + 1241 + 1251),

i·ʔaxúahke·rušha even curtains (11 + S + 1101 + 1251 + 1274),

itaʔaruʔapaxíhe·ru his place for resting (43 + 51 + 31 + S + 1021 + 1251).

31 + 40 + S + 1278 + S + 1071 + 1251;

aruʔatáʔakhu·ʔi·ru where he always comes up, coming here

(31 + 43 + S + 1278 + S + 1071 + 1251).

Suffix 1252, -to·- occurs in sequences of the following types.

± 40 ± 40 + S + 1252 + 1278:

kiXHúto·k about five (S + 1252 + 1278),

rihá·wito·k are you going to sleep, or - (42 + S + 1252 + 1278),

šé?e?o·k -- šé?eto·k whether it's that one -- or that one (43 + S + 1252 + 1278 -- 43 + S + 1252 + 1278),

kiwaxhúto·k perhaps he asked him (43 + 43 + S + 1252 + 1278).

40 + S + 1278 + S + 1071 + 1251 + 1278:

atá?akhu·?i·to·k he comes up, coming here always, I wonder (43 + S + 1278 + S + 1071 + 1251 + 1278).

Suffix 1253, -šta, occurs in sequences of the following type.

± 40 + 21 or 32 + S ± 1021 or 1071 + 1253 ± 1271 or 1279:

wa·karíšta one who asks / child (21 + S + 1253),

wa·karíštac he's a child (43 + 21 + S + 1253 + 1271),

wa·rúhta·?i·šta?a is he a crazy fellow? (21 + S + 1071 + 1253 + 1279),

akutáhe·šta the one who was killed (32 + S + 1021 + 1253),

akutáhe·šta?a which one is it who was killed? (32 + S + 1021 + 1253 + 1279).

SUFFIX CLASS 1260

Suffix 1261, -ware- quotative, occurs word medially preceded by stems or suffixes of Classes 40, 1020, 1070-1130, 1090-1150, 1100 or 1200 and followed by suffix 1271.

Sequences in which suffix 1261 occurs are of the following type.

\pm other prefixes + 40 \pm 101 \pm 140 + S \pm (1021 or 1101 + 40) \pm 1071 or 1091 \pm 1201 + 1261 + 1271:

wiʔi·watuware·c I was born (41 + S + 1261 + 1271),

hašhi·rá·ʔaware·c they are grizzlies, they say (43 + S + 1201 + 1261 + 1271),

kiruškiware·c he pulled out his own, they say (43 + 101 + 141 + S + 1261 + 1271),

ré·ʔi·ware·c he always went, they say (43 + S + 1071 + 1261 + 1271),

ré·ʔi·ruware·c they always went, they say (43 + S + 1071 + 1201 + 1261 + 1271),

i·wa·i·káthaware·c he can't see through it, they say (11 + 21 + 43 + 43 + S + 1091 + 1261 + 1271),

i·wa·ʔi·káhe·thaware·c by it he blinds him, they say (11 + 21 + 43 + S + 1021 + 43 + 1091 + 1261 + 1271),

axpínke·ware·c he left it over, they say (43 + S + 1101 + 43 + 1261 + 1271).

SUFFIX CLASS 1270-80

The members of suffix class 1270-80 are: 1271.-c predicative, utterance final; 1272.-š substantive, named; 1273.-wa as, when, at; 1274.-šha concessive; 1275.-š e distributive; 1276.-hiri because; 1277.-rahe reportative; 1278.-ak(.1),-k(.2) predicative, non-utterance final; 1279.-ʔ repeat-final-mora interrogative; 1281.-ara imperative plural; 1282.-zero(.1),-h(.1),-a(.2),-ah(.2),-ka(.1),-aka(.2) imperative singular; and 1283.-ški emphatic.

Suffix class 1270-80 occurs word finally preceded by stems and suffixes of all other classes except 1050 (quantifier). (Suffix 1051 occurs so infrequently in our corpus as to make uncertain what its potential associations are.)

Suffix 1271.-c, utterance final predicative, occurs in sequences of the type: ± other prefixes + 40 or 101 ± other prefixes + S ± other suffixes + 1271;
 wiháwic I sleep (41 + S + 1271),
 riʔakuwa·híric you're a worker (42 + 32 + 21 + S + 1271),
 kiré·che·c he uses up his own (101 + S + 1021 + 43 + 1271),
 fapakuac they are there (43 + S + 1202 + 1231 + 1271), for additional examples see those listed under all affix classes except 1050, 1170, and 1240.

Suffix 1272, substantive, named occurs in sequences of the following type:

± prefixes + S + ± other suffixes + 1272:

ari·š the road (S + 1272),

cáckiš Noizy (personal name -- S + 1272),

wú·aš fish (S + 1201 + 1272),

wa·pá·hi·i·š the one who kept singing (21 + S + 1071 + 1272),

for additional examples see those listed under Classes 30, 1010, 1090 and 1200.

Suffix 1273, -wa as, when, at, occurs in sequences of the type: ± prefixes + S + ± other suffixes + 1273:

ó·kciawa at night (S + 1273),

té·wa when she died (43 + S + 1273),

ká·?awa as they have been there (43 + S + 1201 + 1273),

for additional examples, see those listed under Classes 30, 1020, 1090, 1200, 1220 and 1240.

Suffix 1274, -šha concessive, occurs in sequences of the type: ± prefixes + S + ± other suffixes + 1274:

atíšha a house, but -- (S + 1274),

witíašha although I'm late (41 + S + 1274),

hu·párušha even shoes (S + 1251 + 1274),

for additional examples, see those listed under Classes 1010, 1090, 1100 and 1250.

Suffix 1275, -še distributive occurs in sequence of the type: ± prefixes + S + ± 1201 + 1275:

atíše camp (S + 1275, cp. atí house),

a·tá·aše their several houses (41 + S + 1201 + 1275),

aru?ũ?uše places where wounded (31 + S + 1275).

Suffix 1276, -hiri because occurs in sequences of the type: 40 + S + 1241 + 1276:

tápa·šihiri because it's soft (41 + S + 1241 + 1276),

arí·tišihiri because he's hungry (41 + S + 1241 + 1276).

Suffix 1277, -rahe reportative, occurs in sequences of the type: 40 + S + 1201 + 1277:

hiráwirahe he slept, so reported (43 + S + 1277),

há·?arahe they said so, so reported (43 + S + 1201 + 1277).

Suffix 1278, -ak(.1), -k(.2) non-utterance final predicative, occurs in sequence of the type: ± other prefixes + 40 ± other prefixes + S ± other suffixes + 1278:

ó·tak it's ripe / it being ripe (43 + S + 1278.1),

kicákihka·k he becomes good / becoming good (43 + 101 + S + 1101 + 43 + 1278.1),

rawahá?aruk if you (plural) want (43 + 42 + S + 1201 + 1251 + 1278.2),

rihá·wito·k are you going to sleep, or -- (42 + S + 1252 + 1278.2). The point two alternant, -k, occurs when 1278 is preceded by a morpheme ending in /o/ or /u/; the point one alternant, -ak, occurs elsewhere.

Suffix 1279, -? repeat-final-mora interrogative, occurs in sequences of the type: ± prefixes + S ± other suffixes + 1279:

tá·pa?a what? (S + 1279),

ricawé·?e are you hot? (42 + S + 1279),

ó·cikhira·?ahi?i did you take a little rest? (43 + S + 1101 + 42 + 1072 + 1279).

Suffixes 1281, -a_{ra} imperative plural, and 1282, -zero ~ -h ~ -ka (.1), -a ~ -ah ~ -aka (.2) imperative singular, occur in sequences of the type: 40, 21 or 101 + S ± 1021 or 1101 ± 1091 + 1281 or 1282:

tá die! (43 + S + 1282.2),

tá·ra you (plural) die! (43 + S + 1281),

ripáhtah roll over! (42 + S + 1282.2),

ripáhta·ra you (plural) roll over! (42 + S + 1281),

wa·pá·ha sing something! (21 + S + 1282.2),

wa·pá·ha·ra you (plural) sing something! (21 + S + 1281),

áarakitha set it on fire! (43 + S + 1021 + 1282.2),

wa·pháhka motion! (21 + S + 1101 + 1282.2),

ké?etha don't dig! (43 + S + 1091 + 1282.2),

ko·wíhe·tha don't quit! (43 + S + 1021 + 1091 + 1282.2),

tá·t cross! (43 + S + 1282.1),

hú~hú·h come! (43 + S + 1282.1),

kíruph ~ kíruwika count it! (43 + S + 1282.1),

hací·thah~hací·thah~hací·tha·ka roast it! (43 + S + 1282.2).

