

# HOW TO USE YOUNG AND MORGAN'S 1987 *THE NAVAJO LANGUAGE*

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## 1 Introduction

Navajo is a Dene (Athabaskan) language spoken on the Navajo reservation in Arizona and New Mexico. Despite their wide geographic dispersion across North America, the Dene languages remain closely related. The languages, mostly spoken in small isolated communities, have been stable over at least a millennium. The Dene languages are closely related, with a common morphological structure; they belong to a distinct morphological type common in North America, with a rich and unusual verbal morphology. A Navajo verb can stand alone as a proposition.

First of all, the Navajo lexicon is primarily verbal. A Navajo verb word is an inflected complex of morphemes having propositional content. The verb stem is the rightmost element, preceded by a series of morphemes that are often characterized as prefixes. Lists of these prefixes are culled from fully inflected word forms, and they are organized into slots or 'positions' that perform a prosthetic role, the positions oversee the ordering of the proposed morphemes. These slots are numbered; this is the position class template (Y&M:g38). We will discuss the template in (Section 2.1). Connected to this fact, because of the richness of the inflectional and derivational morphology in a Navajo verb (or any Dene verb), for a given verb form, that verb is deeply embedded in a very dense neighborhood of related forms. Equally, the system of word formation is highly constrained. Simply listing the morphemes that occur in words and using this as a word formation device results in forms that far outstrip in number and form the actual word forms.

Young and Morgan's (Y&M) *The Navajo Language* (1980, 1987) is a complex and extraordinary opus on the structure of the lexicon of the Navajo language, in particular on the structure of the morphologically complex verb. Both of these volumes actually each contain two volumes: a grammar and a separate dictionary which is inter-related and cross-referenced to the







marking. The verbal morphology covers pages (g37-g139), beginning with a layout of the position class template and the assigned morphemes. Mode and aspect are covered in pages (g140-g205). The last half of the grammar consists of the 8 Appendices (Section 3).

## 2.1 The Position Class Template

In one common view of Dene word structure—the template view—the verb is a composite form from about 18-23 distinct morpheme positions. This results in an enormous degree of freedom. The resulting forms need all types of constraints to mimic actual occurring Navajo forms. Likewise, the template does not provide any information on several crucial aspects of word formation, such as the constraints on combinations, the inflectional classes for a given word, or any insight into the rich aspectual system.

Young and Morgan do not actually use the template in their word formation algorithm.

On (g38) is a chart of the position class template and the morphemes that are associated to each of the positions. They list seventeen separate positions (Table 3). This template is closely related to the **Base Paradigms** of the Mode conjugations, given on (g200) and the Model Paradigms of **Appendix I** (g206-437). The template differs from the paradigms in how they treat morpheme concatenation and morphophonemics, particularly the conjugation markers of Pos. VII and the subject pronouns of Pos. VIII. Specifically, the subject pronouns are treated as exponents on the four mode morphemes resulting in conjugational paradigms of the mode marked for person and number (section 3). Forms from these paradigms are one of the two principle parts of Y&M's lexicon and word formation model, and they are critical in the dictionary's ability to link a word to its inflected forms (section 4).

With respect to verb structure, the three principle domains in Navajo (and Dene) verb are called the 'disjunct', the 'conjunct' and the stem (3); these domains names are uncontroversial and widely used, though not defined.

(3) The three morphological domains in the Dene verb:

[ Disjunct # Conjunct - Stem ]<sub>wdVerb</sub>

sounds used (apart from the ‘post-positional stems’ of Ia) is much smaller than the full inventory (McDonough, 1990, 2003). One key reason for listing different versions of the same morpheme

### **2.3 Components of the Minimal or 'Core' Verb**

An important concept in the Navajo or Dene verb structure is the minimal or core verb, that is, the morphemes that carry the minimal morphosyntactic specification that is necessary for a well-formed verb. The core verb is an elegant and generative structure.

