

1. Verb stems. There are three classes of verbs based upon stem similarity or dissimilarity in 1st, 2nd, and 3rd persons:

- I. Those alike in all persons
- II. Those with toneme changes between persons
- III. Those with other stem changes between persons

Class I verbs, those with stems alike in all persons, comprise about one-fourth the total number of verbs. Most are intransitive, though some are transitive. Were more of the stem structure known, transitivity affixes might explain why some are transitive. Class I verbs are listed on pages 22 and 23. A few examples are given here.

(i³)ṣhe¹ (be) tired¹ nte^{•4}to² (be) tall

1. Syllables in parenthesis are epenthetic. See Kalstrom-Pike, "Stress in the Phonological System of Eastern Popoloca" *Phonetica* 18:16-30 (1968), p.17.

(i ³)ṣa ²	stink	the ¹² nka ²	cough
(i ³)che ³	sing	khi ²⁴ i ²	breathe deeply
(i ²)nte ⁴	(be) tender	tʔi ³ thi ¹	throw out
ye ¹ to ³	(be) fat	tʔi ³ thi ¹² nta ²	spill
nta ² si ¹	(be) old	to ¹ nte ^{•2} to ²	tighten (around)

Class II verbs, those with stem toneme changes between persons, comprise the majority of verbs. They may be further classified as follows:

- a. 1st and 2nd persons differing from 3rd person
- b. 2nd and 3rd persons differing from 1st person
- c. 1st, 2nd, and 3rd persons differing from one another

Each of these verbs has at least one nonpredictable toneme change. Third person verb stem tonemes are considered basic to the changes for the following reasons:

- (1) Subject pronoun markers which fuse with the verb stem do not occur for 3rd person as they do for 1st and 2nd persons.
- (2) In soliciting verbs using either Popoloca or Spanish as a medium of communication the 3rd person verb stem (with 1st person plural pronoun enclitic) is given in response, barring other complicating factors. Likewise, in soliciting verbs with object markers, 3rd person to 3rd person is the standard form given.
- (3) Third person is the preferred verb form when speaking with respect. A 3rd person form has been extended to 1st person plural and even to 1st person singular. In polite speech 3rd person forms are also used in 2nd person address.

Within Class II certain patterns of nonpredictable toneme change are fairly obvious. Class IIa includes verbs with stem toneme changes 2-1, 2-3, 1-3;3-1 and 1-4;4-1, while Class IIb includes verbs with stem toneme changes 2-1 and 2-3. For examples, see pages 4, 5 and 6.

It appears that stems with more than one toneme change are two or more morphemes joined together each with its own nonpredictable toneme change, a nonpredictable toneme change plus a predictable toneme change, or changes caused by other complicating processes. In order to classify all toneme changes, predictable and nonpredictable, the following table has been devised.

Table 1 - Toneme Changes Within Verb Stem

0	1	2	3	4
no change	2→1	1→2	1→3	1→4
	3→1	3→2	2→3	2→4
	4→1	4→2	4→3	3→4

A class II (a, b, or c) verb in its dictionary entry may be followed by one or a combination of the numbers 0, 1, 2, 3 or 4. One number only indicates the toneme change in the first syllable.² If, for example, the number

2. Each syllable in Popoloca carries a tone or tone glide. In writing, the tone numbers mark end of syllables.

is 1 it means that whatever may be the first syllable toneme in 3rd person (2, 3 or 4) the change is to 1. A syllable with no change followed by a syllable with change is indicated by 0.

It should be noted here that 1 represents the highest toneme and 4 represents the lowest toneme. In glides of two tonemes, the higher toneme is considered basic to the change. Thus, the basic toneme of both 31 and 13 is considered to be toneme 1 and the toneme change replaces the glide. A few glides, however, seem to be basic in that they are retained when only the higher toneme would be expected to be retained. These are made explicit by the addition of a superscript number. For example, tʔe¹na²'buy', 1st and 2nd persons, retains the glide when a personal indirect object marker is added (e.g. tʔe¹na²?a⁺'I buy from him') even though such glides are usually lost, the higher tone only being retained. For this reason the tone change is written 1⁴, i.e. a 14 glide to be retained although an indirect object marker is added.

Class IIa1 includes verbs with toneme changes 2→1, 3→1, and 4→1. The only example in the present data of Class IIa01 is that of toneme change 2 1.

Class IIa1:

3rd	(2→1)	1st and 2nd	
thə ² hə ⁺		thə ¹ hə ⁺	fight
	(3→1)		
the ³ ya ¹		the ¹ ya ¹	search
thə ³ hə ²		thə ¹ hə ²	give over
tha ³ ka ¹		tha ¹ ka ²	light (fire)
thə ³ čə ¹		thə ¹ čə ²	earn
tha ³ ko ³		tha ¹ ko ³	teach
thi ³ to ² si ⁴		thi ¹ to ² si ⁴	change something
ti ³ to ² si ⁴		ti ¹ to ² si ⁴	sniff
	(4→1)		
tʔe ⁺ tə ⁴ ə ²		tʔe ¹ to ⁴ ə ²	order, command
ti ⁴ ki ⁴ te ²		ti ¹ ki ⁴ te ²	pour, sprinkle
tʔe ⁺ na ²	(4→1 ⁺)	tʔe ¹ na ²	buy

Class IIa01

3rd	(2→1)	1st and 2nd	
tʔa³šhe²		tʔa³šhe¹	go out
tʔi³tha²		tʔi³tha¹	learn
ta³ki²che²		ta³ki¹che²	take off (e.g. clothing)

Class IIa3 includes verbs with stem toneme changes 1→3 and 2→3.