The variation between the alternants of 1282 is in part morphemically ^{determined} and in part free, that among the sub-alternants (separated by the alternation sign) is free-- i.e. -zero, -h and -ka of point one vary freely, as do -a, -ah and -aka of point two. Alternant point one occurs when

suffix 1282 is immediately preceded by stems ending in weak vowels (see 2.1.2). Alternant point also occurs after certain other stems for which no generalization in terms of phonemic shape is possible. (Such stems which appear in our sample are listed in 4.5.) Alternant point two occurs when suffix 1282 is immediately preceded by other suffixes or by certain stems (listed in 4.5).

Suffix 1283, -ški emphatic, occurs in sequences of the type: 40 ± S + S ± 1071 ± 1201 + 1283:

ré·šaški there's nothing at all (43 + S + 1283),
 tó'ohi'i·ški it is always blue (43 + S + 1071 + 1283),
 hí·šicaki'i·ruški they are always bright red (43 + S + S + 1071 + 1201 + 1283).

3.3 Particular alternant^s of each of the person marking morphemes (the members of Class 40-90-110-1030-1110-1180) may be combined into sub-sets on the basis of their occurrence with particular themes or other affixes, or their position in respect to themes or other affixes. Each of these sub-sets (hereinafter to be called sets) contains three members--one alternate of each of the three morphemes. The alternates are numbered on the basis of their membership in these sets. Thus, the sets are:

Set Point One (.1)

wi- (41.1)

ri- (42.1)

i- (43.1)

Set Point Two (.2)

wi.- (41.2)

ri.- (42.2)

zero- (43.2)

Set Point Three (.3)

wa- (41.3)

ri- (42.3)

i- (43.3)

Set Point Four (.4)

wa- (41.4)

ri- (42.4)

zero- (43.4)

Set Point Five (.5)

wa- (41.5)

ra- (42.5)

a- (43.5)

Set Point Six (.6)

wa~wah- (41.6)

ra~rah- (42.6)

zero- (43.6)

Set Point Seven (.7)

w- (41.7)

r- (42.7)

zero- (43.7)

Set Point Eight (.8)

wi- (41.8)

ri- (42.8)

zero- (43.8)

Set Point Nine (.9)

-wa• (41.9)

-ra• (42.9)

-zero (43.9)

Set Point Ten (.10)

-wi (41.10)

-ri (42.10)

-zero (43.10)

The overlapping in set membership of particular alternates, as shown by the multiple numbering of those alternates, may be summarized as follows. For ol: the

alternate wi- occurs as a member of Sets Point One and Point Eight; the alternate wa- occurs as member of Sets Point Three, Point four, Point Five and Point Six; the alternates wəh-, wi·-, w-, -wa·, and -wi occur as members of only one set each, namely, Sets Point Six, Point Two, Point Seven, Point Nine, and Point Ten respectively.

For 62: the alternate ri- occurs as a member of Sets Point One, Point Three, Point Four, Point Eight; the alternate ra- occurs as a member of Sets Point Five and Point Six; the alternates rah-, ri·-, r-, -ra· and -ri occur as members of only one set each, namely, Sets Point six, Point Two, Point Seven, Point nine and Point Ten, respectively. For 63: the alternate i- occurs as a member of Sets Point One and Point Three; the alternate zero prefix occurs as a member of Sets Point Two, Point Four, Point Six, Point Seven and Point Eight; the alternate zero suffix occurs as a member of Sets Point Nine and Point Ten; the altern e a- occurs only as a member of Set Point Five.

The particular theme or class of themes with which each set occurs may be termed its invariant. The grammatical meaning or function of the set plus its invariant-- or rather, plus the class meaning of the invariant--may be termed the constant for that set.

Certain sets, as shown below, may be combined into sub-systems of isosemantic sets, having common constants.

Each of these larger sets is called a paradigm and assigned a letter. So also, those single sets having unique constants are called paradigms and assigned letters.

Paradigm A consists of sets Point One, Point Two, Point Three, Point Four, Point Five, Point Six and Point Seven, for which in sequence with noun themes, plus or minus other affixes which do not include ta- alienable (51), the constant is inalienable possessor.

The occurrence of a particular set with a particular theme or class of themes is stateable only in terms of lists. This means that it is impossible to obtain exhaustive generalizations in terms of the phonemic or morphemic constituents of the themes; however, one restricted generalization is possible: themes with initial /u/ or /u:/ occur only with Set Seven (w-, r-, zero-).

Examples of themes occurring with each set of paradigm A are listed below:

Set Point One:

wiwáki my chest, riwáki your chest, iwáki his chest.

Set Point Two:

wi·cí·ta my tail, ri·cí·ta your tail, eí·ta his tail.

Set Point Three:

wací m foot, ricí your foot, icí his foot.

Set Point Four:

wašáki my hand, rašáki your hand, šáki his hand.

Set Point Five:

wapíša my liver, rapíša your liver, apíša his liver.

Set Point Six:

wakiráʔaš my husband, rakiráʔaš your husband, kiráʔaš her husband.

Set Point Seven:

weʔe my food, reʔe your food, eʔe his food.

Paradigm B contains only Set Point Three, for which in sequence with ta- alienable (51) and noun themes, the constant is alienable possessor. As: wataʔáwá my land, ritaʔáwá your land, itaʔáwá his land.

Paradigm C consists of Sets Point One, Point Two, and Point Eight, for which in sequence with verb themes the constant is sensitive actor.

Examples of themes occurring with each set of paradigm C are listed below.

Set Point One:

wirú·hic I stand up, rirú·hic you stand up, irú·hic he stands up.

Set Point Two:

wi·xakác I move, ri·xakác you move, xakác it moves.

Set Point Eight:

wihapá·c I'm cold, rihapá·c you're cold, hapá·c he's cold.

Paradigm D consists of Sets Point Three, Point Five, Point Six and Point Seven, for which in sequence with verb themes the constant is active actor.

Examples of themes occurring with each set of paradigm D are listed below.

Set Point Three:

waré?ec I talk, riré?ec you talk, iré?ec he talks. (This is the only theme in the sample which occurs with Set Point Three as active actor.)

Set Point Five:

wa?áciwic I follow tracks, ra?áciwic you follow tracks, a?áciwic he follows tracks.

Set Point Six:

wahkárathic I step on it, rahkárathic you step on it, kárathic he steps on it.

watiríac I run, ratiríac you run, tiríac he runs.

Set Point Seven:

wú?uc I wound him, rú?uc you wound him, ú?uc he wounds him.

Paradigm E consists of Sets Point Two and Point Eight and the prefix 41 (first person) member of Set Point Seven, for which in sequence with themes plus Paradigm D (active actor) or suffixes 1281 or 1282 (imperative) the constant is goal.

Examples of themes occurring with each set of paradigm E are listed below.

Set Point Two:

wi·kúxtic he helps me (41.2 + 43.6 + T + 1271), ri·kúxtic he helps you (42.2 + 43.6 + T + 1271), kúxtic he helps him (43.2 + 43.6 + T + 1271).

Set Point Eight:

wikúc he gives me (41.8 + 43.6 + T + 1271), rikúc he gives you (42.8 + 43.6 + T + 1271), kú?uc he gives him (43.8 + 43.6 + T + 1271). (For the alternation of ku- and ku?u- see 2.5.)

Set Point Seven:

wúk give me! (41.7 + T + 1282). (This is the only example in the total corpus obtained of a member of Set Point Seven as goal, and here it occurs with an alternate of the theme which occurs only in this position--i.e. when preceded by 41.7 as goal--see 2.5.)

Paradigm F contains only Set Point Nine, for which in sequence with any theme plus suffixes 1021 or 1101 (causative) the constant is causative actor. As: cá·khiwa·c I make him wail (43.2 + T + 1021.2 + 41.9 + 1271), cá·khira·c you make him wail (43.2 + T + 1021.2 + 42.9 + 1271), cá·khe·c he makes him wail (43.2 + T + 1021.1 + 43.9 + 1271); kúxtihkiwa·c I made him help him (43.2 + T + 1101.2 + 41.9 + 1271), kúxtihkira·c you made him help him (43.2 + T + 1101.2 + 42.9 + 1271), kúxtihke·c he made him help him (43.2 + T + 1101.1 + 43.9 + 1271).

Paradigm G contains only Set Point Ten, for which in sequence with a theme plus suffix 1191 (future) the constant is future actor. As: cixíhkiwa·wic I'll make him jump (43.2 + T + 1101.2 + 41.9 + 41.10 + 1191.2 + 1271), cixíhkirs·ric you'll make him jump (43.2 + T +

1101.2 + 43.9 + 43.10 + 1191.2 + 1271), *cixínke·hic*
he'll make him jump (43.2 + T + 1101.1 + 43.9 + 43.10 +
 1191.1 + 1271).

Paradigms A, B, and C (inalienable and alienable
 possessor and stative actor) occur in decade position 40
 or 100, before or after Decades 10-60, 20-70, and 30-80
 (see 3.2 for examples).

Paradigm D (active actor) occurs in decade position
 100, preceded by Paradigm E (goal) in decade position 90,
 except in *warikúc* I give you (41.6 + 42.6 + T + 1271), in
 which Paradigm D precedes Paradigm E.