The core verb is comprised of the four morphemes bolded in Table 1, basically the last two syllables in verb word form. They appear in every verb. These syllables containing the minimal morpho-syntactic sp

are part of the *stem sets*; the stems sets are handled in the Appendix V, and we take this up in section xx. The modes have meanings, for discussion of the meaning and use of each mode, see the section on the modes in the grammar (g164-205). Y&M refer to these paradigmatic Base patter







Table 4. Appendices to Young and Morgan 1987, grammar section.

1	Word order	205-205b
2	<b>Appendix I:</b> <i>The model paradigms</i>	206-250
3	Appendix II: <i>The Classificatory verbs</i>	251-263
4	Appendix III: <i>Comparative Athapaskan Root inventory</i>	264-301
5	Appendix IV: <i>Stem Index</i>	302-317
6	<b>Appendix V:</b> <i>Root/ Stem/ Theme Index</i>	318-356
7	Appendix VI: <i>Noun Inventory</i>	357-435
8	Appendix VII: <i>The Adjectivals</i>	436-437

The **Appendices** provide explicit information, in the form of paradigms, charts and indexes, about the shapes of the morpheme alternations and concatenations as they occur in Navajo verbs (Appendices

imperfectives (g206-219) which cover all 4 imperfectives ( $\emptyset$ , n, s, yi). The greatest number of mode paradigms, in the whole of the Appendix, are the  $\emptyset$ -imperfectives ( $\emptyset$ IPFV) with 96 columns, the least are the s-imperfective (SIPFV) with a bare 6 columns (#121-

The columns are ordered starting from the outermost disjunct prefixes working in towards the conjunct prefixes. None of the information in these paradigms is available from template concatenations. (This fact points out the principle failure of the template in word formation; it does not address and cannot predict lexical patterns.)

Table 6. First 5 columns from the Model Paradigms from *Appendix I*, for the ØIPFV Mode (Y&M:g206); the 'C' refers to any consonant.

	Ø-IMPERFECTIVE/USITATIVE + DISJUNCT PREFIXES				
	1	2	3	4	5
PERSON/NUMBER	BASE PARADIGM	BASE PARADIGM +	BASE PARADIGM +	BASE PARADIGM +	BASE PARADIGM +
SINGULAR	yi- ~ w-peg	'a-Ib	'á- <sup>3</sup> Ib	Ca-Ib	Cáá = Ca-Ib + ná-Id
1.	yish	'iish	'ásh	Caash	Canásh
2.	ni	'ani	'ání	Cani	Cáání/Canání
3.	yi	'ii	'á	Caa	Caná
3o.	yi	'ii	'íí	Cai	Canáí
3a.	ji	'aji	'ájí	Caji	Cáají
3i.	'a	'e'e	'é'é	Ca'a	Cáá'á
3s.	ha	'aha	'áhá	Caha	Cánáhá
DUO-PLURAL					
1.	yii(d)	'ii(d)	'íi(d)	Caii(d)	Canéii(d)
2.	wo(h)	'oo(h)	'ó(h)	Caa(h)	Cáná(h)

At the bottom of each page in a separate section called 'LEXICAL EXAMPLES' are listed fully inflected word forms associated to the paradigm forms for each column, exemplifying the patterns of that column combining a form with a verb base (= 'classifier'+stem). These are fully inflected verb forms; they are conjugated in the pattern of that column and are a critical piece of the structure of the dictionary entries (section 4). In table 6 are the forms listed for the first 3 columns from the 'LEXICAL EXAMPLES'. The forms are given in the 1<sup>st</sup> person singular.

Table 7. Demonstration of fully inflected forms taken from Y&M's (g206) *Appendix I: Model Paradigms, LEXICAL EXAMPLES*.

