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33 Valency classes in Zenzontepec Chatino

1 Introduction

This chapter outlines the basic valency patterns of Zenzontepec Chatino (ZEN). Chatino is a cluster of speech varieties in the Sierra Madre Mountains of southwestern Oaxaca State, Mexico. There are three principal varieties: Zenzontepec; Tataltepec; and the Eastern Chatino group (Boas 1913; Campbell 2013). Chatino is coordinate with Zapotec in the Zapotecan language family of the Otomanguean stock (Boas 1913; Kaufman 1987).

ZEN is phonologically conservative and appears to be fairly representative of other varieties in terms of valency patterns, particularly the conservative Eastern Chatino variety of San Marcos Zacatepec. Innovative Eastern Chatino varieties like Yaitepec and San Juan Quiahije have lost non-prominent vowels, eroding some of the valency related morphology. No previous work on Chatino has systematically explored semantically based valency classes, but morphosyntax is treated in depth in Rasch (2002) and (less extensively) in Pride (2004). There have been several recent classifications of verbs based on the aspect prefix allomorphs that they select (Campbell 2011; followed by Villard 2010; Sullivant 2011), which is determined in part by broad valency patterns but also by phonological factors.

§2 outlines basic ZEN morphosyntax and the structure of verbs. §3 presents the major valency patterns (coding frames), and §4 treats valency alternations. Finally, §5 gives a summary and conclusions. The table in the appendix lists the 70 core meaning labels selected for comparison and their ZEN counterpart verbs, coding frames, and the main alternations.[1]

1 The practical orthography here differs from the IPA as follows: *kw* = [k^{w}], *tz* = [ts], *r* = [ɾ], *ty* = [t^{j}], *ly* = [l^{j}], *ny* = [n^{j}], *ch* = [ʧ], *x* = [ʃ], y = [j], ky = [k^{j}], j = [h], Ɣ = nasalized vowel, VV = long vowel, v̄ = mid tone, and v́ = high tone. Unaccented vowels carry no lexical tone. The frequently occurring enclitics *=V?* and *=V́* contain a vowel mora that is underlyingly unspecified for quality. They take on the quality of the preceding vowel, even if a glottal stop intervenes. Where no glottal stop intervenes, the host vowel is lengthened. Prefixes are set off by a hypen (-), enclitics are preceded by an equals sign (=), and component stems of compounds are separated by a plus sign (+). Vowel hiatus is only tolerated across clitic boundaries, and elsewhere one vowel is deleted in hiatus. Underlying vowels that end up deleted are enclosed in parentheses in the examples and tables.

2 Basic morphosyntax of Zenzontepec Chatino

2.1 Clause structure and grammatical relations

ZEN basic constituent order is VSO, and it is a strongly head-marking language. Basic intransitive, transitive, and ditransitive clauses are shown in (1), (2), and (3), respectively.

(1) *nku-laʔa na yaka=VʔV.*
CPL-get.broken DEF wood=DEM
'The stick split.'
(elicited)

(2) *nka-(u-)laʔa na nkwítzą=Ví jiʔį̄ na wentanā=Ví.*
CPL-(CAUS-)get.broken DEF child=DEM RN DEF window=DEM
'The child broke the window.'
(elicited)

(3) *nka-(u-)tējéʔ=ą̄ʔ tzaka wurū jiʔį̄ kwitiʔ=ą̄ʔ.*
CPL-(CAUS-)pass=1SG one donkey RN brother=1SG
'I sent a donkey to my brother.'
(offered)

Pronouns have independent and dependent forms. As for the dependent forms, the 2nd person singular is marked by tone change on the verb (4a), and the 3rd singular (and plural) may be zero-marked, as in *nakwę* 'he said' in (4b). All other dependent pronouns are enclitics, like the 1st person singular in (4b).

(4) a. *ta y-**āāʔ***
already CPL-go.**2SG**
'You went already?'

b. *ta y-aa=**ą̄ʔ** nakwę.*
already CPL-go=**1SG** CPL.say**[.3]**
'I already went, he said.'
(text)

Pronominal enclitics cannot occur if a coreferential NP is present post-verbally (5).

(5) ***ta y-aa= ą̄ʔ nāáʔ.***
already CPL-go=**1SG 1SG**
sought reading: 'I already went.'
(elicited)

If the coreferential NP is fronted, the person enclitics do occur on the verb (6). These facts suggest that fronted NPs are extra-clausal and pronominal enclitics are full pronouns and not indices.[2] Since they are not indices, they are not represented in the coding frames of verbs in the appendix or elsewhere.

(6) ***kwaʔą*** *ki-(a)kwiʔ=**wą*** *lo kiʔyā.*
2PL POT speak=**2PL** in market
'You (pl.), you (pl.) will speak in the market.'
(elicited)

P arguments are flagged by the relational noun *jiʔį̄* if they are pronominal (7) or topical (8) (Dalrymple & Nikolaeva 2011: 155–159).

(7) *k(i)-u-t-ūʔú+leta= ąʔ* ***jiʔį̄=wą*** *jā ná ki-liji=wą.*
POT-CAUS-TRN-be.inside+path=1SG **RN=2PL** CONJ NEG POT-get.lost=2PL
'I am going to guide you (pl.) so that you (pl.) don't get lost.'
(offered)

(8) *ta nka-(u-)xūʔú=ūʔ* ***jiʔį̄*** *[na ya nkítā=Vʔ] tī*
already CPL-(CAUS-)get.cut=3PL **RN** DEF CLF Enterolobium.sp.=DEM TPLZ
niī.
now
'They have cut (down) the elephant's ear tree now.'
(text)

If a P argument is not pronominal or topical, it is not flagged (9). Therefore, ZEN has differential object marking. When the P argument is unflagged, grammatical relations are determined by context and/or constituent order.

(9) *nkā-naʔa jwaā=Ví jakwa kinī.*
CPL-see Juan=DEM four bird
'Juan saw four birds.'
(elicited)

Only A and S arguments may encliticize to verbs, and only other arguments (P, T, R, etc.) may be flagged by *jiʔį̄*. Therefore, ZEN shows nominative-accusative alignment, and we can speak of a subject in ZEN as being the argument that can encliticize to the verb if pronominal.

2 Enclitics take other hosts as well: intimately (inalienably) possessed nouns, relational nouns, adjectives (used predicatively), numerals, and other quantifiers.

Finally, like pronominal 3rd person subjects, pronominal 3rd person object arguments may be omitted, along with the relational noun, as in (10), where the causative prefix tells us that the verb is bivalent.