Paradigm E (goal) occurs in decade position 90
 (except in *warikúc* above), and always occurs in sequence
 with Paradigm D (active actor), Paradigm F (causative
 actor), Paradigm G (future actor), or suffix 1261 or 1282
 (imperative).

Paradigm F (causative actor) occurs in decade posi-
 tions 1030 and 1110, immediately preceded by suffix 1021
 (when Paradigm F is in position 1030) or suffix 1101
 (when Paradigm F is in position 1110).

Paradigm G (future actor) occurs in decade position
 1180, immediately followed by suffix 1191 (future).

The overlapping in paradigm membership of particu-
 lar sets may be summarized as follows. Set Point One
 appears in Paradigms A and C (inalienable possessor and
 stative actor). Set Point Two appears in Paradigms A, C
 and E (inalienable possessor, stative actor and goal).

Set Point Three appears in Paradigms A, B and D (inalienable possessor, alienable possessor and active actor). Set Point Four appears only in Paradigm A (inalienable possessor). Sets Point Five and Point Six appear in Paradigms A and D (inalienable possessor and active actor). Set Point Seven appears in Paradigms A and D (inalienable possessor and active actor) and the first person member appears in Paradigm E (goal). Set Point Eight appears in Paradigms C and E (stative actor and goal). Sets Point Nine and Point Ten appear in one paradigm each, Paradigm F (causative actor) and Paradigm G (future actor), respectively.

Chapter Four

Major Morpheme Classes

4.1 Affixes are listed in 3. together with sequences in which they occur. To be treated now are some such affix sequences in combination with other morphemes, namely stems. Such combinations are termed themes. A preliminary limitation to be noted is that suffixes are not included in themes, although certain prefixes may be. Themes, then, consist of one or two stems plus or minus prefixes.

The theme in Hidatsa is best defined in terms of its boundaries, i. e. adjacent morphemes which are not included in the theme. A theme may be bounded by prefixes of Class 40 (person markers) plus or minus prefix 51 (alienable possessor) and by suffixes. The theme is accordingly the morpheme span which occurs between the person marker (or the alienable prefix) and the first suffix (if the word includes a suffix). Any prefixes which occur after the person marker (or the alienable prefix) are thus included in the theme.

In the case of themes which do not occur with prefixes, the theme boundaries are the beginning of the word and either the first suffix or word final.

Major morphemes which can by themselves fill the theme space are termed stems.

4.2 Theme composition is of several types. The

constituents of a major theme may be: (1) a single stem, as atí house, or two stems, as wirí·hǵtia lake (wirí water plus ihǵtia big); (2) one or two stems preceded by a prefix, as i·pakíši towel (prefix 11 plus the stem pakíši wipe) and arupáruwari·ri society (prefix 31 plus the stems for short and walk).

All prefixes other than those of Classes 40 and 50 occur as parts of major themes. Prefixes of Classes 130 and 140 are always theme-included; prefixes of Classes 10-60, 20-70, 30-80, and 100-120 may or may not be--i.e. they may or may not be preceded by person markers.¹ (For specific prefix distributions and examples, see 3.2.).

Minor themes are composed of prefix plus prefix, as arúwa somewhere (prefix 31 plus prefix 21), wíhki myself (prefix 41.1 plus prefix 101).

The distinction between major and minor themes is parallel to that between major and minor morphemes or major and minor sentence types, the major ones being generally open, productive classes, the minor ones closed and non-productive classes.

4.3 Themes and stems may be classified as nouns, verbs or particles on the basis of their occurrence or non-occurrence with certain affixes.

Stems which occur with affixes of Class 40 (person markers) and with suffixes of Classes 1060 (reflexive) 1070 (durative and momentaneous), and suffixes 1281 and

1282 (imperative) are verbs. The following are examples of sequences in which the stems are defined as verbs.

wi·cákiriác I'm fussy (41 + S + 1061 + 1271),

cí·ri?i·c it's always yellow (43 + S + 1071 + 1271),

húara you (plural) come! (S + 1281),

húh come! (S + 1282).

Stems which occur with prefixes of Class 40 (person markers) but not with suffixes of Classes 1060 or 1070, or suffixes 1281 or 1282 are nouns. Examples of sequences in which the stems are defined as nouns are:

wá·ra my arm (41 + S),

wata?áwa my land (41 + 51 + S).

Stems which do not occur with affixes of Class 40 (person markers) are particles. Examples of sequences in which the stems are defined as particles are:

híri now (S),

ruwá·thari just that one (S + 1091 + 1222).

Affixes 1061, 1071, 1282 and 1282 and Class 40 constitute the only crucial affixes which serve--by frequent and exclusive association--to classify stems into three major classes (nouns, verbs, particles), as shown above. Other associations between affixes and stems remain to be noted; these others make either for overlapping classification--i. e. occur with more than one major stem class--or appear with limited numbers of members of one major stem class, or^{so} infrequently as to leave doubt as to what associations might be found if our Hidatsa corpus were expanded.

The full list of affix classes which appear with both nouns and verbs is as follows: 10. (instrumentive), 20. (indefinite person), 30. (agentive, future), 1000. (causative), 1010. (approximative), 1190. (future) 1200. (plural), 1250. (or, inclusive agentive), 1260. (quotative), and of Class 1270, suffixes 1272. (substantive), 1273. (as, while, at), 1274. (concessive), and 1275. (distributive).

Affix classes which occur with all three stem classes are: 1090. (negative), 1220. (demonstratives), 1230. (directional), and of Class 1270, suffixes 1271 and 1278 (predicators) and 1279 (interogative).

Class 1170 occurs with verbs and particles.

Prefix Class 50 (alienable possessor) occurs only with nouns, but not with all nouns, and hence is relevant to the definition of a sub-class of nouns.

Prefix Classes 100. (suus, inceptive) and 140. (instrumental) occur only with verbs, but with a limited number of verbs, and thus are primarily related to the definition of sub-classes of verbs.

Affixes of Classes 130. (completive) 1040. (iterative) 1050. (quantitative) and suffixes 1276. (because), 1277. (reportative), and 1283. (emphatic) occur only with verbs in our corpus, but their occurrence is so infrequent as to make classification uncertain. So also for suffix 1241. (in reference to time), which occurs with nouns and particles, but rarely.

4.4 Three major stem classes--nouns; verbs, and particles--are distinguished above; the same three classes are recognized for themes on the basis of the same criteria--i. e. occurrence or non-occurrence with the affixes listed above in 4.3.

The major class of a theme is observable from its initial constituent.

Themes which consist of a single stem belong to the class of that stem--i. e. as a theme, a noun stem is a noun theme, a verb stem is a verb theme, a particle stem is a particle theme.

Themes which are composed of two stems belong to the class of the first. Four such combinations appear in our corpus:

verb stem + verb stem = verb theme, as hí·šica·ki bright red,

Noun stem + noun stem = noun theme, as wírire water's edge, bank,

noun stem + verb stem = noun theme, as atí?ahu village

particle stem + verb stem = particle theme, as píra^{ki}htia one hundred.

Themes which consist of one or two stems plus prefixes are noun themes when their initial constituents are prefixes 11, 21, 31 or 32, as:

i·pakíši towel (11 + verb stem),

wa·apá·ri weed (21 + verb stem),

arupóhōruwi apple (31 + verb stem),

akuwa·híri worker (32 + 21 + verb stem),

wa·ʔi·ki·ka window (21 + 11 + 131 + verb stem).

Themes which consist of one or two stems plus prefixes are verb themes when their initial constituents are prefixes 101, 131, or 140, as:

kikéʔe scratch (101 + verb stem),

khi· drink up (131 + verb stem; cp. window above in which 131 occurs in a noun theme, whose initial constituent is prefix 21),

rahcaki bite off (142 + verb stem).

Themes which consist of two prefixes are particle themes. Such themes which appear in our sample are listed below:

wihki myself (41.1 + 101),

rihki yourself (42.1 + 101),

ihki himself, herself, itself (43.1 + 101),

arúwa somewhere (31 + 21),

akúwa someone (32 + 21).

4.5 Sub-classification of noun and verb stems and themes is based on their association with particular person-marking paradigms. (For the varieties of person marking paradigms, see 3.3).

Noun themes which occur with Paradigm A (inalienable possessor) are dependant, and always occur with a member of Paradigm A or with prefix 21 (indefinite).

The dependent noun themes which appear in the sample are listed below with the Paradigm A set with which they occur.

Set Point One (wi-, ri-, i-):

- iřha tooth,
- exf paunch,
- f mouth,
- fʔawahu inside of mouth,
- axf.řa spleen,
- fřta eye, (~ -řta which occurs with Set Point Three)
- fxhi forehead,
- fita face,
- fxpa wing,
- icáki staff, cane,
- ʔaká full brother,
- wáki chest,
- aruʔf place of fur, hair,
- ókci shadow,
- ikáti wrist.