3rd	(1→3)	1st and 2nd	
(i³)te¹		(i³)te³	dance
(i³)tʔe¹		(i³)tʔe³	twist (rope)
(i³)tʔi¹		(i³)tʔi³	play stringed instrument
tʔa¹hq¹		tʔa³hq¹	sweep
tʔo¹ya¹		tʔo³ya³	kill
čo¹²nta²		čo³nta²	have
tʔi¹če²		tʔi³če²	cut
čʔa¹tha³		čʔa³tha³	kick
tʔo¹³nti³		tʔo³nti³	bathe
tʔa¹no²te²		tʔa³no²te²	blow
tʔa¹ci¹²nca²		tʔa³ci¹²nca²	stop by, at

(2→3)

ko²ma¹		ko³ma¹	stare
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Class IIa4 includes verbs with stem toneme change 1→4.

3rd	(1→4)	1st and 2nd	
(i³)ce¹		(i²)ce⁴	grasp
(i³)tʔo¹		(i²)tʔo⁴	grind

Class IIb includes verbs with stem toneme changes 2→1 and 2→3.

Class IIb1:

3rd and 2nd	(2→1)	1st	
(i³)tʔi²		(i³)tʔi¹	drink
ni²šha³		ni¹šha³	talk
tʔa²³ya³		tʔa¹³ya³	get up

Class IIb01:

3rd and 2nd	(2→1)	1st	
tha³no²		tha³no¹	laugh, smile

Class IIb3:

3rd and 2nd	(2→3)	1st	
(1 ³)thi ²		(1 ³)thi ³	go, walk

As may be seen, there are many examples of patterns 1→3;3→1, and more examples could be given of these very common patterns. It is interesting to note the almost exclusive appearance of "i" in syllables with 1→3 toneme change and of "j" in syllables with 3→1 toneme change.

Toneme changes 1→2, 2→4;4→2 and 3→4;4→3 occur only in verb stems with changes in at least two syllables, and 3→2 occurs only with Class IIc verbs (those with different tonemes for all three persons).

As already noted, stems with more than one toneme change appear to be the result of the joining together of morphemes with differing tonal patterns or the result of adjustment of nonpermitted toneme sequences. As an example of automatic adjustment of nonpermitted sequences consider tha⁴ci⁴, 3rd person; tha³ci¹, 1st and 2nd persons, meaning 'pick up'. A common feature in Popoloca is that within the verb stem a toneme 3 becomes toneme 4 when followed by toneme 4. Hence, 3rd person of the verb stem just cited is basically tha³ plus ci⁴. To form 1st and 2nd persons the nonpredictable toneme change 4→1 is applied to the second syllable.

As an example of two nonpredictable changes and two predictable ones consider to¹ce¹che³ 3rd person, to⁴ce⁴che³ ~ to⁴ce⁴che² 1st and 2nd person, 'split'. Two similar verbs to¹çi¹hi² 3rd person, to³çi¹hi² 1st and 2nd persons, 'break' (as rope) and to¹çi¹t⁷o⁴ 3rd person, to³çi¹t⁷o⁴ 1st and 2nd persons, 'cut' demonstrate a change 1→3 in the first syllable. Applying this rule to to¹ce¹che³ the result would be *to³ce¹che³. However, there is a further nonpredictable toneme change in the second syllable, 1→4. By this change, 1st and 2nd persons would now be *to³ce⁴che³. The rule that toneme 3 preceding toneme 4 becomes 4 results in to⁴ce⁴che³. The fluctuation of toneme 3 with toneme 2 following toneme 4, a general feature of Popoloca,³

3. Toneme 3 following toneme 4 within the phonological word fluctuates between toneme 2 and 3. See Kalstrom-Pike, *ibid.*, p. 19.

results in the variant to⁴ce⁴che².

In spite of the morphophonemic rules which can be formulated to explain some of the toneme changes, for practical purposes we have chosen a dictionary classification of all verbs according to the same table of toneme changes (Table 1). Thus, verbs with toneme changes in two or more syllables are classified as in the following examples.

3rd	(1→2→3-1)	1st and 2nd	
IIa31	čo ¹ š ¹ i ²	čo ³ š ¹ i ¹	be acquainted with
	t ¹ i ¹ ² nka ²	t ⁷ i ³ nka ¹	knock, beat (as drum)
	tha ⁴ ci ⁴	tha ³ ci ¹	pick up
IIa33	ta ² ki ¹	ta ³ ki ³	nurse (as baby)
	ti ² nka ²	ti ³ nka ³	run
IIa24	tha ³ ka ³	tha ² ka ⁴	drop
IIa42	ša ² a ²	ša ⁴ a ²	carry in hand
IIa44	ta ² te ¹	ta ⁴ te ⁴	cut, saw

3rd and 2nd	(2-2 3-1)	1st	
IIb3l tho ² a ²		tho ³ a ¹	hold (e.g. wood); embrace

Class IIc includes those verbs whose stem tonemes are different in all three persons. The pattern 3 (3rd person)/1 (1st person)/2 (2nd person), (IIc1/2) is somewhat common, but appears to be caused by a few morphemes which occur frequently. For example: (i³)tha³ 'hand'.