(10) *k(i)-u-kitę̄ʔ.* ***(0)***
POT-CAUS-get.snapped[.3] **(RN[.3])**
'S/he snapped it.'
(elicited)

2.2 More on flagging: relational nouns

As ZEN is a head-marking language, there is not much elaboration in flagging of NPs. However, a few further details should be mentioned before moving on to coding and valency patterns.

2.2.1 The relational noun *jiʔį̄*

In ditransitive constructions T arguments are flagged the same as P, by *jiʔį̄* if pronominal or topical. R arguments are always flagged by *jiʔį̨*. If both are flagged, word order distinguishes them, and T precedes R, as in (11).[3] Therefore, the language has indirective alignment with respect to ditransitives in terms of Malchukov et al. (2010).

(11) *k(i)-u-suʔū=ą̄ʔ* ***jiʔį̄*** *na nkwítzą kūnáʔa* ***jiʔį̨*** *jniʔ kíʔyū=ą̄ʔ.*
POT-CAUS-show=1SG **RN** DEF child female **RN** offspring male=1SG
'I will show the girls to my son.'
(elicited)

The relational noun may also flag locational arguments (if topical or pronominal), as exemplified for the verbs 'put' (12) and 'go' (13). Therefore, locational NPs may be flagged the same as P and T.

(12) *nka-(u-)tūkwá teje?* ***jiʔį̨*** *na kantū=Vʔ.*
CPL-(CAUS-)be.inside[.3] salt **RN** DEF soup=DEM
'She put salt in the soup.'
(elicited)

3 Flagging in ZEN ditransitive constructions differs from that in Eastern Chatino, where inanimate P and T arguments are reportedly never flagged by cognates of *jiʔį̨* (Cruz et al. 2010).

(13) *nt(i)-utzę kwaa maxi nu tz-aa=ya* ***jiʔį̄.***
HAB-fear 1PL.EXCL even.if NMLZ POT-go=1PL.EXCL **RN[.3]**
'We would be afraid to even go by there.'
(text)

It may also flag a beneficiary (14), or maleficiary, participant.

(14) *liwrū k(i)-u-jnyā=yu* ***jiʔį̄*** *kitzę.*
book POT-CAUS-make=3SG.M **RN** village
'He is going to make a book for the village.'
(text)

The relational noun *jiʔį̄* also flags the possessor NP in non-intimate (alienable) possession constructions (15).

(15) *nka-(u-)lōó kuchilū* ***jiʔį̄.***
CPL-(CAUS-)take.out[.3] knife **RN[.3]**
'He took out **his** knife.'
(text)

2.2.2 The relational noun *lóʔō*

The relational noun *lóʔō* serves as a coordinator and also flags instrument (16) and comitative (17) NPs.

(16) *nku-tyejnā nt(i)-u-laʔa=ūʔ jiʔį̄ na kee=Vʔ* ***lóʔō***
CPL-begin[.3] HAB-CAUS-get.broken=3PL RN DEF rock=DEM **RN.with**
kwi-tīʔyú.
CLF.ANIM-lightning
'They began to break the rock with lightning.'
(text)

(17) *k(i)-u-s-ukwaʔ=na jnuʔ neyā* ***lóʔō****=ūʔ.*
POT-CAUS-TRN-shell=1PL.INCL eight fanega **RN.with**=3PL
'We are going to shell eight fanegas (of corn) with them.'
(text)

2.3 Devices that encode or change valency

Most valency encoding occurs on the verb. The majority of verb roots are monovalent, a smaller number are polyvalent, and a limited set of roots are unspecified

for valency, requiring equipollent derivation. ZEN is a transitivizing language in terms of Nichols et al. (2004). Transitivity in ZEN involves not only the number of arguments a given verb takes, but also the agency or animacy of the subject (Campbell 2011a). Therefore, in dealing with valency patterns and alternations it is useful to talk about verb alternants as being more transitive or less transitive, in the sense of Hopper & Thompson (1980).

The minimal verb consists of a root with aspect/mood inflection, and only a few irregular verbs have no overt marking for one aspect/mood category or other. The verbal template is given in (18). Its core includes the head root and three prefix positions, which all together make up a single phonological word. Verbal lexemes may consist of the main root compounded with other stems, which are separate phonological words. One or more adverbial enclitics may follow the simple or compound stem, and the subject enclitic pronoun (if present) occurs in final position. Auxiliaries precede the core and form a compound with it (and a separate phonological word). Auxiliaries have their own aspect prefix slot.

(18) ZEN verbal template

	Pos 3	**Pos 2**	**Pos 1**	**Root**			
(ASP- AUX)+	**ASP-**	**(CAUS/ITER-)**	**(DERV-)**	**root**	(+stem)*	(=ADV)*	(=SBJ)

The three morphological slots preceding the main verb root in the core are numbered beginning with the position closest to the root (following Kaufman 1987). Position 1, if filled, is occupied by derivational valency prefixes (19).

(19) Position 1 prefixes
t-/*s-* transitivizer
y- intransitivizer

Position 2, if filled, may contain the iterative prefix *i-* or the causative derivational prefix *u-*, the latter of which is most relevant for valency (20).

(20) Position 2 valency changing devices
u- causative prefix

Aspect/mood inflection is obligatory and verb initial (position 3 for verbs with no auxiliary). There are six categories, each having considerable allomorphy: the Potential and Imperative moods, and the Progressive, Habitual, Completive, and Stative Aspects. Following Kaufman's (1987, 1993) treatment of Zapotec, Campbell (2011) classifies ZEN verbs based on which allomorphs of the Potential, Progressive, Habitual, and Completive prefixes they select. The selection of allomorphs is based both on valency and the phonological shape of the stem, which in turn relate to the valency changing devices in positions 1 and 2. Therefore, aspect prefixes are

Tab. 1: ZEN Aspect prefix (sub-)classes (Campbell 2011).

	Class A		Class B			Class C	
	Au, Ac	**A2**	**Bc**	**Bt**	**By**	**Ca**	**C2**
POT	*ki-*	*ki-*	*ki-*	(*t* → *ty*)	(*y* → *ch*)	*k-*	*k-*
HAB	*nti-*	*nti-*	*nti-*	*n-* (*t* → *ty*)	*n-* (*y* → *ch*)	*nti-*	*nti-*
PROG	*nte-*	*nte-*	*nte-*	*nte-*	*nte-*	*nch-*	*nch-*/*ntey-*
CPL	*nka-*	*nkwi-*	*nku-*	*nku-*	*nk*(*u*)-	*nku-*	*y-*/*nkay-*

part of the coding frames of verbs, and any account of verb classes and valency must include the aspect prefix (sub-)classes, summarized in Table 1.

A rough characterization of the valency and phonological features of verbs of the various aspect prefix sub-classes is given in (21), and a more detailed description of them will be given in § 3. The majority patterns are sub-classes Au, Bc, and By, and it is clear from the summary in (21) that there is some overlap since the aspect prefix classes are not based solely on valency.