Set Point Two (wi.-, ri.-, zero-):

- aruʔatá sore,
- aruʔhíru bones, skeleton,
- arupáruari.ri society,

- o·raxpí skin,
- akupá relatives,
- aká·ša ligament,
- cí·ta tail,
- cúata brain,
- šf·pa intestine.

Set Point Three (wa-, ri-, i-):

- ≈cí foot,
- cíʔawahu sole of foot,
- cíʔihpu end of foot, toe,
- xú body,
- šfithiru backbone,
- šíta back,
- rú·ri back,
- ráši tongue,
- rášpa shoulder,
- xuaxá knee,
- rašhá biceps,
- šapaxhé elbow,
- chú·pa shinbone,
- ríki leg,
- rá·ka young (ones),
- cú:ka younger brother,
- rá·ti brother-in-law,
- rú older sister,
- hú· mother,

-kú• grandmother,

-xúaʔiřha clothes,

-tú song.

Set Point Four (wa-, ri-, zero-):

-řáki hand.

Set Point Five (wa-, ra-, a-):

-á•pa neck,

-á•phiru back of neck,

-ára arm,

-púhka hat,

-rá hair,

-hkúxi ear,

-hpá ear (formerly used of animals only),

-pá nose,

-páta chest, trunk,

-atú father,

-pací throat, voice,

-á•pa neck,

-áci nipple,

-atákuta parent,

-ahtú head.

Set Point Six (wa- ~ wah-, ra- ~ rah-, zero-):

-ʔé•ri stomach,

-ráta heart,

-rakúa friend,

-kiráʔa husband.

Set Point Seven (w-, r-, zero-):

-óʔoke plume,

-ú·ši anus,

-éʔe food.

Noun themes which occur with Paradigm B (alienable possessor) are independent and may occur without Paradigm B (wa-, ri-, i-).

The independent noun themes which appear in our sample are:

awá land,

wa·píša grandchild,

šúka dog,

icú:wuška horse,

aruwía wife,

wirúxha ~ rúxha gun,

kí·ša younger sister (man speaking),

wáruxi ice,

xáxi pinto,

i·ʔihé paint,

wía older sister, woman,

áši ~ wáši robe, blanket,

akuʔiréʔe interpreter,

itá·hka old man, wife's father,

ú·waki bed,

f·puxi rattle,

irí blood,

f·tišhi halter (face + container),

fhkihe seed,
 ū·ka clay,
 ahí turnip,
 ášhu rope,
 ári road,
 ká·kša potatoes,
 wíripuxhi beer,
 hu·pá shoe,
 páruari·ri society,
 xúpa·ri medicine,
 cú:wa seed,
 ū:waca money,
 wúa fish,
 hopí· hole,
 á·peʔe necklace.

A few noun themes are doubly classifiable as dependent and independent. Two such themes appear in our sample; they are: á·ši which, as a dependent theme (with Set Point Five), is translated as horn and as an independent theme is translated as spoon; and píša which as a dependent theme is liver (person's) and as an independent theme is liver (animal's, for cooking).

Verb themes which occur with Paradigm C (stative actor) are stative. Such themes may occur with Paradigm C, Paradigm F (causative actor), or Paradigm G (future actor).

The stative themes which appear in the sample are listed below with the person marking set of Paradigm C with which they occur.

Set Point One (wi- ~ wih, ri ~ rih-, i- ~ ih-):

rú·hic stand up,
 pahtá· roll over,
 išfare· refuse, not allow,
 ihá·ri be finished,
 irá· yawn,
 iká·xti err,
 iwía cry,
 kíkua· listen, hear,
 ixpáti be full,
 kakhú·ri growl,
 kháci understand,
 kirušú·ki clean self,
 ráhca· be wise, be careful,
 kiké?e scratch self,
 kirúšia be naked,
 kikší dress up.

Set Point Two (wi·-, ri·-, zero-):

xaká move,
 rakčá ⁱ be heavy,
 kíši be well,
 púa swell, be swollen,
 paškía have kinky hair,

šikfa have curly hair,

táchi be thick,

tá·pa be soft,

kachí be cool,

kí·xha?icha· be a crow,

kúhka be ready (~ ikúhka which occurs with Set Point One),

cácki be vocally noisy (~ icácki which occurs with Set Point One),

cáki be good,

cawúhci be straight,

cawé· be hot,

cawe·?ate?e perspire,

šú·wa· be slow,

hí·ši be red,

haxíši be wet,

xé· be dripping,

hácki be tall,

xi?é· ~ xé· be old,

ihtía be big,

xí·pi be wrinkled,

xá·pi be thin,

xárxaxi be lean, be thin,

xátataka be swift,

xá·xi be spotted,

xiría itch,

xapá· be lost,

xí·ri be yellow,
 xúa fall down,
 akí be with, be in (belong),
 atá·ri menstruate,
 apá·ri grow,
 até?e come up, come out,
 achá be close,
 awakáša be scattered,
 aškúa be lame,
 irikí land,
 irí live,
 ichía be strong (also occurs with Set Point Eight),
 iríchi· stink,
 i·xá be dirty,
 i·káxi get into trouble,
 iripí be fat.

Set Point Eight (wi-, ri-, zero-):

hapá· be cold,
 rahkúpi be dented, be emaciated,
 hí·ta be fast in linear motion,
 kicipí drown, dive in,
 há·wi sleep,
 išía be bad,
 ópxia stop, pause,
 akhá·ka be late,
 iché· be awake, wake up, get away.

A few verb themes, as xaré· rain, occur only with third person actor (zero-); these may be classified as stative on the basis of the fact that they do not occur with Paradigm E (goal).

Verb themes which occur with Paradigm D (active actor) are active. Such themes also occur with Paradigm E (goal) and Paradigm F (causative actor) or Paradigm G (future actor).

The active themes which appear in our sample are listed below with the Paradigm D sets with which they occur.

Set Point Three (wa-, ri-, i-):
ré'e talk.

Set Point Five (wa-, ra-, a-):
áciwi follow tracks,
axúa hide,
rí·ti be hungry.

Set Point Six (wa- ~ wah-, ra- ~ rah-, zero-):

tiría run,
 kárathi step on,
 pahcáki cut,
 phe· eat up,
 páta· break, bust
 pía break,
 póʔošhi food, roll,
 ré· go,
 pá· announce, holler,
 pí bathe,
 pá·hi sing,
 té· die,
 tháki hurt,
 khí mean,
 rakí make shrill noise,
 kiwáxhu ask,
 tá·xa decoy,
 tá·ri cross,
 ratáxhi gnaw,
 kipa·táki close,
 kúreʔe hold, carry, keep,
 kikí·ri look,
 kirupáki put off,
 kirahpí get down,
 kíruki pack,
 kírata like,

kirahí get up,
 kiruxúki comb,
 káráthi step on,
 kárawi remember,
 kúxti help,
 kikhí· drink up,
 hí· drink,
 kía fear,
 kháta· push up (wood in fire),
 kú?u give,
 káráche· believe,
 kú·ci take, get, guess,
 kíruwi count,
 kikiškia consider, feel, try,
 kiwé?e tell,
 kíware· be surprised,
 kikú·cki learn,
 šúa spit,
 kišúa spit out,
 kará·xiši forget,
 kikuhá· call,
 kiwía turn back,
 kika·ki sew,
 kiwaké?e pray,
 kike·še· watch, care for,
 kikúa trap,
 kahé· give away,
 kirakaphí collect,

kirú· pick,
 kikhé· give back
 kíwiriki·ri go in, come in,
 ka·rí ask for,
 kiráši love,
 kuré· chase,
 kúaxi catch,
 kó·ši whistle,
 ké'e dig,
 kacá· blow at,
 khá· laugh,
 ruxúxhi break,
 kará· escape, elope
 kí· be home, be back, be around, be there,
 kí lie,
 cixí jump,
 cá:ki wail, mourn,
 ší·ši blow (dust, paint),
 hašák: split,
 hapáti saw,
 hacá· cut,
 hašišhi cut by incision,
 híštua rub,
 ruckíši wring,
 ruškí, kiruskí dig,
 he· do, make,
 húa cough,

háxpi sneeze,
hácake·ki have hiccoughs,
paxpí push off,
xapí lie down,
ríki hit,
arašáki cracked (by feet),
raharé· stand,
atá·ri come out,
ihkíríki throw,
iækúhpa· hate,
khpúa throw,
fka· look at,
ákakaši write,
aháhku be there,
aší walk, travel.

Set Point Seven (w-, r-, zero-):

ú?u wound, shoot,
ú?axpi shoot,
ú?ušia arrive,
ú?a· climb,
úa make fire,
é?e have,
oxpía stuff hole,
ó·pahti cork,
okháta· dress,
ošé· put in,
ó·cahti bury.