3rd	1st	2nd	
(i ³)tha ³	tha ³ a ¹⁴	(i ³)tha ²	fold, weave

4. It seems that syllables are formed by reduplication of the preceding vowel with an upward glide and may be considered essentially a toneme glide: hence 3l, or l. With an added indirect object marker the glide is not retained: tha¹ʔa⁴ 'I will weave 3rd person's rope'.

tha ³ te ²	tha ¹ te ²	tha ² te ²	hit with hand, slap
tha ³ nka ²	tha ¹ nka ²	tha ² nka ²	pat tortilla; wear shoe

Emotional-type verbs can best be described as a group, IIc(0) 42/(0)013. Change occurs on the syllables nka²q² 'liver'.

3rd	1st	2nd	
ni ¹ nka ² q ²	ni ¹ nka ⁴ q ²	ni ¹ nka ¹ q ³	angry
to ¹ ce ¹ nka ² q ²	to ¹ ce ¹ nka ⁴ q ²	to ¹ ce ¹ nka ¹ q ³	is wanted
ʃa ¹ ʃi ² nka ² q ²	ʃa ¹ ʃi ² nka ⁴ q ²	ʃa ¹ ʃi ² nka ¹ q ³	remember

However, there are variations within this set not yet accounted for.

3rd	1st	2nd	
thi ² nka ² o ²	thi ² nka ⁴ q ²	thi ² nka ⁴ q ⁴	want

In the present data there are two other verbs whose stem tonemes differ in all three persons.

3rd	1st	2nd	
tʔi ² kq ⁴	tʔi ¹ kq ⁴	tʔi ² kq ³	see
ʃho ¹ a ²	ʃho ² a ¹²	ʃho ⁴ a	hold (e.g. child)

5. The verb 'hold' (e.g. child) seems to be derived from the verb tho²a² 3rd and 2nd persons, tho³a¹² 1st person 'hold' (e.g. wood) or 'embrace' and shares the same forms in the past and future tenses. Present tense forms however, when applied to a child mean to love or hold in one's heart; hence ʃho¹²a², ʃho³a¹², ʃho⁴a² to express holding temporarily. There is also a passive form tho²a¹² 'to be loved' for all three persons.

Class III includes those verbs whose stems differ apart from tone.

3rd	1st and 2nd	
(i ³)t ² e ³	(i ³)te ¹	throw
tha ³ k ² e ³	tha ³ ke ¹	hit (with); put
the ³ hoa ²	the ¹ çi ³	sleep
thi ³ hi ²	tha ³ sa ¹	arrive
3rd and 2nd	1st	
(i ³)č ² e ²	(i ²)t ² a ⁴	do (work)
č ² e ¹ na ²	t ² a ¹ na ²	make

(Continued on next page.)

3rd	1st	2nd	
(i ³)ne ²	(i ³)ne ¹	(i ³)nte ²	eat

2. Personal Subject Markers. There are nine personal pronouns.

3rd	he ² ?e ² č ² a ¹	- he
	he ² ?e ² tha ³	- she
	he ² ?e ² si ¹	- they (sometimes used for one person)
1st	ha ³ ?a ³ (na ²)	- I (used with adults; of least respect)
	ha ³ ?a ³ na ¹	- I (used with equals)
	he ² ?e ² ni ²	- we, or I (used with elders; highest respect)
2nd	ha ² ?a ²	- you, sing. (used with equals)
	ha ² ?a ² ra ¹	- you, sing. (adults to children; least respect)
	ha ² ?a ² nta ¹	- you, pl. (used with all groups; respect)

The demonstrative pronouns, he²?e² 3rd person, ha³?a³ 1st person, and ha²?a² 2nd person, together with the more specific enclitics form subject or object personal pronouns. ha²?a² and ha³?a³ occur with or without enclitics. Without enclitics their demonstrative quality may appear as emphasis; thus ha³?a³, emphatic 'I', a nonrespect form.

The pronoun enclitics may also follow nouns and verbs. In the absence of a pronoun enclitic (na² occasionally occurs with ha³?a³), verb stems are marked for subject as follows:⁶

6. There is no example of the following. Probably more data would eliminate these exceptions.

1st person	-∅ following	-a ² , -e ⁴ or -e ⁴
	-a following	-i ² , -o ³
	-a ² following	-o ¹
2nd person	-a ² following	-i ⁴ , -o ¹
	- ² following	-a ³ , -a ⁴ , -e ³
	a with - ² replacement	with -i ³ , -i ⁴
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1st person: (ha ³ ?a ³)	-∅ following	-a ² , -a ³ , -a ⁴
		-e ² , -e ³ , -e ⁴
	- ² following	-a ¹
		-e ¹
	-a following	-i ² , -i ³ , -i ⁴
		-o ² , -o ³ , -o ⁴
	-a ² following	-i ¹
		-o ¹
2nd person: (ha ² ?a ²)	-∅ following	-a ²
		-e ²
	- ² following	-a ¹ , -a ³ , -a ⁴
		-e ¹ , -e ³ , -e ⁴
	- ² replacement	-a ³ , -a ⁴ ?