(21) Sub-class Au derived *u-* causative verbs
Sub-class Ac unergative or transitive
Sub-class A2 transitive and all *i* or *e* initial verbs (tr. or itrn.)
Sub-class Bc unaccusative
Sub-class Bt motion and posture verbs
Sub-class By *y-* initial verbs, mostly derived unaccusative
Sub-class Ca unaccusative, *a-* initial
Sub-class C2 unergative or transitive, begin in *a-*, *o-*, or *u-*

One auxiliary is particularly relevant for valency: the causative auxiliary *ē+*, which is described in detail in § 4.2.4. Like the position 2 causative prefix *u-* (discussed in § 4.2.3), the causative auxiliary adds an external causer participant to an event. Which of the two causatives a given verb takes, if any, is largely determined by the lexical semantics of the underived verb and its typical arguments. A handful of verbs may take either one of the causatives, but the resulting derived verbs differ in their semantics. The difference between the two causative alternations is the highlight of ZEN valency alternations and is treated in § 4.2.5.

In auxiliary constructions, the aspect/mood inflection of the auxiliary has scope over the entire verb. The prefix positions preceding the main verb root may or may not be filled, but any such morphology is semantically vacuous. Aside from a few exceptions, the extra prefixes are predictable by the particular auxiliary and the aspect-prefix subclass of the main verb. The main verb root with any superfluous morphology in an auxiliary construction is referred to as a dependent form of the verb. To provide an example, (22a) shows the basic verb 'eat' in the Completive aspect. In the auxiliary construction in (22b) 'go to eat', the dependent form of the

main verb includes the Completive Aspect prefix *y-* even though the entire compound verb is inflected for Potential Mood. Finally, in the *ē+* causative auxiliary construction in (22c) 'feed him/her', the dependent form of the main verb 'eat' includes the superfluous Potential Mood prefix *k-*, even though the entire verb is in the Completive Aspect.

(22) a. *y-aku.*
CPL-eat[.3]
'S/he ate.'

b. *tz-a+y-aku.*
POT-go+CPL-eat[.3]
'S/he will go eat.'

c. *nkw-ē+k-aku.*
CPL-CAUS+POT-eat[.3]
'S/he fed him/her.'

When certain verbs undergo the *ē+* causative auxiliary alternation their dependent form includes a superfluous causative prefix *u-*. However, these are not examples of the *u-* causative alternation, and crucially, this is not what is meant by certain verbs being able to undergo both causative alternations, nor are they cases of double causativization in which two layers of causers are added to the event. For example, the basic verb 'boil' is given in the Completive Aspect in (23a). With the auxiliary 'finish' in (23b) the dependent form of 'boil' is just the bare verb root. In the *ē+* causative auxiliary construction (23c) the dependent form of 'boil' includes both the position 3 Potential Aspect prefix *k(i)-* and the position 2 causative prefix *u-*, which are semantically vacuous.

(23) a. *nku-lákwi.*
CPL-boil[.3]
'It boiled.'

b. *nkwi-ta+lákwi.*
CPL-finish+boil[.3]
'It finished boiling.'

c. *nkw(i)-ē+k-u-lákwi.*
CPL-CAUS+POT-CAUS-boil[.3]
'S/he boiled it.'

3 Valency patterns

3.1 Aspect prefix subclasses

3.1.1 Aspect prefix sub-class Bc

The largest set of underived verbs of low transitivity are the consonant-initial, aspect prefix sub-class Bc verbs. They inflect for aspect as in Table 2.

Tab. 2: Aspect prefix sub-class Bc verbs.

	Stem	POT	PROG	HAB	CPL
		ki-	*nte-*	*nti-*	*nku-*
'sink (itrn.)'	*-líti?*	*ki-líti?*	*nte-líti?*	*nti-líti?*	*nku-líti?*
'break (itrn.)	*-laʔa*	*ki-laʔa*	*nte-laʔa*	*nti-laʔa*	*nku-laʔa*

Most sub-class Bc verbs are monovalent change of state verbs, but a few are activities, such as *nku-jnyá* 'quake' and *nku-lákwi* 'boil (itrn.)'. They have either non-volitional subjects as in *nku-su* 'come off' (24) or volitional subjects that do not actively participate in the event, as in some uses of 'get cut' (25).

(24) *lēʔ tza-jnyāʔá ná wala* ***nku-su*** *tī ntaʔą wiʔ.*
then word-true NEG where CPL-come.off TPLZ fresh.corn there
'Then it's true that no fresh corn was picked anywhere there.'
(text)

(25) ***nku-xūʔú*** *túkwa seʔę yaāʔ.*
CPL-get.cut two place hand[.3]
'He got cut (or cut himself accidentally) in two places on his hand.'
(offered)

Most of these verbs denote events that can be brought about by an external agent, and they can be causativized. However, some take the derivational *u-* causative, others take the auxiliary *ē+* causative, and some take neither or both (see §4.2.3 and §4.2.4). In the 70-verb-meaning list, those that are sub-class Bc verbs in ZEN are *nku-líti?* 'sink', and *nku-lā+misę̄* 'roll' (a compound based on the verb *-láā* 'come loose').

3.1.2 Aspect prefix sub-class Ca verbs

A smaller but significant set of underived intransitive verbs make up aspect prefix sub-class Ca, labeled as such since all but one begin in /a/. Their aspect inflection is exemplified in Table 3.

Tab. 3: Aspect prefix sub-class Ca verbs.

	Stem	POT	PROG	HAB	CPL
		k-	*nch- ~ ntey-*	*nti-*	*nku-*
'get cooked'	*-ākéʔ*	*k-ākéʔ*	*nch-akēʔ*	*ntī-(a)kéʔ*	*nkū-(a)kéʔ*
'die'	*-aji*	*k-aja*	*ntey-aja*	*nti-(a)ji*	*nku-(a)jwi*

The sub-class Ca verbs that are in the 70-meaning list are *nk-ā+tāká* 'live/inhabit' and *nku-(a)jwi* 'die'. The first is a compound based on the verb *n-kā* 'become', 'happen'. Aside from these, a nearly exhaustive list of the non-compound verbs in this aspect prefix sub-class are: *-akā* 'become', *-akwaʔ* 'leak', *-ala* 'be born', *-ālú* 'get fat', *-asiya* 'be lying (thrown) down', *-ātę́* 'crumble', *-ākwí* 'rot', *-anaʔ* 'thicken', *-āsúʔ* 'get old', *-atzu* 'pop (itrn.)', *-atzaʔ* 'get wet', *-ajī* 'be gotten', *-ātzúʔ* 'spoil', and *-uʔwe* 'dry up'. Like those of sub-class Bc, the sub-class Ca verbs (26) are of low transitivity. They are mostly monovalent, inactive, change of state verbs.