Stem Classifiers	(Ø) - - (D)	LEXICAL EXAMPLES
	(") - - (L)	
1.	yishcha (Ø)(vi): cry weep	
	yishdl# (d)(vt): drink it	
	yishchin (!)(vt): smell it	
	yishdee! (l)(vt): eat PLO (berries)	
2.	yah 'iish'nééh (d)(vi): crawl inside	
	yah 'iishteeh (!)(vt): carr3cm BT 42 0042 An 42 f	

Adding the 'classifier'+stem unit (i.e. *øcha*) to the paradigm entry (*yish -*, *'iish -*, *'ásh -*) gives us a fully inflected word. Glosses of some forms are given in (8) for convenience. Note that the 'classifier'+stem is an element that is attached to the forms from the Model Paradigms (meanings

(9) The Iterative mode in [Appendix I](#) (g218)

	ITERATIVE MODE				
	(= ná-II + the corresponding ø- or yi-ø Usitative paradigm.)				
	1	2	3	4	7

Base Paradigm, and 2) they provide access to generalizations about types and distribution of prefixes to the different Modes that occur in Navajo.

At the foot of each page are full word forms numbered to correspond to the columns as examples of that Model Paradigm form with a ‘classifier’+stem element.

Here we turn to [Appendix V](#), on the *verb bases*, the ‘classifier’+stem elements.

### 3.3 Appendix V: Root / Stem / Theme Index

[Appendices III, IV](#) and [V](#) are on the Navajo roots and stems. [Appendix III](#) (g264-301) is a comparative index of Navajo verb roots to Proto and Pre-Proto Athabaskan, informed by the work of Leer and Krauss. [Appendix IV](#) is a stem index, “designated to facilitate identification of specific stems with the roots from which they are derived” (Y&M 1987:g302). [Appendix V](#), on the other hand, starts without an introduction and is one of the most important sections of the grammar.

Stems exhibit sets of internal alternations, called *stem shapes*. These sets of stems are types of paradigms., the alternations are classified by aspect and marked for valence. Sets of these stem shapes for any given stem are called *stem sets*. In this [Appendix](#), these stem sets are laid out with their attendant ‘classifiers’. Each entry begins with the ROOT, and then defines all the stem shapes and ‘classifiers’ sets associated to that stem, in groups of categories defined by mode and aspect, we will demonstrate this structure in this section.

There are two types of aspectual markin(nd,) - Q 0.24 0 0 0.240 (de) 4heenU nU 024 0 0 0.24 12 589.92 Am



are in CAPS, they are abstractions across the stem patterns (i.e. LEXEMES) (2) the stems are sound forms that appear as sets of stem internal alternations marked for aspect, 3) those alternations are associated with 'classifiers' in [Appendix V](#). A fourth point, related to the third, is unnecessary, it's the one made throughout; these patterns are culled from fully inflected word forms.

### 3.3.1 Stem Sets and the Verb Base

The second point of interest is found in the final column, the aspects associated with the stem base, here, MOM, SEM, REP and CON. These, and other, aspectual forms are associated with the *whole word forms*, in particular, with the combination of the verb base ('classifier'+stem) and the mode conjugations ( $\emptyset$ , n, s, yi) and any other aspectual forms and prefixes that may be in the verbal complex. (It is not the case that the mode of the Pos. VI prefixes and the stem must agree, as is sometimes stated.) Thus we will gloss \* $\emptyset$ taa as FUT.MOM, and so forth. The necessary

because of their association to functions that manipulate arguments of the verb, such as specifying verbs as transitive, passive, medio-passive or reflexive. Y&M note that the 'classifiers' stand in a 'complementary' relationship to each other,  $\emptyset \sim d, \sim l (d + )$ . However, Y&M also note that their functionality as valence markers falls into two areas, *valency*, where they mark argument structure, and *theme*, where they do not (Y&M:117).

For example, they note that the  $\emptyset$ -classifier is often considered a transitivizer or causativizer, as in (15), from Y&M.