7. Though one might expect toneme 2 replacement with vowel -e, and -a with toneme 2 replacement following vowel -o, no examples have been found.

-a following	-i ²
	-o ²
-a ² following	-i ¹ , -i ³ , -i ⁴
	-o ¹ , -o ³ , -o ⁴
-a with - ² replacement	-i ³ , -i ⁴ ?

If the stem vowel is nasalized the vowel of the marker is also nasalized.

It may be noted that 1st and 2nd person forms without enclitics must end in vowel -a or -e, predominately vowel -a, and that 1st person forms end in toneme 2, 3 or 4, while 2nd person forms end in toneme 2. From this one might conclude that 2nd person subject marker is basically -a² and 1st person subject marker is -a³ and that these markers have been fused to the verb stem.

Since the fused 1st and 2nd person markers overlap and the stems for 1st and 2nd person are often the same, the pronouns must often be utilized to avoid ambiguity.

3. Personal Object Markers. There are no direct object markers for 1st and 3rd persons. Second person (ha²?a²) direct object marker is identical with 2nd person (ha²?a²) subject marker -a², but may vary slightly when fused to stems. For example, č²a³tha³² 'I kick you' contrasts with č²a³tha² 'you kick', 1st and 2nd person stem being č²a³tha³. However, such contrasts are difficult to find because of the overlap of 1st and 2nd person subject markers when fused to the verb stem and this further overlap with 2nd person direct object marker. In all other cases, where there is no direct object marker, the pronoun enclitics are used to designate person as object.

There are seven interpersonal indirect object markers which more often than not direct the action of the verb toward something pertaining to another. With certain verbs such as give or hit, love, call, fear, their connotation is that of direct object though they may be construed as indirect object markers with the meaning give something to someone or give a stick to someone (hit), do something for another (love), call something to someone, or fear another's power. They are as follows:

Stem	IO			
2nd or 3rd	1st ⁸	- ³ na ³	~	-na ²
1st	2nd ⁹	- ² a ¹	~	- ² a ⁴
3rd	2nd ¹⁰	- ² a ²	~	- ² a ⁴
1st	3rd	- ² a ⁴		
2nd	3rd ¹¹	- ² e ¹		
3rd	3rd	- ² e ²	~	- ² e ⁴

8. -na² is probably a variation of -³na³. When preceded by a toneme 4 (stem toneme 4, or stem toneme 3 permuted to 4) the contrastive toneme 3 of consonant n does not actuate an upglide. Toneme 3 following toneme 4 within the phonological word fluctuates between toneme 2 and 3. See Kalstrom-Pike, *ibid.*, pp. 19 and 20. (-na² is not to be confused with enclitic na².)

9. -²a¹ becomes -²a¹² when ha³?a² (without enclitic) is indirect object. Verb forms for 1st person ha³?a³ (na¹) to 2nd person ha²?a² (ra¹) or ha²?a² (nta¹) show considerable variance between -²a¹ and -²a⁴. With some verbs only one is permissible; with others either is acceptable.

10. -²a⁴ is rare for 2nd person, ha²?a², indirect object. Occasionally, usually when the 3rd person final stem toneme is 3, the indirect object marker for 2nd person, ha²?a²(ra¹) and ha²?a² (nta¹) is -²a⁴ instead of -²a².

 11. $-?e^1$ becomes $-?e^2$ when $ha^2?a^2$ (without enclitic) is subject.

Indirect object markers, with the exclusion of $-^3na^3$ which is always nasal, may be oral or nasal, being conditioned by the preceding stem vowel. These indirect object markers are fused to the verb stem corresponding to the subject: 3rd person verb stem when 3rd person is subject, 1st person verb stem when 1st person is subject, and 2nd person verb stem when 2nd person is subject.

As mentioned before, toneme 3 followed by toneme 4 within the phonological word permutes to toneme 4. Verb stems terminating in basic toneme 3 automatically permute to toneme 4 when fused to indirect object markers,¹²

12. Though this permutation appears to be automatic it is possible that a referential marker $-?V^4$, even though fused with personal pronoun markers $-e^2$ 3rd person, $-^3na^3$ 1st person, and $-a^2$ 2nd person to form indirect object markers, causes preceding stem toneme 3 to drop to 4. The following is an attempt to reconstruct the formation of the indirect object markers and to show the effect of the referential marker upon stem toneme 3.

3rd \rightarrow 3rd

Stem 1,2,4	+ $-?V^4$	+ $-e^2$	= Stem 1,2,4	+ $-?e^2$
Stem 3	+ $-?V^4$	+ $-e^2$	= Stem 4	+ $-?e^4$

3rd \rightarrow 1st

Stem 1,2	+ $-?V^4$	+ $-^3na^3$	= Stem 1,2	+ $-^3na^3$
Stem 3,4	+ $-?V^4$	+ $-^3na^3$	= Stem 4	+ $-na^2/3$

3rd \rightarrow 2nd, $ha^2?a^2$

Stem 1,2	+ $-?V^4$	+ $-a^2$	= Stem 1,2	+ $-?a^2$
Stem 3,4	+ $-?V^4$	+ $-a^2$	= Stem 4	+ $-?a^2$

1st \rightarrow 3rd

Stem 1,2	+ $-?V^4$	+ $-e^2$	= Stem 1,2	+ $-?a^4$
Stem 3,4	+ $-?V^4$	+ $-e^2$	= Stem 4	+ $-?a^4$