(26) *nteē* ***nku-(a)la****=kāʔá nāáʔ nakwę n-tzaʔą=kāʔá nāáʔ.*
here CPL-be.born=also 1SG say[.3] STAT-be.attached=also 1SG
'I was also born here, he said. I have an animal spirit companion too.'
(text)

3.1.3 Aspect prefix sub-class Bt verbs

Most aspect prefix sub-class Bt verbs are underived and begin in /t/. They can be subdivided into (non-deictic) motion verbs, positional verbs, and a few unaccusatives. Their aspect inflection is shown in Table 4.

Tab. 4: Aspect prefix sub-class Bt verbs.

	Stem	POT	PROG	HAB	CPL
		(t → ty)	*nte-*	*n- (t → ty)*	*nku-*
'be inside'	*-tūkwá*	*tyūkwá*	*nte-tūkwá*	*n-tyūkwá*	*nku-tūkwá*
'leave'	*-túʔu*	*tyúʔu*	*nte-túʔu*	*n-tyúʔu*	*nku-túʔu*

3.1.3.1 Motion verbs

The majority of the non-deictic motion verbs (27) fall into this class.

(27) *ná ki-(a)kwiʔ jiʔį=na maxi kākwá=ri* ***nku-tejẹ́****.*
NEG POT-speak[.3] RN=1PL.INCL even.if close.by=only CPL-pass[.3]
'They don't speak to us even if they pass close by.'
(text)

The sub-class Bt motion verbs that are found in the 70-meaning list are *nku-túʔu* 'leave' and *nku-túʔu+jnyá* 'run', a compound based on 'leave'. Other stems include: *-taʔą* 'walk/go around', *-tejẽ* 'pass', *-tákwi* 'fly', *-tásū* 'fall to the ground', and *-túʔu sateʔ* 'undress' (lit. 'his/her clothes leave'). Like the sub-class Bc and Ca verbs, the Bt motion verbs may differ on which causative alternation they undergo (see § 4.2.3 and § 4.2.4), if any, and a few undergo both.

3.1.3.2 Positional/existential verbs

The positional/existential verbs mostly begin in /t/. They show some degree of polysemy, and their meanings tend to overlap. One corresponds to a meaning in the 70-meaning list: *n-tyukwā* 'be sitting (relaxed)' (SIT). Other stems include: *-teʔę* 'be located'; *-tēyá* 'be standing'; *-toǫ* 'be standing'; *-to+nēʔé* 'be gathered together'; *-t-uʔu* 'be inside', '(crop or fruit) be yielded'; *-tákwī* 'be up above/suspended/hanging'; *-tūkwá* 'be inside'; *-saʔą* 'be attached/written'; *-sukwā* 'be lying down'; and *-y-uʔu* (sub-class By) 'be put inside', 'live'.

The positional verbs are glossed as statives because the non-stative aspect/mood forms typically refer to the overall states or positions and not the transitions to or from them. In order to refer to the transitions, they are combined with auxiliaries, for example *-ya+toǫ* 'stand up' (literally 'go+be.standing'). They have several behavioral properties that set them apart as a distinct class. They are used as: existential predicates (28); verbs meaning 'have' (29), which are like existentials ('there is an X of Y's in such position'); and secondary predicates, in Stative Aspect, denoting position (30).

(28) *wiʔ* ***nku-tūkwá*** *tzaka kétū* *nakwę kétū kyaʔā*.
there CPL-be.inside one opening say[.3] hole mountain
'**There was** an opening there, they say, a tunnel.'
(text)

(29) ***n-teʔę*** *líjyā jiʔį̄* *nka-(u-)jnyā* *tzaka ya kūtéʔ*.
STAT-be.located cane RN[.3] CPL-(CAUS-)make[.3] one CLF spinner
'He **had** sugar cane, and he built a sugar mill.'
(text)

(30) ***n-tákwī*** *nijyaą* *nto kweʔę nti-sesu*.
STAT-be.suspended[.3] PROG.come[.3] face air HAB.flip.over[.3]
'When he came through the air **up above,** he flipped over.'
(text)

3.1.4 Aspect prefix sub-class Ac verbs

Aspect prefix sub-class Ac is a fairly small set of consonant-initial, underived verbs. Unlike verbs of sub-classes Bc and Ca, they are unergative, or active, monovalent verbs and a few bivalent verbs (31).

(31) *la* *wiʔ* *y-a+tēyá* *luwiʔ* *lēʔ* ***nka-xáʔā***.
up.to there CPL-go+be.standing[.3] then then CPL-scream[.3]
'She went to stand there then, and then she screamed.'
(text)

Their aspect inflection is shown in Table 5.

Tab. 5: Aspect prefix sub-class Ac verbs.

	Stem	POT	PROG	HAB	CPL
		ki- / [pal]	*nte-*	*nti* / *n-* [pal]	*nka-*
'cough'	*-tuuʔ*	*tyuuʔ*	*nte-tuuʔ*	*n-tyuuʔ*	*nka-tuuʔ*
'play'	*-jya*	*ki-jya*	*nte-jyā*	*nti-jya*	*nka-jyā*

The aspect prefix sub-class Ac verbs that are in the 70-meaning list are: *nka-xáʔā* 'scream' (31); *nka-xiti* 'laugh'; *nka-jyā* 'play'; *nka-tuuʔ* 'cough'; *nkā-naʔa* 'see', 'look at'; *nka-xáʔā+lóʔō* 'shout at'; and *nka-ʔni* 'beat'. Other stems include: *-jnaʔ* 'defecate'; *-júʔū* 'be bloated', 'be embarrassed'; *-júu̱* 'spin (thread)'; *-lyaʔā* 'smell'; *-nyaʔ* 'wash hands'; *-suuʔ* 'urinate'; *-lya* 'fart'; *-lālá* 'scold'; *-sǫ́* 'fight'; and *-sesu* 'turn over'.

These verbs take only volitional subjects and therefore are higher in transitivity than verbs of sub-classes Bc and Ca. This higher transitivity is reflected in their aspect inflection, particularly the Completive prefix *nka-*, which is the allomorph selected by the great majority of bivalent verbs (sub-classes Au and C2). None of the aspect prefix sub-class Ac verbs participate in the *u-* causative derivation, about half take the *ē+* causative, and the remainder are only causativized periphrastically.

3.1.5 Aspect prefix sub-class A2 verbs

Aspect prefix sub-class A2 is unique in that it is the only one that selects the Completive prefix *nkwi-*. It contains several consonant-initial bivalent verbs and all verbs whose stems begin in /i/ or /e/, whether monovalent or polyvalent, including verbs with the *ē+* causative auxiliary. Their aspect inflection is given in Table 6.