A few verb themes are doubly classifiable as stative and as active. Such themes in our sample are: kiré?e fly, which occurs as stative with set point two and as active with set point six, and kikšf dress up, which occurs as stative with set point one and active with set point six.

A few verb stems occur only with Paradigm F (causative actor) as actor. Such stems which occur in our sample are listed below, with the causative suffix with which they occur in parentheses.

kahúk(he·) deceive,

ri(he·) put down,

f·ri(he·) wear,

fkuck(he·) measure,

f·kua(he·) use,

š·ci(hke·) rest,

še· do, say (this is the only stem in our corpus which occurs with causative actor not preceded by a causative suffix).

A few verb stems are discontinuous, i.e., their form may be interrupted by other morphemes; specifically, actor prefixes may occur after an initial vowel of the stem. In listing stems we show this discontinuity by writing three dots after the initial vowel -- i.e., in the position in which the person prefix occurs. Many such stems occur in two alternants, one of which is discontinuous in respect to

first or second person actor and the other of which is continuous and occurs elsewhere. For the list of the two-alternant discontinuous stems which appear in our sample, see 2.5 (sub-type I). Those with a unique shape are listed below.

a...kšīa hold,

á...kakaši write,

a...hāhku be there,

a...šī walk, travel.

Verbs may be divided into two sub-classes on the basis of the alternant of suffix 1282 (imperative singular) with which they occur (for sequences in which 1282 occurs see 3.2).

In addition to verbs which end in weak vowels (2.1.2), alternant point one (-zero~h~ka) of suffix 1282 occurs with the following verbs in our sample.

phé• eat up,

kiwāxhu ask,

hf• drink,

kikhi• drink up,

kí?i pack,

še• say, do,

hu• come,

xé• drip,

kú answer,

ipahtá• roll over,

úʔu wound,

kúʔu give (this alternant as well as -uk, which occurs preceded by first person goal, see 2.5 sub-type IV).

The point two alternant (-a~ah~aka) of 1282, besides occurring in sequences in which another suffixes intervenes between 1282 and the stem, occurs with the stems in our sample listed below. The loss of morpheme final /a/ before morpheme initial /a/ (2.2.3) and the shortening of morpheme final long vowels before juncture (2.3.1) make arbitrary the choice of sub-class to which verbs ending in /a/ or /a·/ should be assigned. We chose to include them in the sub-class which occurs with alternant point two merely because the statement above that alternant point two occurs when 1282 is preceded by another suffix is possible only if one includes suffix 1091, the negative -- ending in /a/).

póʔošhi fold, roll,

pá·hi sing,

té· die,

ré· go,

kirahpí get down,

kuréʔe carry,

kiwéʔe tell,

kikú·cki learn,

kará·xiši forget,

kiwakéʔe pray,

kañé· give away,

ké?e dig,
kiré?e fly,
cácki be noisy,
ré?e talk,
híri do, make,
šé. do, say,
até?e come up, come out,
išiare. refuse, not allow,
pa. announce,
kháta. push up,
kará. escape,
xaká move,
kúnka be ready.

Footnotes for Chapter 4

1. Affixes which are not theme-included occur in the same position in respect to themes as to stems; hence, S (stem) in the sequence formulas involving such affixes in 3. is replaceable by T (theme).

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Chapter Five

TEXT

5.0 The text below, elicited in an attempt to discover the selection (distribution) of color terms in Hidatsa,¹ was recorded on tape during the 1953 Linguistic Institute. It was then played back to the informant for citation-form repetition and translation (which were also recorded on tape), following the procedure described in Obtaining a Linguistic Sample.²

The phonemic transcription given in 5.2 was made from the playback of the original rendition of the text. With it is presented a 'multiple stage'³ translation, in which the contour--the stretch of speech between 'double cross' and or 'double bar' juncture--serves as the unit of translation.

5.1 The orthographic devices and conventions used in the presentation of the text are discussed below.

In the phonemic transcription, contours are enclosed in brackets ([]). Contours ending in 'double cross' juncture are distinguished by a period (.) after the closing bracket, since 'double cross' juncture here coincides with morphological utterance final (specific suffixes). Closing brackets not followed by periods represent 'double bar' juncture. For purposes of cross-reference, contours are consecutively numbered, and the number of each precedes its opening bracket.

The informant's translation of each contour is given

(in quotation marks) immediately after phonemic transcription of the contour.

A morpheme index of each contour appears in brackets after the informant's translation. Affixes are represented by the numbers assigned to them in 3.1 and stems are represented by form class designations (N = noun, V = verb, P = particle) to which subscript numbers are added for reference to their appearance in the stem list (5.3).

The morpheme index of each contour is followed by a bracketed transutterance of the contour, in which the English equivalents of Hidatsa words (the informant's minimum citation forms) are given in the same order as the Hidatsa words and are separated by three dots (...). Sequences of such word-translations which are metaphoric or idiomatic in Hidatsa are enclosed in braces ({ }) and marked as equivalent to other English words or sequences by an equal sign (=); as [{ enemy... his grass } = yucca].

Redundencies (from the point of view of English) which appear in the bracketed English either as first equivalents of Hidatsa words or are created by the equation of sequences in braces with other sequence^s, are italicized (single underlined). Such italicized words or parts of words do not appear in later stages of the translation. (Because third person actor is frequently twice-marked in Hidatsa utterances--once by an affix and once by a noun or particle--to avoid having to mark its redundancy, I have adopted here the convention of not representing the

third person actor affix in translating verbs.)

The bracketed transutterances of contours are transformed into possible English phrases (which appear in parentheses). Where this transformation involves adding morphemes, the added morphemes appear in small caps (double underlined). ^{Where it involves} The substitution of one word for another one with partially overlapping meaning, as; is for are, both the word in the brackets and the word substituted for it in the parentheses appear in boldface (wavy underline). (I have adopted here the convention of translating verbs containing plural markers with are--and those without plural markers with is--or a form with English third person singular-s, since in Hidatsa the plural is frequently marked only in either the actor noun or in the verb (rather than in both); this necessitates frequent substitution of this type in the translation of verbs and additions of plural in nouns.) Boldface is also used here for the occasional necessary additions of English third person pronouns which are omitted from the brackets by the convention noted above.

Where the transformation involves reordering between brackets (i.e. the shift of one or more words from one contour group to another), the shifted sequences appear only in one parenthetical group preceded or followed by an arrow (< or >) indicating the direction of the contour in which they originally appeared. (See the parenthetical English of contour 9, below which includes the word which appeared in brackets in contour 8.)

5.2 1. [wa·ʔaruhí·ši], 'some things that are red', [21 + 31 + V₂₀], [something red], (something red);

2. [wá·ši·ʔi·xi+aruhí·šak], 'material that's red', [N₆₇ ... V₃₂ ... 43 + 31 + V₂₀ + 1278], [ξbalnket ... fuzzy} = material... is something red], (material is something red);

3. [wa·ʔakupóhoruwihke+hí·šiʔi·ruc]. 'apples are always red'. [21 + 32 + V₄₇ + 1101...43 + V₂₀ + 1071 + 1201 + 1271]. [apple... are always red]. apples are always

4. [hí·šéʔeruha·k+wíckapa·+orurakápakaʔaš+ruwahí·šiʔi·ruc]. 'and then roseberry flowers some are always red'. [P₁₈ ...43 + V₂₅ + 1278... N₇₁ + 1201... 31 + N_{36.2}+ 1201 + 1272...P₅₄ ...43 + V₂₀ + 1071 + 1201 + 1271]. [and... then ... roseberries... flowers... some... are always red]. (and then some roseberry flowers are always red).

5. [wa·píhirika+ruwaʔatíhi·šak], 'nowadays some houses are red', [N₆₅ + P₁₉ + 1223... P₅₄ ...N₉ ...43 + V₂₀ + 1278], [nowadays... some... house... is red], (nowadays some houses are red);

6. [icú·wuška·tirus+ruwahí·šak], 'some barns are red', [N₂₂ + N₉ + 1272... P₅₄ ...43 + V₂₀ + 1278], [barn ... some... is red], (some barns are red);

7. [hí·+wá·kataʔó·tiru+watá·ʔaru], 'and when the plums are ripe in the fall', [P₁₈ ...N₆₄ ... V₄₁ + 1251... N₆₇ + 1201 + 1251], [and... plum... when ripe... in falls], (and when plums are ripe in the fall);

8. [wá·kataš], 'the plums', [N + 1272], [plum⁷];

9. [hí·šicaki[?]i·ruški]. 'are always bright red'.

[43 + V₂₀ + V₁₄ + 1071 + 1201 + 1283]. [are always bright red]. (←plums are always bright red).