1st, $ha^3?a^3 \rightarrow$ 2nd

Stem 1,2,3,4	+ $-?V^4$	+ $-a^2$	= Stem 1,2,3,4	+ $-?a^2(?)$
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2nd \rightarrow 3rd

Stem 1,2,3,4	+ $-?V^4$	+ $-e^2$	= Stem k,2,3,4	+ $-?e^4(?)$
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2nd \rightarrow 1st

Stem 1,2	+ $-?V^4$	+ $-^3na^3$	= Stem 1,2	+ $-^3na^3$
Stem 3,4	+ $-?V^4$	+ $-^3na^3$	= Stem 4	+ $-na^2/3$

Vowel of $-?V$ may be either $-e$ or $-a$ but is most likely $-?a$ for $1 \rightarrow 3$ referential.

Though only a cursory comparative study of noun and verb structure has been made there is an obvious similarity of toneme changes within possessive nouns to those within verbs marked for indirect object. This suggests that referential marker tonemes 1 and 4 indicate possession, thus explaining the tendency of the indirect object marker to direct the action of the verb to something pertaining to another.

with the exception of those markers with toneme 1, 1st to 2nd person $-^2a^1$ and 2nd to 3rd person $-^2e^1$. Further permutation of toneme 3 to 4 ensues whenever a stem toneme 3 precedes a nonbasic toneme 4.

The alternate 3rd person to 3rd person indirect object marker $-^2e^4$ occurs only when verb stems ending in toneme 3 which automatically permutes to 4. $-^2e^2$ occurs with stems ending with 1, 2, or basic 4.

Alternate form $-na^2$, 1st person indirect object marker, occurs following toneme 4, whether basically verb stem toneme 3 or 4.

Occasionally there are exceptions to this pattern. $\check{š}a^2\check{š}e^1$, 'smell sweet', takes 3rd person to 3rd person indirect object marker $-^2e^4$ and rare 3rd person to 2nd person indirect object marker $-^2a^4$ with a glide to toneme 2 for 2nd person ha^2a^2 , while $(i^3)the^3$, 'borrow', does not permute to 4 and takes 3rd person indirect object marker $-na^2$.

It may be noted that 1st and 2nd persons, though often with like stems, have distinct indirect object markers. Persons 1 and 3 usually have dissimilar stem tonemes as well as distinct markers except for the similarity of 1st person to 3rd person $-^2a^4$ to 3rd person to 3rd person $-^2e^4$ or 3rd person to 2nd person $-^2a^4$. Second and third persons, however, occasionally have like stems and similar indirect object markers distinguished mainly by vowel $-e$ in 3rd person indirect object forms and vowel $-a$ in 2nd person indirect object forms.

3rd → 3rd	$-^2e^2/4$	2nd → 3rd	$-^2e^4$
3rd → 2nd	$-^2a^2/4$	1st → 2nd	$-^2a^1/4$
1st → 3rd	$-^2a^4$		

Accentuating these vowel distinctions, final stem vowel $-a$ of 3rd person assimilates to $-e$ when fused with 3rd person to 3rd person indirect object marker $-^2e^3/4$, and final stem vowel $-a$ of 2nd person assimilates to $-e$ when fused with 2nd person to 3rd person indirect object marker $-^2e^1$. When 1st person final stem vowel $-e$ (usually the stem vowel is $-a$) precedes 1st person to 3rd person indirect object marker $-^2a^4$ or 1st person to 2nd person indirect object marker $-^2a^1/4$ it frequently, but not always, assimilates to vowel $-a$ of the indirect object marker. $-^2e$ following stem vowel $-i$ assimilates to $-^2i$. No change in the indirect object markers occurs following stem vowel $-o$.

Toneme and vowel changes are illustrated in the following three examples.

Chop			
(someone's wood)	3rd Subj.	1st Subj.	2nd Subj.
Verb Stem	$t^2i^1\check{c}e^1$	$t^2i^3\check{c}e^1$	$t^2i^3\check{c}e^2$
3rd I.O.	$t^2i^1\check{c}e^2e^2$	$t^2i^3\check{c}a^2a^4$	$t^2i^3\check{c}e^2e^1$
1st I.O.	$t^2i^1\check{c}e^2na^3$		$t^2i^3\check{c}e^2na^3$
2nd I.O.	$t^2i^1\check{c}e^2a^2$	$t^2i^3\check{c}a^2a^1$	

call			
(to someone)	3rd Subj.	1st Subj.	2nd Subj.
Verb Stem	$t^2e^1ya^3$	$t^2e^3ya^3$	$t^2e^3ya^3$
3rd I.O.	$t^2e^1ye^4e^4$	$t^2e^4ya^4a^4$	$t^2e^3ye^3e^1$
1st I.O.	$t^2e^1ya^4na^2$		$t^2e^4ya^4na^2$
2nd I.O.	$t^2e^1ya^4a^2$	$t^2e^3ya^3a^1$	

pick up (someone's)	3rd Subj.	1st Subj.	2nd Subj.
Verb Stem	tha ⁴ ci ⁴	tha ³ ci ¹	tha ³ ci ¹
3rd I.O.	tha ⁴ ci ⁴ ?i ²	tha ³ ci ¹ ?a ⁴	tha ³ ci ¹ ?i ¹
1st I.O.	tha ⁴ ci ⁴ na ²		tha ³ ci ¹ na ³
2nd I.O.	tha ⁴ ci ⁴ ?a ²	tha ³ ci ¹ ?a ¹	

By employment of certain of these indirect object markers in specialized ways, two other types of verbs have developed, one type with subject focus, and one type with indirect object focus. Usually the markers have become an integral part of these verbs so that stem and marker cannot be separated and their relationship can only be inferred.