Tab. 6: Aspect prefix sub-class A2 verbs.

	Stem	POT	PROG	HAB	CPL
		ki- / 0	*nte-*	*nti-*	*nkwi-*
'rain'	*-eʔe choo*	*k-eʔe choo*	*nte-k-eʔe choo*	*nti-ʔe choo*	*nkw(i)-eʔe choo*
'search for'	*-tyána*	*tyána*	*nte-tyána*	*n-tyána*	*nkwi-tyána*

Most underived bivalent verbs of sub-class A2 may also occur with the Completive prefix *nka-*, and therefore also fall into sub-class Ac. The verbs in the 70-meaning list that belong to sub-class A2 are: *nkw(i)-eʔe* (*choo*) 'rain', *tiʔi nkw(i)-ii* 'feel pain', *nkw(i)-é+kwaą̄* 'jump', *nkw(i)-ē+tyukwā* 'sit down', *nkw(i)-ē+saʔą* 'sit down', *nkw(i)-ē+k-ata* 'wash/bathe (trn.)', *nkwi-tyā+tyūkwá* 'help', *nkwi-tyána* 'look for', and *nkw(i)-ē+k-utzę* 'frighten (trn.)'. This is not a coherent class of verbs in terms of valency since some are unergative, others are transitive roots, and still others are derived causatives.

3.1.6 Aspect prefix sub-class C2 verbs

Aspect prefix sub-class C2 consists of vowel-initial verbs. Though a few are inactive monotransitives, the majority are higher transitivity unergatives, underived bivalent verbs, and a few derived *u-* causatives. Their aspect marking is shown in Table 7.

Tab. 7: Aspect prefix sub-class C2 verbs.

	Stem	POT	PROG	HAB	CPL
		k-	*nch- ~ ntey-*	*nti-*	*(nka)y-*
'eat'	*-aku*	*k-aku*	*nch-aku*	*nt-aku*	*(nka)y-aku*
'kill'	*-u-jwi*	*k-u-jwi*	*nch-u-jwi*	*nt(i)-u-jwi*	*(nka)y-u-jwi*

The sub-class C2 verbs in the 70-meaning list are: *y-uwe=tīʔ* 'be sad', *y-ulaʔ* 'feel cold', *y-aa* 'go', *y-ūlá* 'sing', *y-aku* 'eat', *y-utzę* 'fear', *y-ukwęʔ* 'smell', *y-akwiʔ* 'speak/talk', *y-u-(a)jwi* 'kill', *y-alaʔ* 'touch', *y-a+la-saʔą* 'follow', and *y-a+toǫ=tīʔ* 'like'. The last two are compounds based on the verb 'go'. Other unergative verb stems that belong to this sub-class include: *-útī* 'bark', *-ūná* 'cry', *-ulaʔ* 'be cold', *-ākwę́* 'vomit', *-atiʔ* 'nurse', and the unaccusative *-uwe* 'get ground' (32).

(32) ***k-uwe**=ri* *tzoʔō* *tzoʔō* *lēʔ* ***k-ōʔó=ą*** *jiʔį̄* *tza*
POT-get.ground=only[.3] good good then POT-drink=1PL.INCL RN[.3] one

tasā xīyáʔ=ri.
cup small=only
'It gets ground very well, and then one drinks it, just a small cup.'
(text)

Other bivalent aspect sub-class C2 verbs are: *-oʔō* 'drink' (also in (32)), *-aʔna* 'clear (fields)', *-ujwīʔ* 'sell', *-una* 'twist into rope', *-uʔų̄* 'strike', *-oō* 'grind', *-una* 'hear/understand', *-ātáʔ* 'chew', and *-ukwą̄* 'pull'. Other derived *u-* causative verb stems of aspect sub-class C2 are: *-ū-(a)kéʔ* 'cook', *-ū-(a)tę́* 'take apart', and *-u-(a)tzaʔ* 'make wet'.

3.1.7 Aspect prefix sub-class By verbs

All verbs that begin in /y/ belong to aspect prefix sub-class By. Though a few are underived monovalent or bivalent verbs, the majority are monovalent verbs derived by the intransitivizer prefix *y-*. Their aspect inflection is demonstrated in Table 8.

Tab. 8: Aspect prefix sub-class By verbs.

	Stem	POT	PROG	HAB	CPL
		(y → ch)	*nte- (y → ch)*	*n- (y → ch)*	*nk(u)-*
'get burned'	*-y-akę̄*	*ch-akę̄*	*nte-y-akę̄*	*n-ch-akę̄*	*nk-y-akę̄*
'climb'	*-yó+saʔą*	*chó+saʔą*	*nte-yó+saʔą*	*n-chó+saʔą*	*nk-yó+saʔą*

The ZEN sub-class By verbs found in the 70-meaning list are: *nk-y-akę̄* 'get burned'; *nk-y-uteʔ* 'be hungry'; *nk-yó+saʔą* 'climb'; *nk-y-uwi+ntoo* 'blink'; *nk-y-uʔu+ntoo* 'meet'; *n-tz-uʔu+ntoo* 'know', a phonologically irregular stative form of the verb 'meet'; and *nk-y-uʔu+xiiʔ* 'hug'. Some underived non-compound monovalent sub-class By verb stems are: *-yākwá* 'warm up in sun', *-yala* 'burp, get full (from eating)', *-yatę* 'sleep', *-yúkwą̄* 'get a sprain', *-yūkwą́* 'shiver', *-yuʔū* 'take root', *-yāáʔ* 'be built', *-yāchíʔ* 'shrink', and *-yáʔnē* 'abound'. Some underived bivalent verbs are: *-yakwa* 'weave', *-yata* 'plant', *-yáʔą̄* 'wash', and *-yáʔą* 'adapt'. The valency of sub-class By is mixed, but it is primarily intransitive with many derived unaccusatives.

3.1.8 Aspect prefix sub-class Au verbs

Aspect prefix sub-class Au verbs are derived causative verbs that contain the *u-* causative prefix in position 2 of the verbal template (see § 4.2.3). This is a very

large class. Those that are in the 70-meaning list are: *nka-(u-)téēʔ* 'shave', *nka-(u-)tūkwá+xiiʔ* 'hug', *nka-(u-)nána* 'ask for', *nka-(u-)lōó+naa* 'name', *nka-(u-)jnyā* 'build', *nka-(u-)laʔa* 'break (trn.)', *nka-(ū)rá* 'hit', *nka-(u-)xūʔú* 'cut', *nka-(u-)láā* 'take (away)', *nka-(u-)s-āáʔ* 'tear (trn.)', *nka-(u-)s-atą* 'peel (trn.)', *nka-(u-)to+kāchíʔ* 'hide', *nka-(u-)suʔū* 'show', *nka-(u-)tējẹ́* 'send', *nka-(u-)teę* 'carry', *nka-(u-)nēʔé* 'throw', *nka-(u-)x-īkąʔ* 'tie', *nka-(u-)t-ūʔú* 'put/pour', *nka-(u-)tūkwá* 'pour/load', and *nka-(u-)t-ākǫ́ʔ* 'cover/close'. They take the same aspect prefixes as sub-class Ac.