(15) A productive alternation pattern with the  $\emptyset$  and ! classifiers

ROOT	VERB BASE	VERB FORM	
BÉÉZH	$\emptyset$ béézh	yibéézh <sub>CON</sub>	it's boiling
g319		yi	$\emptyset$ béézh
		$\emptyset$ IPFV.3S	INTRANS-'boil'
	!béézh	yi!béézh <sub>CON</sub>	he's boiling it
		yi	!béézh
		$\emptyset$ IPFV.1S	TRANS-'boil'

In fact, this 'classifier' does appear in many transitive constructions. However, it does not function as productive for three reasons. In (16) the verb form is not derived from an intransitive form with a  $\emptyset$ -'classifier'. Its transitivity function is limited, and it is not predictable where it may occur.<sup>8</sup>

(16) &-classifier in a non-derived transitive construction

ROOT      b-2 (nt)&,0.24 0 50 0 0 50 1451 -871 Tm 4 (z)1 Tf ( ) Tj ETQ 0.24 0 f [ (b-2 (nt)&,0.24 0 50 0 0 50 1458 -9



paradigms of [Appendix I](#), these mutation paradigms contain a great deal of information about the nature of the Navajo verb and study of these verb base patterns in conjunction with the aspectual specifications of the full word are a worthy use of time.

The idea verb theme is a looser notion that simply refers to the elements in a full word that are related to its lexical meaning, usually excluding agreement marking.

## 4 Word Formation in Y&M: the Dictionary

### 4.1 Fully Inflected Entries

Each verb entry in the dictionary is a fully inflected form, complete with agreement specification. In this rich a morphology, how does this work?

The Model Paradigms of [Appendix I](#) and the root entries in [Appendix V](#) are the basis in the dictionary entries. To start off, a dictionary entry for a verb form can be split into 4 parts (color coded below). In (20) is the dictionary entry somewhat randomly chosen to represent a common entry for a verb form, here *hánisht'ááh* "I arrived (via piloting a plane) to get (something)", reproduced from Y&M. The form is a fully inflected verb in the imperfective, 1<sup>st</sup> singular subject (IPFV.1S); the speaker is the pilot.

(20) Dictionary entry from Y&M 1987:d415 for *hánisht'ááh*

*hánisht'ááh*(I), *hánásht'ah*(R), *hání!t'a'*(P), *hádeesht'ah*(F),  
*háosht'ááh*(O) (!), to fly it after it (a plane), (i.e. to arrive  
 flying it for the purpose of getting it). Ha'át'íish% chidí  
 naat'a'í háíní!t'a', what did you come after?/ Bi! hánisht'ááh, to  
 take him after it by plane, to accompany him after it (with the  
 subject of the verb as pilot).  
 Naat'á

sentences, and italicized the English translation for readability in (22).

(22) Ha'át'íish% chidí naat'a'í háíní!t'a', *what did you come after?*

*Bi! hánisht'ááh, to take him after it by plane, to accompany him after it  
(with the subject of the verb as pilot).*

Naat'áanii ba'á!chíní



conjugations that the word will appear in. For instance, it is unlikely that the verb word will be appear in the n-



forms listed.)

- (30) bi'di-  
 bi - ' - d-  
 3INOBJ 3DOBJ 'extension'

The conjugation pattern for this verb word form is also found on the preceding page of the dictionary entry (d212). This tells us that the *bi'di-* prefix group and the verb words that take it, conjugate in the ØIPFV and si-perfective (SPFV) (g200). Since the iterative, future and optative are similar in all conjugations, for demonstration, in (31), from Y&M, the ØIPFV and SPFV forms for the *bi'di-* prefix group is reproduced, and thus for the word *bi'dishnééh*.

(31) bi'di-<sup>2</sup>

PERSON	IMPERFECTIVE	SI-PERFECTIVE
	Ø	Ø-Ł
1	bi'dish-	bi'dé-
2	bi'dí-	bi'díní-
3	yi'di-	yi'deez-
3a	bizh'di-	bish'deez-
3i	bi'di-	bi'dees-
1	bi'dii	bi'dee-
2	bi'doh	bi'disoo-

What is missing from (31), to make a full verb form, is the verb base \* *nééh* and the shapes that element takes in the different modes. These shapes, the stem sets, are 13 (r)99Młsséh



### 4.3 Irregular Patterns and Some Insights into the Aspectual Prefixes

Some words do not follow a regular pattern. These are handled inside their individual entries in the dictionary.