Verbs with subject focus may be 1st, 2nd, or 3rd person verb stem with 3rd person to 3rd person indirect object marker only. These verbs either do not permit a stated object, as tha²te¹?e² 'reply', or require the personal pronouns in lieu of the more specific indirect object markers to express ha³?a³ 'I' and ha²?a² 'you'.

3rd → 3rd	1st → 3rd	2nd → 3rd	
čq ¹ ?e ²	čq ⁴ ?a ⁴	čq ³ ?e ¹	wait
če ¹ ?e ⁴	ča ¹ ?a ⁴	če ¹ ?e ¹	follow
che ² ?e ²	cha ² ?a ⁴	che ² ?e ¹	look
ti ² ?i ²	ti ⁴ ?a ⁴	ti ² ?i ¹	hear
tha ² te ⁴ ?e ²	tha ¹ ta ⁴ ?a ⁴	tha ¹ te ⁴ ?e ¹	reply

The indirect object marker is so inseparable from the verb stem that together they seem to constitute a new stem. Note the probable formation of 'overhear', 'eavesdrop' where another layer of indirect object markers is added to a verb with subject focus.

3rd	1st	2nd	
(the) t ² ?i ²	(the ¹) t ⁴ ?i ⁴	(the ²) t ² ?i ²	(be) listening
-?e ²	-?a ⁴	-?e ¹	
ti ² ?i ²	ti ⁴ ?a ⁴	ti ² ?i ¹	hear (subj. focus)
-?e ²	-?a ⁴	-?e ¹	
tie ² ?e ²	tia ⁴ ?a ⁴	tie ¹ ?e ¹ (²)	overhear, eavesdrop

Verbs with indirect object focus have an indefinite stem with no variance between persons except that of final stem vowel -e and -a before indirect object markers. These verbs fall into two sets: one set which is essentially stative in meaning and may or must occur with to¹-, ko¹-, co⁴- tense prefixes, and another set which has passive meaning,

Stative:

3rd	1st	2nd	
se ¹ ?e ²	se ¹ na ³	sa ¹ ?a ²	(be) lazy
ni ¹ ?i ²	ni ¹ na ³	ni ¹ ?a ²	(be) ill
tq ¹ ?e ²	tq ¹ na ³	tq ¹ ?a ²	happen to
no ² ?e ²	no ² na ³	no ² ?a ²	know
ki ² ?i ²	ki ² na ³	ki ² ?a ²	(be) chilly

nto ² ?e ²	ntoa ¹³ na ²	ntoa ¹⁷ a ²	(be) delicate
to ¹ ša ² kq ¹ ?e ²	to ¹ ša ² kq ²³ na ³	to ¹ ša ² kq ¹⁷ a ²	(be) anxious
hie ⁴ ?e ²	hie ⁴ na ²	hie ⁴⁷ a ²	(be) bad tempered
to ² še ⁴ ?e ²	to ¹ še ⁴ na ²	to ¹ ša ⁴⁷ a ²	(be) refreshed
to ⁴ khe ⁴ ?e ²	to ¹ khe ⁴ na ²	to ⁴ kha ⁴⁷ a ²	(be) full, satisfied
to ¹ te ⁴ ?e ²	to ¹ te ⁴ na ²	to ¹ ta ⁴⁷ a ²	marry
ca ⁴ ?e ⁴	ca ⁴ na ²	ca ⁴⁷ a ⁴	(be) strong
ča ¹ ?e ⁴	ča ¹⁴ na ³	ča ¹⁷ a ⁴	(be) happy
to ¹ š ¹ ?i ¹ ?i ⁴	to ¹ š ¹⁴ na ²	to ¹ š ¹⁷ a ⁴	like
to ¹ sce ⁴⁷ ?e ⁴	to ¹ sca ¹⁴ na ²	to ¹ sca ¹⁷ a ⁴	(be) embarrassed

Passive:

3rd	1st	2nd	
t ⁷ i ³ ča ¹ š ¹ ?i ⁴ ?i ²	t ⁷ i ³ ča ¹ š ¹ na ²	t ⁷ i ³ ča ¹ š ¹ ?a ²	lack
thi ³ š ¹ ?i ² ?i ²	thi ³ š ¹ ?i ²³ na ³	thi ³ š ¹ ?i ²⁷ a ²	finish (to)
ti ⁴ tq ⁴⁷ ?e ²	ti ⁴ tq ⁴ na ²	ti ⁴ tq ⁴⁷ a ⁴	give
khe ⁴⁷ ?e ⁴	khe ⁴ na ²	kha ⁴⁷ ?a ⁴	return
the ²⁴ ?e ²	the ²⁴ na ²	tha ²⁴⁷ ?a ²	be out of (finish)

They may be illustrated as follows:

Stative:

Stem	I.O.M.	Pronoun Enclitic	Meaning
to ¹ -ki ²	-?i ²	č ⁷ ?a ¹	he is chilly
to ¹ -no ²	č ² ?e ²	č ⁷ ?a ¹	he knows
to ¹ -hie ⁴	-?e ²	č ⁷ ?a ¹	he's bad tempered

to ¹ -	Stem	I.O.	Meaning
	cold		he is chilly
(It) is becoming	plain	to him	he knows
	sin		he's bad tempered

Passive:

Stem	I.O.M.	Pronoun Enclitic	D.O.
thi ³ š ¹	-?i ²	č ⁷ ?a ¹	š ⁴ a ⁴
finishes	3→3	to him	work
khe ⁴	-?e ⁴	č ⁷ ?a ¹	či ³ ča ³ q ³
is returned	3→3	to him	money
ti ⁴ tq ⁴	-?e ²	č ⁷ ?a ¹	ka ³
is given	3→3	to him	clothing
t ⁷ i ³ ča ¹ š ¹ ?i ⁴	-?i ²	č ⁷ ?a ¹	hnko ² ko ² lo ¹ co ³
is lacking	3→3	to him	a donkey

From the passive set verbs may be activated by means of a causative nče² (3rd person) or an activiser t⁷o¹ (3rd person). When activated, all

indirect object markers may occur. There is only one example of each in the limited data gathered so far.

Verb	Subject	I.O.	D.O.
nče ² ki ¹ to ⁴ ?e ² (She causes clothing to be given to him.)	tha ³	č ² a ¹	ka ³
t ² o ¹ khe ⁴ ?e ⁴ (She returns money to him.)	tha ³	č ² a ¹	či ³ ča ³ o ³

Class I Verb Stems

(i ³)šhe ¹	(be) tired	tho ² te ¹²	hurt, pain
(i ³)hno ¹	(be) thin	khi ²⁴ i ²	breathe deeply
(i ³)nta ¹	(be) weak	či ²⁴ i ²	ascend
(i ³)nte ¹	itch	t ² e ¹ ko ²	be hit
(i ³)tho ¹	nose drip	tha ² ta ²	get wet
(i ³)ša ¹	stink	t ² e ² ki ²	shake (as with malaria)
(i ³)che ³	sing	t ² a ² we ²	alleviate
(i ³)kha ³	return	ti ² i ¹	ache
(i ²)?nte ⁴	(be) tender	ča ²³ ko ³	fear
na ¹ šho ¹	(be) nice	ša ²⁴ nka ⁴	quiver
lo ¹ cha ¹	waste away	še ²⁴ ya ⁴	(be) crooked
nta ¹ se ¹	(be) ugly	še ³ ya ¹	be looked for
the ¹ ma ¹	itch, sting	nta ³ ši ¹	(be) old
ta ¹ ni ¹	(be) quiet	t ² i ³ thi ²	throw out
so ¹² a ²	fever	či ³ o ²	(be) jealous
soa ¹² te ²	(be) hot	nta ³ či ³	(be) skinny
hi ¹² na ²	(be) good	nte ⁴ to ²	(be) tall
the ¹² nka ²	cough	khi ⁴ ta ⁴	(be) dirty
t ² e ¹⁴ ya ²	groan	lo ⁴ nti ⁴	(be) stupid
tho ¹ ši ²	sneeze	kh ⁴ ya ⁴	(be) fussy
še ¹³ to ³	(be) huddled	ni ⁴ a ⁴	(be) greedy
ye ¹ to ³	(be) fat	to ¹ no ² ši ¹	be found
so ¹ hi ³	(be) tough, stiff	to ¹ nte ² to ²	tighten (around)
še ¹ ta ³	meet	to ¹ či ³ na ²	be summoned
ša ² se ¹	smell nice	t ² i ³ thi ¹² nta ²	spill
ša ² ?nte ¹	stink	kha ³ mi ² nki ¹	somersault
tho ² a ¹²	be loved	tho ⁴ ne ⁴ ma ¹	wash (something)

Class IIa Verb Stems

3rd	1st and 2nd	
(i ³)tha ¹	(i ²)tha ⁴	pick (corn, beans)
(i ³)ce ¹	(i ²)ce ⁴	grasp
(i ³)te ¹	(i ³)te ³	dance
(i ³)t ² o ¹	(i ²)t ² o ⁴	grind (corn)
(i ³)c ⁷ e ¹	(i ³)c ⁷ e ³	twist (rope)
(i ³)t ⁷ e ¹	(i ²)t ⁷ e ⁴	wring
(i ³)t ⁷ i ¹	(i ³)t ⁷ i ³	play (stringed instrument)
t ² i ¹ nka ¹	t ² i ¹ nka ¹	pour (from)
t ² a ¹ ce ¹	t ² a ³ ce ¹	climb
t ² o ¹ ya ¹	t ² o ³ ya ¹	kill