3.2 Verbs of emotion and cognition

Verbs of emotion and cognition have a special coding pattern in which the subject of the verb is an encliticized intimately possessed body part, either *=tīʔ* 'living core' or *=rīké* 'chest, heart'. The two are largely interchangeable. The possessor of the body part is the experiencer of the emotion or thought. ZEN *=tīʔ* is a reduced form of *latīʔ* 'living core', cognate to Proto-Zapotec **laʔtyiʔ* 'center of emotions' (Kaufman 1993). Cognates in other Chatino varieties are glossed as 'essence' (Cruz de Abeles 2009), 'heart' (Pride 2004), and 'one's nature' (Rasch 2002). These enclitics combine with various basic verbs to create complex idiomatic lexemes, as in (33) and (34).

(33) *jwaā=Ví́* *ná* ***y-a+toǫ=tīʔ*** *jiʔį́* *na* *lúkwī=Ví́.*
Juan=DEM NEG **CPL-go+be.standing=living.core[.3]** RN DEF mezcal=DEM
'Juan did not like the mezcal (liquor made from century plant).'
(offered)

(34) *tala* ***n-tāá=tīʔ*** *jiʔį́.*
always **HAB-give=living.core[.3]** RN.2SG
'He's always thinking of you.'
(elicited)

The ZEN verbs with this coding pattern that are found in the 70-meaning list are: *y-uwe=tīʔ* 'be sad', *nka-tāá=tīʔ* 'think', and *y-a+toǫ=tīʔ* 'like'. A selection of other stems is given in (35):

(35) *-ā+jnyá=tīʔ* 'care about' (lit. become+work=living.core)
-ā+tzoʔō=tīʔ 'be convinced' (lit. become+good=living.core)
-eya=tīʔ 'believe' (lit. X=living.core)
-líjī=tīʔ 'be amazed' (lit. get.lost=living.core)
-ise+toǫ=tīʔ 'regret' (lit. turn+be.standing=living.core)
-taa=tīʔ 'get fed up' (lit. finish=living.core)

4 Valency alternations

In this section, uncoded valency alternations (§ 4.1) and verb-coded alternations (§ 4.2) are presented. The latter play a significantly larger role than the former in ZEN.

4.1 Uncoded alternations

4.1.1 Object omission alternation

In the object omission alternation, an underived polyvalent verb has an unexpressed, but generally understood, object. The role of the subject of the less transitive verb is the same as that of the basic verb, as in English (Levin 1993). This alternation (36) must be distinguished from cases where a pronominal object is dropped (10).

(36) a. ***y-utzę*** *na nkwítzą kíʔyū=V́ jiʔį̄ niʔ kíʔyū=V́.*
CPL-fear DEF child male=DEM RN 3SG.RSP male=DEM
'The boy feared the man.'
(elicited)

b. *kwi-naʔa=tzoʔō=wą nakwę ná* ***k(i)-utzę=wą*** *nakwę.*
IMP-see=well=2PL say[.3] NEG POT-fear=2PL say[.3]
'"Look here", he said. "Do not be afraid", he said.'
(text)

The ZEN verbs in the 70-meaning list that undergo this alternation are: *y-aku* 'eat'; *y-akwiʔ* 'speak', 'talk'; *y-ūlá* 'sing'; *y-utzę* 'fear'; *nkā-naʔa* 'see', 'look at'; *nka-(u-)suʔū* 'show', which means 'teach' with omitted object; *nka-nána* 'ask for', and *nka-tāá=tīʔ* 'think'. Some others are: *-u-saʔą* 'write', *-una* 'hear', *-ikwą* 'sew', and *-ʔne+tzáʔą̄* 'study/read'. The verbs that undergo this alternation in ZEN are similar to those of English. A few differences like 'show' and 'give' stand out, but note that they also cover the meanings 'teach' and 'provide sustenance', which are covered by separate verbs in English. Spanish *enseñar* means both 'show' and 'teach', which is like ZEN *nka-(u-)suʔū*.

4.1.2 Ambitransitive alternation

The ambitransitive alternation involves polyvalent and monovalent uses of a verb with no overt coding difference. Unlike in the object omission alternation, the subject of the less transitive alternant corresponds to the object of the more transitive

verb. The verb 'get' is shown in (37a) and (37b) in its bivalent and monovalent uses, respectively.

(37) a. *wala* ***nku-(a)jwī*** *tī* *kwaʔą* *jiʔį̄* *nu=wę́ʔ*.
where CPL-get TPLZ 2PL RN NMLZ=DEM
'Where did you (pl.) get that?'
(text)

b. ***nku-(a)jwī*** *tzáʔ* *kwēyáʔ* *tínī* *jā* *tz-aa=ą* *tínī*.
CPL-get word measure now CONJ POT-go=1PL.INCL now
'Permission is gotten now, so let's go now.'
(text)

The only other verb yet known to undergo the ambitransitive alternation is *-naʔa* 'see', whose less-transitive alternant means 'look like', as in stimulus subject perception verbs (Levin 1993). This is a marginal alternation in ZEN.

4.2 Verb-coded alternations

4.2.1 The active/inactive alternation

This alternation only applies to a few verb roots, but it deserves mention since it is based on whether or not the event is conceived of as being internally or externally oriented, a semantic distinction relevant for determining which causative alternation a verb undergoes (see §4.2.3 and §4.2.4). The alternation is equipollent, since both alternants are derived from a root that is unspecified for valency and cannot occur on its own. The active member of the pair is coded by the transitivizer prefix, *t-* or *s-*, and the inactive member is derived by the intransitivizer prefix *y-*. In (38), the root *-akę̄* 'burn' carries the intransitivizer prefix *y-*, and the subject is 'the books'.

(38) *nyáją̄* *nu* *nee* *nkā* *nu* *kusōǫ́* *nk-**y**-akę̄* *na* *liwrū=V?*.
year NMLZ say[.3] CPL.be NMLZ war CPL-**ITRN**-burn DEF book=DEM
'The year they say was the Revolution, the books were burnt.'
(text)

The active form of the verb takes the transitivizer prefix *t-*, as in (39). Note that to add an external causer, as in 'he burnt the books', the verb would further require the *u-* causative prefix (see §4.2.2 below).