10. [híri+wa·[?]orutó[?]ohi+rawá·ha[?]aruk], 'now something blue if you want', [P₁₉ ... 21 + 31 + V₅₉ ... 43 ~ 42 + V₆₂ + 1201 + 1251 + 1278], [now... something blue... if you want], (now if you want something blue);

11. [wá·ši·[?]I·si+rúwa+tó[?]ohak], 'some material is always blue', [N₆₇ ... V₃₂ ... P₅₄ ... 43 + V + 1278], material... some... is blue], (some material is blue);

12. [wa·[?]orurakápakihke+wí·rire+hta+okuká[?]aš+rúwa+tó[?]o[?]hi[?]i·ruški]. (some violets are blue'. [21 + 31 + N₇₄ + 1101... N₃₆ + V + 1001... 32 + V₃₃ + 1272... P₅₄ ...43 + V + 1071 + 1201 + 1283]. [[?]flower... water edge along... those there[?] = violet... some.... are always blue]. (some violets are always blue).

13. [á:šire·hta+ká·[?]awaši[?]a], 'along the edge of creeks, they used to be there', [N₈ + V₅₁ + 1001... 43 + V₃₃ + 1201 + 1273... P₅₆ + 1201], [creek edge along... as are there... they], (as they are along the edges of creeks);

14. [hi·šé[?]eruha·k], 'and then', [P₁₈ ... 43 + V₄₅ + 1278], [and...then], (and then);

15. [wa·[?]orurakapákihke+wa·[?]i·tawúake[?]akakašihiša+tó[?]ohi[?]i·ruc]. 'flowers something similar to a bell--blue-bells--they're always blue'. [21 + 31 + N₃₆ + 1101...21

+ N₃₀ + N₄ + V₇₈ ...43 + V₅₉ + 1071 + 1201 + 1271].

[{flower... school bell like} = bluebell... are always blue].

16. [hi·wá·kataʔaš], 'and the plums', [P... N + 1201 + 1272], [and... plums...], (and plums);

17. [wá·šiʔi·tawá·kata+ruwaʔó·tithaakarū], 'the white man's plums some are always ripe', [N₆₈ ...43 + 51 + N... P... 43 + V₄₁ + 1091 + 1223 + 1251], [white man... his plum} = plum... some... when it is not ripe], (some plums when they are not ripe);

18. [rúwaʔó·ticakakšia+tóʔohiʔi·ruc]. 'not ripe-- them they are always blue', [P... 43 + V + V + 1278... P + 1201...43 + V + 1071 + 1201 + 1271]. [some...is good ripe ...they...are always blue]. (some are good and ripe they are always blue).

19. [hí·+wa·pihirika+caká·kara·ka+kúpa·caʔa+wa·+ aruʔó·šeraciwa+aʔápahicaʔa+šía+tó·hiʔi·ruc]. 'and nowadays eggplant well which they always plant it they're a little bigger they they're always blue'. [P...N + P + 1223... N₁₃ + N₄₉ ...43 + V₃₉ + 1101 + 1201...21 + 31 + 43 + V₄₀ + 1011 + 1273...43 + V₁ + 1201...P + 1201...43 + V + 1071 + 1201 + 1271]. [and...nowadays... {egg...smell like... when kind of plant it... are a little bigger} = eggplant ... they... are always blue]. (and nowadays eggplant are always blue).

20. [wi·k·átuahiša], 'grass green', [N₇₂ + V₆₀ + V₁₈], [grass green], (green);

21. [kúaʔa+mi·khá·š + kitúaru], 'those grass turns green', [P₃₈ + 1201... N + 1201 + 1272... 40 + 101 + V + 1251], [those...grasses...when turns green], (when grass turns green);

22. [kitóʔohicakiʔi·rucšio]. 'it always turns a good green'. [43 + 101 + V + V + 1071 + 1201 + 1271... P + 1201]. [always turn bright green...they]. (it always turns bright green).

23. [hí·+wí·re·pašiša+hi·šiaruwa+tóʔohicakak + hí·+ rúwa+tóʔohi^hšepak], 'and also the leaves they some are pretty green and some dark green' [P... N₇₃ + N₄₃ + 1272... P₂₉ ... P... P + 1201... P... 43 + V + V + 1278... P... P... 43 + V + V₅₇ + 1278], [and ... leaf ... also ... and ... they ... some ... is bright green ... and ... some... is dark green], (and also some leaves are bright green and some are dark green);

24. [hí·+ruwatóʔohirexiʔi·ruc]. 'and some are nile green'. [P ... P ... 43 + V + V₅₃ + 1071 + 1201 + 1271]. [and ... some ... are always light green]. (and some are always light green).

25. [hí·+atiʔí·ʔi·he+wi·khátuahišašehpihišak], 'and house paint some are dark green', [P ... N ... 11 + V₂₄ ... N + V + V . . . V + V + 1278], [and ... house ... paint ... green-ish... is darkish], (and house paint is darkish green);

26. [hi·ruwaré·xiʔi·ruc]. 'and some light green'. [P ... P ... 43 + V + 1071 + 1201 + 1271]. [and ... some ... are light]. (and some are light).

27. [hí·wa·píhirika+wa·ʔi·kí·kaʔaxúahke+wi·kha-túahi·
 ši·ruc]. 'and nowadays curtains are grass green', [P ...
 N + P + 1223 ... 21 + 11 + 131 + V₂₈ ... V₁₁ + 1101 ...
 N + 43 + V + V + 1071 + 1201 + 1271]. [and ... nowadays...
 {window ... cover} = curtain ... are always grass green].
 (and nowadays curtains are green).

28. [wa·ʔitú·xirušha + wi·khátuahi·ši·ruc] 'even
 dresses are green'. [21 + 43 + 51 + N₆₁ + 1251 + 1274...
 N + 43 + V + V + 1071 + 1201 + 1271]. [even dress
 are always grass green]. (even dresses are green).

29. [wa·ʔitú·xihtiarušha+wi·khátuahi·ši·ruc]. 'even
 coats are green'. [21 + 43 + 51 + N + V₂₆ + 1251 + 1274
 ... N + 43 + V + V + 1071 + 1201 + 1271]. [even coat...
 are always grass green]. (even coats are green).

30. [hí·wa·ʔokupóhoruwihke+šíarušha+ruwaʔó·ʔtithak],
 'and apples even those some are not ripe', [P ... 21 +
 32 + V + 1101 ... P + 1201 + 1251 + 1274... P ... 43 + V
 + 1071 + 1278], [and ... apple ... even they ... some
 ... is not ripe], (and even some apples that are not ripe),

31. [cá·ʔaru], 'raw', [43 + V₁₂ + 1201 + 1271], [when
 are raw], (when they are raw are green >),

32. [wi·khátua hi·ši·ruc]. 'are green'. [N + 43 +
 V + V + 1071 + 1201 + 1271]. [< are green].

33. [hí+|wá·kataʔiša+ó·titharuwi·khátuahi·ši·ruc].
 'and plums--and when they're not ripe they are green',
 [P ... N ... P ... 43 + V + 1091 + 1251... N + 43 + V + V
 + 1071 + 1201 + 1271]. [and ... plum also ... when not
 ripe ... are green]. (and plums also are green when not

ripe).

34. [híriwa·?aruwá·raki+cí·riwa·?i·ha?ac]. 'now colors they want yellow'. [P ... 21 + 31 + N₆₆ ... V₁₆ ... 43 + V₆₂ + 1201 + 1271]. [now ... color ... yellow ... they want]. (now they want yellow color).

35. [wa·?orukapakinke + orucí·riwáhtu?i·ruc]. [flowers there are always some yellow'. [21 + 31 + V + 1101 ... 31 + V ... V₆₃ + 1071 + 1201 + 1271]. [flower ... yellow ... there are always]. (there always are yellow flowers).

36. [atí?·?ihe+iša+orucí·rwáhtu?i·ruc]. 'house paints there is always some yellow', [N ... 11 + V ... P ... 31 + V + 1071 + 1201 + 1271]. [house ... paint ... also ... yellow ... there are always]. (there always are yellow house paints also).

37. [hí·+kakúwa·š+wa·hahtá?aru+cí·ri·ruc]. 'and squash broken open they are yellow', [P ... N₃₅ + 1201 + 1272 ... 21 + V₁₇ + 1201 + 1251 ... 31 + 43 + V + 1071 + 1201 + 1271]. [and ... squashes are ... when broken open ... are yellow]. (and squash are yellow when broken open).

38. [xí·ra·š+cí·ri?i·ruc]. 'squash blossoms they are always yellow'. [N₇₇ + 1201 + 1272 ... V + 1071 + 1201 + 1271]. [squash blossoms ... are always yellow]. (squash blossoms are always yellow).

39. [xí·ro·kí·kawa + wa·?orukápakihinke + šíací·ri·ruc]. 'looks like squash blossom flower, = tiger lilies they are always yellow'. [N ... 31 + 131 + V₂₈ + 1273... 21 + 31 + N + 1101 ... P + 1201 ... 43 + V + 1071 + 1201 + 1271]. [squash blossom ... one which looks like] = tiger lily...flower ... they are always yellow].