An example of an irregular patterns are the entries *sod'niisz h* and *sodiszin* relating to prayer (d689) glossed in (35a, b). First observe the different shapes of the stem. In both forms the stems are related (root Z))H), the 'classifiers' are the same (*l*), and the prefix group *sod-* are the same (35). They are different from each other in the stem shape (*zin* vs *z h*) and in the prefix groups they use (*sod'nii-* vs *sodi-*). In translation, the different between the forms is quite simple, 'praying' vs 'start to pray'. How is this coded in Navajo? How is this irregular? Does this provide any insight into the aspect system? Yes, to that last question.

(35a)	sod'niisz((h	'to start to pray,'	(d689)		
	so-	d-	'(a)ni-yi	is	*l-z h
	'relates to prayer'	'oral'	3O.INCH	IPFV.1S	VL-'pray'.IPFV.MOM
	lb	VIa	VIb.VIc	VII.VIII	

(35a)	sodiszin	'to pray, to say a prayer'	(d689)		
	so-	d-	is	*l-zin	
	'relates to prayer'	'oral'	IPFV.1S	VL-'pray'.IPFV.CON	
	lb	VIa	VII.VIII		

In [Appendix V](#), the root *ZIN* is listed as 'think, want', with a cross-reference to the root *Z))H* 'to think, want, be aware, keep, ...have faith', etc. (g354). There are thirteen verb base sets under the root *Z))H*; this root appears with all four 'classifiers'. Four stem sets show with the *l* 'classifier', including two related to praying, *lz h* and *lzin*, listed below in (36). Note that they are associated with distinct aspects, MOM vs CON.

(36) *Z))H* 'to think, want, be aware, keep, ...have faith' (g354)

IPFV	REP	PFV	FUT	OPT	Asp
lz((h	lz((h	lzin	lz(!	lzin	MOM
lzin	z((				

also above in (36).

(37) Partial inflectional paradigms for the word *sodiszin* –including the ‘classifier’ but minus the verb stem *zin* (d689).

IPFV	REP	PFV	FUT
------	-----	-----	-----

(continuative) and the other for the M



## Appendix: Leipzig Glossing Rules Correspondences

Linguists working within a language family often develop special terminology for phenomena in those languages that may be unique to this specific literature. Such is the case also in Athabaskan. In this Appendix, correspondences between Leipzig Glossing Rules and Y&M annotations are listed.

There are three tables: General, Mode, Aspect. General is for the general terms used in the dictionary. The Mode is for the main categories of Mode such as imperfective and perfective, repetitive, future, optative, that verbs are conjugated in, the last is the table of aspect, terms used in the grammar for the rich sets of aspectual categories, such as semelfactive and inchoative, that arise in the combinations of the stems and mode conjugations.

The first two columns are for Y&M terminology, they may use two forms, one an abbreviation of the other, as in *imp.* and *I* for imperfective. A full list of their abbreviations, many of which are not included here, and from which this is drawn is in YM 1987:g14.

The 3<sup>rd</sup> column is the Leipzig glossing rules (LGR) annotation, used in the glosses. The last column is the meaning.

### General terms

Y&M	Y&M ABBREV.	LGR	
classifier	cl	VL	valence
stem		STEM	
root		ROOT	
	Pos.		position/slot in template
disjunct		DSJ	
conjunct		CNJ	
	vt	TR	transitive
	vi	INTR	intransitive

**Aspect in Y&M**

<b>Y&amp;M</b>	<b>Y&amp;M ABBREV.</b>	<b>LGR</b>	
Momentaneous	Mom.	MOM	momentaneous
	NI	NIPFV	neuter imperfective
	NP	NPFV	neuter perfective
	Rep	RPT	repetitive
	Rev.	RVS	revisionary
	Iter.	IT	iterative
	Seriative	Ser.	SER
Completive	Sem.	SMLF	semelfactive
	Prog.	PRG	progressive
Terminative		COMP	
Stative		TERM	terminative
Prolongative		STAT	stative
Inceptive		PROL	prolongative
		INCP	inceptive
Inchoative	Inch.	NOML	nominalizer