(39) *nte-**t**-ákę̄* *na* *kii?*.
PROG-**TRN**-burn DEF fire
'The fire is burning.'
(elicited)

Both alternants are monovalent, but the subject of the active verb is the source of the burning, 'the fire' in (39), while the subject of the inactive form is what gets burned by fire, 'the books' in (38). The alternation therefore reflects the orientation of the argument in the event. If it is conceived as being propelled or oriented internally, the active form is used. If the orientation is external, the inactive alternant is used. Only one other verb has been found to undergo this alternation (40).

(40) *-uʔu* (root)
-y-uʔu 'be put inside' (inactive)
-t-uʔu 'be inside' (active)

4.2.2 The equipollent causative/intransitive alternation

In this alternation, the more transitive form is derived by the transitivizer prefix, *t-* or *s-*, along with the *u-* causative prefix, while the less transitive form is derived by the intransitivizer prefix *y-*. The less transitive verb is typically monovalent with a patient-like argument, and the more transitive verb is usually bivalent with a patient object and an external causer subject. The verb *-akę̄* 'burn' exemplified for the active/inactive alternation in (38) and (39) also undergoes the equipollent alternation, and it is the only one from the 70-meaning list that does. Compare the intransitive verb 'get burned' in (38) with its causative counterpart in (41), from the same conversation.

(41) *nka-(u-)kų́=jnáʔ tī na santarū=Vʔ luwiʔ*
CPL-CAUS-shoot=throw TPLZ DEF soldier=DEM then
*nka- (**u-**)**t-**ākę́=ų̄ʔ jiʔį̄ na liwrū=Vʔ.*
CPL- (CAUS)-TRN-burn=3PL RN DEF book=DEM
'The soldiers shot him up, and then they burnt the books.'
(text)

The full documented inventory of other verbs that undergo the equipollent causative/intransitive alternation is given in (42).

(42)

-atą	*-y-atą*	'get peeled'	*-u-s-atą*	'peel'
-ātę́	*-y-ātę́*	'enter, get put in'	*-u-s-atę̄*	'put in'
-ākwę́	*-y-ākwę́*	'come up'	*-u-s-akwę̄*	'agitate'
-Vlú	*-y-ālú*	'get spilled'	*-u-s-ēlú*	'spill'
-atiʔ	*-y-atiʔ*	'get untied'	*-u-s-atiʔ*	'untie'
-áta	*-y-áta*	'be crushed'	*-u-s-áta*	'crush'
-Vnē	*-y-anē*	'(seeds, dust) be spread'	*-u-s-enē*	'spread'

-āʔwé	*-y-āʔwé*	'be split'	*-u-s-āʔwé*	'split'
-ūkwá	*-y-ūkwá*	'get sprayed'	*-u-s-ūkwá*	'spray'
-úkwāʔ	*-y-úkwāʔ*	'get shelled'	*-u-s-úkwāʔ*	'shell'
-uweʔ	*-y-uweʔ*	'get scraped, leveled'	*-u-s-uweʔ*	'scrape, level'
-V̄kąʔ	*-y-ākąʔ*	'get tied up'	*-u-x-īkąʔ*	'tie up'
-ākǫʔ	*-y-ākǫʔ*	'get closed, covered'	*-u-t-ākǫʔ*	'close (trn.), cover'
-alaʔ	*-y-alaʔ*	'be woven'	*-u-t-alaʔ*	'weave'
-ánō	*-y-ánō*	'be left, stay'	*-u-t-ano*	'leave (trn.)'
-uʔu	*-y-uʔu*	'be put inside'	*-u-t-ūʔú*	'put in'
-ūkúʔ	*-y-ūkúʔ*	'get folded'	*-i-tz-ūkúʔ*	'fold'
-ūwíʔ	*-y-ūwíʔ*	'go out, get turned off'	*-i-s-uwīʔ*	'put out/ turn off'
-ālá	*-y-ālá*	'melt (itrn.)'	*-i-t-alā*	'melt (trn.)'
-āáʔ	*-t-āáʔ*	'get torn'	*-u-s-āáʔ*	'tear (trn.)'

Some apparent irregularities in the coding of the causative/intransitive alternation are explainable. First of all, the causative *-u-x-īkąʔ* 'tie up' has /x/, instead of /s/ or /t/, in position 1. However, pCh **s* > *x* / __ *i* in ZEN (Campbell 2013). Three of the causatives, *-i-tz-ūkúʔ* 'fold', *-i-s-uwīʔ* 'put out, turn off', and *-i-t-alā* 'melt (trn.)' have lexicalized with the iterative prefix *i-* in position 2, which replaces the causative *u-*.

4.2.3 The *u-* causative alternation

The most widespread alternation in ZEN is the *u-* causative derivation, illustrated in (43).

(43) a. *nku-xūʔú na chajlyā=V́ lóʔō na kuchilyū=V́.*
CPL-get.cut DEF bread=DEM RN.with DEF knife=DEM
'The bread was cut with the knife.'
(elicited)

b. *nkā-(**u-**)xūʔú na nkwítzą=V́ jiʔį̄ na chajlyā=V́ lóʔō*
CPL-CAUS-get.cut DEF child=DEM RN DEF bread=DEM RN.with
kuchilyū=V́.
knife=DEM
'The child cut the bread with a knife.'
(elicited)

The prefix *u-* (deleted in hiatus in (43b)) adds an external causer argument to verbs of low transitivity, mostly monovalent inactive verbs from aspect prefix sub-classes Bc, Bt, and Ca. The derived causatives mostly pertain to aspect prefix sub-class Au.

Some aspect prefix sub-class Bc verbs that take the *u-* causative are listed in (44).

(44)	*-jlyā*	'be spread, slip'	*-ū-jlyá*	'spread/smear (trn.)'
	-jnyá	'shake/quake/move'	*-u-jnyā*	'make/move (trn.)'
	-jnii	'grow'	*-ū-jní*	'lengthen (trn.)'
	-jnyāʔ	'liquefy'	*-u-jnyāʔ*	'liquefy (trn.)'
	-kalaʔ	'cool off'	*-u-kalaʔ*	'cool off (trn.)'
	-kīį́	'open up'	*-u-kīį́*	'open (trn.)'
	-kili	'become slimy/slippery'	*-u-kili*	'lubricate'
	-kītę́ʔ	'snap (itrn.)'	*-u-kītę́ʔ*	'snap (trn.)'
	-kiʔi	'get toasted'	*-u-kiʔi*	'toast'
	-kūnáʔ	'get thrown out'	*-ū-jnáʔ*	'throw out'
	-lúū	'get dug'	*-u-lúū*	'dig'
	-láā	'get set free, get taken'	*-u-láā*	'free/take'
	-laja	'get cleaned out'	*-u-lājá*	'clean out'
	-lakwā	'get counted'	*-u-lakwā*	'count'
	-lítiʔ	'sink (itrn.)'	*-u-lītíʔ*	'sink (trn.)'
	-laʔa	'break (itrn.)'	*-u-laʔa*	'break (trn.)'
	-lūkwá	'get swept out'	*-u-lukwā*	'sweep out'
	-nakwą̄	'get blessed'	*-u-nakwą̄*	'bless'
	-su	'come off'	*-u-su*	'pick/remove'
	-tikąʔ	'swing (itrn.)'	*-u-tikąʔ*	'swing (trn.)'
	-wíĩ	'get cleaned off/sifted'	*-u-wíĩ*	'sift/clean off'
	-xę́	'get wrung out'	*-u-xę́*	'wring out'