(tiger lilies are always yellow).

40. [hi·wá·kataš], 'and plums', [P... N + 1272],
[and ... plum], (and plums),

41. [hí·+ma·?okucí·rihka?áš], 'and oranges', [P ...
21 + 32 + V + 1101 + 1201 + 1272], [and,,oranges 7],

42. [ó·tseriha?a+cí·ri?i·ruc]. 'when they're almost
ripe they're always yellow'. [43 + V + V + 1171 + 1201...
43 + V + 1071 + 1201 + 1271]. [when are almost ripe ...
are always yellow]. (< and oranges when they are almost
ripe are always yellow).

43. [wa·?i·kí·ka+i·?axuahke·rušha+cí·rak], 'some
curtains are yellow', [21 + 11 + 131 + V ... 11 + V + 1101
+ 1251 + 1274 ... 43 + V + 1278], [curtain even ... is
yellow], (even curtains are yellow),

44. [apó·kakerušha+rúwa+cí·ri?i·ruc]. 'butterfly some
are always yellow', [N₅ + 1251 + 1274 ... P ... 43 + V +
1071 + 1201 + 1271]. [even butterfly ... some ... are
always yellow]. (even some butterflies are always yellow).

45. [híri+cí·rišehpihi·ša+wa?i·ha·c]. 'now orange they
want'. [P ... V + V + V ... 43 + V + 1201 + 1271]. [now...
{ yellow ... dark ... like ... }orange, ... they want].
(now they want orange).

46. [xí·?o·kíka·?áš+cí·rišehpi·irúški]. 'tiger lily
are orange color'. [n ... 32 + 131 + V + 1201 + 1272 ...
43 + V + V + 1251 + 1283]. [tiger lilies ... are orange].
(tiger lilies are orange).

47. [hí·+ma·píhirika], 'and nowadays', [P ... N + P
+ 1223], [and nowadays], (and nowadays).

48. [má·parapáwa·cí·rišehpi·hi·ša·c]. 'ribbon-its an orange color'. [21 + N ... 43 + V + V + V + 1201 + 1271]. [ribbon ... are orange]. (ribbons are ... are orange).

49. [o·ré·tatahi?i·rucši?a]. 'there's always a variety of colors'. [32 + V₅₂ + 1071 + 1201 + 1271 ... P + 1201]. [there are always a variety ... they] (there is always a variety of them).

50. [rúwací·rišéhpihišak], 'some of them are orange', [P ... 43 + V + V + V + 1278], [some ... is orange], (some are orange),

51. [rúwakí·rakci·ahí·šak], 'some of them are clear', [P ... 43 + V₃₇ + 1278], [some ... is clear like], (some are clear);

52. [rúwachó·hi·šak], 'some are dull', [P... 43 + V₁₅ + V + 1278], [some ... is dull like], (some are dull);

53. [hi·wá·?okucí·rihka?aš+cí·rišehpihí·ši·ruc]. [P ... 21 + 32 + V + 1101 + 1201 + 1272 ... 43 + V + V + V + 1071 + 1201 + 1271]. [and ... oranges ... are orange]. (and oranges are orange).

54. [hí·+wa·?i·kí·ka+i·axúaruwací·rišehpihi·ša?ac]. 'and curtains some they are orange', [P ... 21 + 11 + 131 + V ... 11 + V ... P ... 43 + V + V + V + 1201 + 1271]. [and ... curtain ... some ... are orange]. (some curtains are orange).

55. [hí·atíwahu+oruwá·raki+ruwací·rišehpihi·ši·ruc] 'and rooms the color some are orange' [P ... N ... V ... 31 + N ... P ... 43 + V + V + V + 1071 + 1201 + 1271]. [and ...

{ house ... inside } = room ... color ... some are orange]. (and some rooms are orange in color.

56. [wa·'íkito'opai·'axúáš+rúwací·rišehpihi·ši·ruc]. 'tablecloths some are orange'. [21 + N₂₇ + P₁₅ ... 11 + V + 1272 ... P ... 43 + V + V + V + 1071 + 1202 + 1271].

[{ table ... cover } = tablecloth ... some ... are orange]. (some tablecloths are orange).

57. [wa·'íta'i·pakísiš+ruwací·rišehpihi·ši·ruc]. 'face towels some are orange'. [21 + N₃₁ ... 11 + V₄₅ + 1272 ... P ... 43 + V + V + V + 1071 + 1201 + 1271]. [{ face ... wipe with } = face towel ... some ... are orange]. (some face towels are orange).

58. [wa·'itú·xihtiarušha+ruwací·rišehpihi·šak], 'coats some are orange', [21 + 43 + 51 + N + V + 1251 + 1274 ... P ... 43 + V + V + V + 1278], [coat ... some ... are orange], (some coats are orange);

59. [hi·wa·'itú·xihtiawa+akuxá·hi·šawa+cí·rišehpihi·ši·ruc]. 'and toppers are orange'. [P ... 21 + 43 + 51 + N + V + 1273 ... 32 + V₇₆ + V + 1273 ... 43 + V + V + V + 1071 + 1201 + 1271]. [and ... coat ... short one like ... are orange]. (and short coats are orange).

60. [hi·hu·párušhahíríka+cí·rišehpihi·šawáhtuc]. 'and even shoes there are some orange now-adays'. [P ... N₂₁ + 1251 + 1274 ... P + 1223 ... V + V + V ... 43 + V + 1271]. [and ... even shoe ... nowadays ... orange ... there is]. (and nowadays there are even orange shoes).

61. [ahpa·xá·š+óxa·tí·ruški]. 'clouds used to be white'. [N₃ + 1201 + 1272 ... 43 + V₄₂ + 1071 + 1201 + 1283]. [clouds ... are always white]. (clouds ... are always white).

62. [á·šihtiaš+ruwa?óxa·ti·ruški]. 'sheep some used to be white'. [N₇ V₂₆ + 1272 ... P ... 43 + V + 1071 + 1201 + 1283]. [sheep ... some ... are always white]. (some sheep are always white).

63. [hi·wíáš+rúwa?óxa·ti·ruc]. 'and rocks some are always white'. [P ... N₇₀ + 1201 + 1272 ... P ... 43 + V + 1071 + 1201 + 1271]. [and ... rocks ... some ... are always white]. (and some rocks are always white).

64. [hi·+atíruwa?óxa·ti?i·ruc]. 'and houses some are white'. [P ... N ... P ... 43 + V + 1071 + 1201 + 1271]. [and ... house ... some ... are always white]. (and some houses are always white).

65. [hí·?ihkáre·xaš+óxa·taka?i·ruški]. 'and stars white where they are/ wherever they used to be'. [P ... N₂₅ + N + 1272 ... V ... 43 + V + 1071 + 1201 + 1283]. [and ... star ... white ... where are always]. (and stars are always white where they are).

66. [hi·wi·té·rušharúwa?óxa·ti?i·ruc]. 'even buffaloes are sometimes white'. [P ... N₇₅ + 1251 + 1274 ... P ... 43 + V + 1071 + 1201 + 1271]. [and ... even buffalo ... some ... are always white]. (and even some buffalo are always white).

67. [icú·wuškaš+óxa·tak], 'horses are white', [N₂₂ +

1272 ... 43 + V + 1278], [horse ... is white], (horses
are white).

68. [raxpí+kairí·ckacka], 'the mahes sparkle',
[N₅₀ ... V₃₄], [hide ... sparkle] (the hides sparkle).

69. [ahkí·ruški]. 'they're there up and around',
[43 + V + 1071 + 1201 + 1283]. [where always are]. (where
they always are).

70. [wa·?itú·xa·š+rúwa?óxa·ti·ruški]. 'dresses some
used to be white'. [21 + 43 + 51 + N + 1201 + 1272... P
... 43 + V + 1071 + 1201 + 1283]. [dresses... some ...
are always white]. (some dresses are always white).

71. [wa·?orukápakihke+wá?iha?itawihká?orukápakihke+
óxa·ti?i·ruc]. 'blossoms of yucca flower used to be white'.
[21 + 31 + N + 1101 ... N ... 43 + 51 + N ... 31 + N +
1101 ... 43 + V + 1071 + 1201 + 1271]. [blossom ... ξ enemy
... his grass } = yucca... flower ... are always white].
(blossoms of the yucca flower are always white.)

72. [wit·ékataš+ší·ri?i·ruc]. 'buffaloes they are
brown color'. [N + V + 1272 ... 43 + V₅₈ + 1071 + 1201 +
1271]. [real buffaloes ... are always brown]. (real
buffaloes are always brown).

73. [icú·wuškaruška+ší·ri?i·ruc]. 'horses they are
brown'. [N + 1252 + 1274 ... 43 + V + 1071 + 1201 + 1271].
[horse ... are always brown]. (horses are always brown).