tʔa¹nki¹	tʔa³nki¹	grow
tʔa¹hɔ¹	tʔa³hɔ¹	sweep
tʔa¹ma¹	tʔa³ma¹	smooth
tʔa¹ya¹	tʔa³ya¹	move, gather
tʔa¹wa¹	tʔa³wa¹	(be) sad, longing
ci¹tɔ¹	ci³tɔ¹	play
tʔi¹¹nka²	tʔi³nka¹	knock, beat (e.g. drum)
ɕo¹²nta²	ɕo³nta²	have
tʔi¹ce²	tʔi³ce²	cut
ɕo¹sɪ²	ɕo³sɪ¹	be acquainted with
tʔo¹nti³	tʔo³nti³	bathe
tʔe¹³ya³	tʔe³ya³	call
tʔo¹ka³	tʔo³ka³	hit
tha¹ka³	tha³ka⁴	drop
ɕʔa¹tha³	ɕʔa³tha³	kick
tʔo¹kha³	tʔo³kha³	return (something)
ta·²te¹	ta·⁴te⁴	cut
ko²ma¹	ko³ma¹	stare
ta·²ki¹	ta·³ki³	nurse, as baby
ʂa²a¹	ʂa³a²	carry in hand
ti²nka¹	ti²nka³	run
tha²hɔ⁴	tha¹hɔ⁴	fight
the³ya¹	the¹ya¹	search
tha³hɔ²	tha¹hɔ²	give over
tha·³ka²	tha·¹²ka²	light (fire)
tʔa³she²	tʔa³she¹	go out
tha³ca³	tha¹ca³	earn
tha·³ko³	tha·¹³ko³	teach
tʔe⁴na²	tʔe¹⁴na²	buy
tʔe⁴nka⁴	tʔe¹⁴nka⁴	put into
tha¹ci⁴	tha³ci¹	pick up
to¹ce¹che³	to¹ce¹che²	split
to¹ci¹hi²	to³ci¹hi²	break (as rope)
to¹ci¹tʔo⁴	to³ci¹tʔo⁴	cut
tʔa¹ci¹²nka²	tʔa³ci¹¹nka²	stop by, at
tʔa¹nta²sɪ¹	tʔa³nta²sɪ¹	angry
tʔa¹no²te²	tʔa³no²te²	blow
tʔa²ni²a¹	tʔa³ni²a¹	come down (e.g. rain)
ta³ki²che²	ta³ki¹che²	take off (e.g. clothing)
ti³to²sɪ⁴	ti¹to²sɪ⁴	sniff
thi³to²sɪ⁴	thi¹to²sɪ⁴	change (something)
thi³so⁴hi³	thi¹so⁴hi³	tense up to lift
tʔe⁴tɔ⁴a²	tʔe¹tɔ⁴a²	order, command
ti⁴ki⁴te²	ti¹ki⁴te²	pour, sprinkle

Class IIb Verb Stems

3rd and 2nd	1st	
(i³)thi²	(i³)thi³	go (down)
(i³)ta²	ta³a¹	pluck (e.g. cactus blade)
(i³)tʔi²	(i³)tʔi¹	drink
tho·²a²	tho·³a⁴	hold (e.g. wood); embrace
tʔa²³ya³	tʔa¹³ya³	get up
tha²ka³	tha¹ka³	cut, gather wood

ni ² šha ³	ni ¹ šha ³	talk
ša ² tha ³	ša ¹ tha ³	be fallen on
tha ³ no ²	tha ³ no ¹	laugh, smile

Class IIc Verb Stems

3rd	1st	2nd	
(i ³)tha ³	tha ³ a ¹	(i ³)tha ²	fold, weave
(i ³)the ³	(i ³)the ¹	(i ³)the ²	borrow
šho ¹² a ²	šho ³ a ¹²	šho ⁴ a ²	hold (child)
t ⁷ i ² ko ²	t ⁷ i ¹ ko ⁴	t ⁷ i ² ko ³	see
tha ³ te ²	tha ² te ²	tha ² te ²	hit with hand
tha ³ nka ²	tha ¹ nka ²	tha ² nka ²	pat tort; wear shoe
tha ³ nki ¹ ši ²	tha ¹ nki ¹ ši ²	tha ² nki ¹ ši ²	begin
tha ³ nči ¹² a ²	tha ¹ nči ¹ a ¹	tha ² nči ¹² a ²	ask for
tha ³ nto ¹² a ²	tha ¹ nto ¹² a ²	tha ² nto ¹² a ²	cranky
ni ¹ nka ² o ²	ni ¹ nka ⁴ o ²	ni ¹ nka ¹ o ³	angry
to ¹ ce ¹ nka ² o ²	to ¹ ce ¹ nka ⁴ o ²	to ¹ ce ¹ nka ¹ o ³	is wanted
ša ¹ si ² nka ² o ²	ša ¹ si ² nka ⁴ o ²	ša ¹ si ² nka ¹ o ³	remember
thi ² nka ² o ²	thi ² nka ⁴ o ²	thi ² nka ⁴ o ²	want

Class III Verb stems

3rd	1st and 2nd	
(i ³)t ⁷ e ³	(i ³)te ¹	throw
t ⁷ e ⁴ nka ⁴	te ¹⁴ nka ⁴	put into
t ⁷ e ⁴ nka ⁴ ši ²	te ¹ nka ⁴ ši ²	put, plant
tha ³ k ⁷ e ³	tha ³ ke ¹	hit (with); put
the ³ hoa ²	the ¹ çi ³	sleep
thi ² hi ²	tha ³ sa ¹	arrive there
(i ³)č ⁷ e ²	(i ²)t ⁷ a ⁴	do (work)
č ⁷ e ¹² na ²	t ⁷ a ¹² na ²	make

3rd	1st	2nd	
(i ³)ne ²	(i ³)ne ¹	(i ³)nte ²	eat

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