74. [wátá·ru?awá+kicótahkeru+ší·ri?i·ruc]. 'in the
fall when they start fading the earth is brown'. [N + 1251 ...
N₁₀ ... 43 + 101 + V + 1101 + 1201 ... 43 + V + 1071 +

+ 1201 + 1271]. [in fall ... earth ... when starts fading ... are brown]. (in the fall when the earth starts fading it is brown].

75. [hi·+wirus̄harúwaší·riʔi·ruc]. 'and even stones some/some more are brown'. [P ... N + 1252 + 1274 ... P ... 43 + V + 1071 + 1201 + 1271]. [and ... even rock ... some ... are always brown]. (and even some rockss are always brown).

76. [hí·ʔatíʔi·he+rúwaší·riʔi·ruc]. 'and house paint some are brown'. [P ... N + V ... P ... 43 + V + 1071 + 1201 + 1271]. [and ... house paint ... some ... are always brown]. (and some house paintss are always brown).

77. [hí·ʔawáʔaráxa+hí·+awáʔarupatíkua+šI·riʔi·ruc]. 'and coal and earth next to is brown'. [P ... N + V₆ ... P ... N ... 31 + V₄₆ + 1231 ... 43 + V + 1071 + 1201 + 1271] [and ... coal ... and ... earth ... which is next to ... are always brown]. (and coal and earth next to it are brown).

78. [hí·+wa·ʔarušha+ší·riʔi·ruc]. 'and even hair is brown'. [P ... 21 + N₄₈ + 1251 + 1274 ... 43 + V + 1070 + 1201 + 1271]. [and ... even hair ... are always brown], (and even hair is always brown).

5.3. The stems in the text above are listed below in alphabetical order (except for 15 tó?opa, 27 ríki and 78 híša). The numbers in parentheses following each stem are those of the contours in which it appears; the number which precedes each stem is that used (as a subscript of a form class symbol) for reference from 5.3.

The stems were transcribed from citation form dictation by the informant; hence, certain differences in shape appear in some of the forms; see 2.3 for such speed-conditioned variations.

1. a?ápahici be a little bigger (31)
2. ahkí be there (69)
3. ahpa·xí cloud (61)
4. ákakaši school, write (15)
5. apó·kake butterfly (44)
6. aráxa burn (77)
7. á·ši horn (62)
8. á:ši creek (13)
9. atí house (5, 6, 25, 36, 55, 64, 76)
10. awá earth, land (74, 77)
11. axúa cover (27, 43, 54, 56)
12. ca· be unripe, raw (31)
13. caká·ka bird (19)

14. cáki good, intensive (as the second member of a compound) (9, 18, 23, 24)
15. tó?opa four (56)
16. cí·ri be yellow (34, 35, 34, 35, 36, 37, 38, 39, 41, 42, 43, 44, 45, 46, 48, 50, 53, 54, 55, 56, 57, 58, 59, 60)
17. hahtá break open (57)
18. hí· and (4, 7, 14, 16, 19, 23, 24, 25, 26, 27, 33, 37, 40, 41, etc.)
19. híri now (5, 10, 19, 27, 34, 45, 47, 60)
20. hí·ši red (1, 2, 3, 4, 5, 6, 9)
21. hu·pá shoe (60)
22. icú: wuška horse (6, 67, 73)
24. í·he paint (25, 36, 76)
25. ihká star (65)
26. ihtía big (29, 58, 62)
27. ríki leg (56)
28. í·ka look (27, 39, 43, 46, 54)
29. íša also, again (23)
30. i·tawúa bell (15)
31. fta face (57)
32. í·xi fuzzy (2, 11)
33. ka be there (12, 13, 65)
34. kairí·ckacka sparkle (68)
35. kakúwa squash (37)
36. kápaki ~ rakápaki blossom (4, 12, 15, 35, 39, 71)
37. kí·rakci·a clear (51)
38. kú that (21)
39. kúpa smell (19)

40. ó·še plant (19)
41. ó·ti ripe (7, 17, 18, 30, 33, 42)
42. íxa·ti white (61, 62, 63, 64, 65, 66, 67, 70, 71)
43. pá leaf (23)
44. parapáwa· ribbon (48)
45. pakíši wipe (57)
46. patí be next to (77)
47. póhoruwi round (3, 30)
48. ra hair (78)
49. rá·ka young (ones) (19)
50. raxpí hide, skin (68)
51. ré· edge (12, 13)
52. ré·tatahi be different kinds (49)
53. ré·xi light (24, 26, 65)
54. rúwa some (4, 5, 6, 11, 12, 17, 18, 23, 24, 26, 30, 35, 36, 43, 44, 50, etc.)
55. šé?eruha· then (4, 14)
56. še· it, that (13, 18, 30)
57. šéhpi dark (23, 25, 45, 46, 48, 50, 53, 54, 55, 56, 57, 58, 59, 60)
58. ší·ri brown (72, 73, 74, 75, 76, 77)
59. tó?ohi blue, green (10, 11, 12, 15, 18, 19, 22, 23, 24)
60. túa green (20, 21, 25, 27, 28, 29, 32, 33)
61. ú·xi dress (29, 58, 59, 70)
62. wá·he ~ wá·?i·he want (10, 34, 45)
63. wáhtu there is (35, 60)

64. wá·kata plum (7, 8, 16, 17, 33, 40)
65. wa·pí day (5, 19, 47)
66. wá·raki color (34, 55)
67. watá· fall (7)
68. wá·ši white man (17)
69. wá·ši· blanket (2, 11)
70. wí rock (63, 75)
71. wickapa· roseberry (4)
72. wi·kha grass (20, 21, 25, 27, 28, 29, 32, 33, 71)
73. wí·ra· wood (23)
74. wí·ri water (12)
75. wi·té· buffalo (66, 72)
76. xá· short (59)
77. xí·ra squash blossoms (38, 39, 46)
78. hí·ša ~ hi·š like, similar to, -ish (15, 20, 25, 27, 28, 29, 32, 45, 46, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60)

5.4. In the translation below the parenthetical phrase-transutterances of Hidatsa contours of 5.2 are arranged in possible English sentences and the parentheses are replaced by punctuation marks.

Periods were placed after all contour translations which ended in 'double cross' juncture, because of its coincidence with utterance final morphemes. Semicolons or commas were placed after all other contour translations. No morphological or phonological criterion could be found in the Hidatsa for their use in the English; hence, the choice between them is entirely from the point of English. (A more thorough analysis of syntactic and intonational features might reveal criteria which would eliminate the combination of clauses into sentences which are stylistic awkward in English, as contours 50, 51, 52, 53 here, which yield by these criteria: Some are orange; some are clear; some are dull, and oranges are orange.

Paragraphing is done here on the basis of the subdivisions of the text created by interruption for eliciting. Where the first contour of any of these subdivisions is not syntactically related to following contours and is not a complete utterance, it appears as a title above the paragraph.

Something Red

Material is something red; apples are always red. And then some roseberry flowers are always red. Nowadays some houses are red; some barns are red; and when plums are ripe in the

fall, plums are always bright red.

Now if you want something blue, some material is blue; as they are along the edges of creeks, some violets are always blue. And then, bluebells are always blue. And plums, some plums when they are not ripe, some are good and ripe they are always blue. And nowadays eggplant are always blue.

Green

When grass turns green, it always turns bright green. And also some leaves are bright green and some are dark green; and some are always light green. And house paint is darkish green, and some are light. And nowadays curtains are green. Even dresses are green. Even coats are green. And even some apples that are not ripe, when they are raw are green. And plums also are green when not ripe.

Now they want yellow color. There always are yellow flowers. There always are yellow house paints also. And squash are yellow when broken open. Squash blossoms are always yellow. Tiger lilies are always yellow. And plums, and oranges when they are almost ripe are always yellow. Even curtains are yellow; even some butterflies are always yellow.

Now they want orange. Tiger lilies are orange. And nowadays, ribbons are orange. There is always a variety of them. Some are orange; some are clear; some are dull; and oranges are orange. Some curtains are orange and some rooms are orange in color. Some tablecloths are orange. Some

face towels are orange. Some coats are orange, and short coats are orange. And nowadays there are even orange shoes.

Clouds are always white. Some sheep are always white. And some rocks are always white. And some houses are always white. And stars are always white where they are. And even some buffalo are always white. Horses are white; the hides sparkle, where they always are. Some dresses are always white. Blossoms of the yucca flower are always white.

Real buffaloes are always brown. Horses are always brown. In fall when the earth starts fading it is brown. And even some rocks are always brown. And some house paints are always brown. And coal and earth next to it are brown. And even hair is always brown.

Footnotes to Chapter Five

1. The actual eliciting was done by Zellig Harris, using questions like 'Say everything you can say about red'.
2. C. F. Voegelin and Florence M. Robinett, Obtaining a Linguistic Sample, IJAL 20.89-100; the technique for recording citation-form repetitions and translations is described on page 96.
3. See footnote 1, page 4 for citation of published material on 'multiple stage' translation.