A few sub-class Ca verbs undergo the *u-* causative derivation, and the *u-* deletes the /a/ of the root. These derived causatives (45) fall into aspect prefix sub-class C2, except for *-ú-(a)tzū* 'pop/burst (trn.)', which ends up in sub-class Au.

(45)	*-aji*	'die'	*-u-(a)jwi*	'kill'
	-ākéʔ	'get cooked'	*-u-(ā)kéʔ*	'cook (trn.)'
	-ātę́	'crumble (itrn.)'	*-u-(ā)tę́*	'take apart'
	-atzu	'pop/burst (itrn.)'	*-ú-(a)tzū*	'pop/burst (trn.)'

Finally, some sub-class Bt verbs undergo the *u-* causative derivation (46).

(46)	*-taʔą*	'walk/go around'	*-u-tāʔą́*	'move (trn.)'
	-tejẽ́	'pass'	*-u-tējẽ́*	'pass (trn.), send'

-teʔę	'be located'	*-u-tēʔę́*	'take/place'
-tūkwá	'be sitting firmly', 'be inside'	*-u-tūkwá*	'load/pour'
-to-nēʔé	'be gathered'	*-u-to+nēʔé*	'gather (trn.)'
-t-uʔu	'be inside'	*-u-t-ūʔú*	'put/pour'
-túwe	'get sliced'	*-u-túwe*	'slice'
-tájā	'get punctured'	*-u-tájā*	'puncture'
-téēʔ	'get peeled/whittled'	*-u-téēʔ*	'peel (trn.)', 'whittle', 'shave oneself'

As these lists show, many prototypically transitive verbs are formally derived causatives in ZEN, which is fairly uncommon cross-linguistically (Haspelmath 1993), for example: 'toast', 'throw out', 'count', 'break', 'sweep', 'bless', 'clean off/sift', 'cut', and many others.

4.2.4 The causative of active verb (*ē+* causative) alternation

Like the *u-* causative alternation, the *ē+* causative auxiliary adds an external causer to an event. However, unlike the *u-* causative it applies to verbs of higher transitivity, such as unergative monovalent verbs (47) and transitive verbs (48). Note that when some consonant initial stems, like *-xiti* 'laugh' (47b), have the *ē+* causative auxiliary, a superfluous causative *u-* is also present in the dependent form of the verb, as discussed in § 2.3.

(47) a. *tzáʔ=wiʔ niī lēʔ* ***nka-xiti*** *tī jniʔ kūnáʔa na reē=Vʔ.*
word=DEM now then CPL-laugh TPLZ offspring female DEF king=DEM
'That is why the king's daughter laughed.'
(text)

b. *tukwi nu chu* ***k-e+k-u-xiti*** *jiʔį jniʔ*
who NMLZ NMLZ.HUM POT-CAUS+POT-CAUS-laugh[.3] RN offspring
kūnáʔa=ąʔ nakwę lēʔ yu=wiʔ saʔą=yu lóʔō.
female=1SG say[.3] then 3SG.M=DEM POT.attach=3SG.M RN.with[.3]
'"Whoever makes my daughter laugh", he said, "he will marry her."'
(text)

(48) a. *ná* ***y-aku=ąʔ*** *suwe=Vʔ lāká.*
NEG CPL-eat=1SG egg=DEM yesterday
'I did not eat the eggs yesterday.'
(elicited)

b. *na nkwítzą=Ý* ***nte-k-ē+k-aku*** *chaja jiʔį̄ na jnēʔ=Ý.*
DEF child=DEM PROG-POT-CAUS+POT-eat[.3] tortilla RN DEF dog=DEM
'The kids are feeding tortillas to the dogs.'
(elicited)

The *ē+* causative applies to some verbs from most of the aspect prefix sub-classes. Beginning with the sub-classes of lower transitivity, we see that quite a few sub-class Bc verbs undergo the alternation (49), though less than the number that take the *u-* causative (44).

(49)	*-jnyá*	'shake/quake/move'	*-ē+k-u-jnyá*	'shake (up)'
	-kanā	'(wood) split apart'	*-ē+k-u-kanā*	'split apart (trn.) (especially wood)'
	-keję	'get an itch'	*-ē+k-u-keję*	'make itch by irritating'
	-lákwi	'boil (itrn.)'	*-ē+k-u-lákwi*	'boil (trn.)'
	-líjī	'get lost'	*-ē+k-u-líjī*	'lose (trn.)'
	-líti?	'sink (itrn.)'	*-ē+k-u-líti?*	'drown (trn.)'
	-lalā	'be early', 'have time'	*-ē+k-u-lalā*	'hurry (trn.)'
	-la+misę̄	'roll'	*-ē+la+t-ísę*	'roll (trn.)'
	-lá?wa	'be carried off by current'	*-ē+k-u-lá?wa*	'send in current'
	-nyaxę?	'get angry'	*-ē+k-u-nyaxę?*	'anger'
	-sāą́	'fall over'	*-ē+k-u-sāą́*	'trip (trn.)'
	-tíkwī	'landslide'	*-ē+k-u-tíkwī*	'cause landslide'
	-tiya?	'be late', 'get behind'	*-ē+k-u-tiya?*	'delay (trn.)'
	-tzá	'be mistaken'	*-ē+k-u-tzá*	'influence in bad way'
	-tzā?ą́	'change (itrn.)'	*-ē+k-u-tzā?ą́*	'exchange/trade'
	-wī?í	'become skinny'	*-ē+k-u-wī?í*	'cause to become skinny'

Some aspect prefix sub-class Ca verbs that take the *ē+* causative are given in (50), about as many as take the *u-* causative (45).

(50)	*-ālú*	'get fat'	*-ē+k-ālú*	'fatten up (trn.)'
	-ākwí	'(wood) rot'	*-ē+k-ākwí*	'make rot'
	-āsú?	'age'	*-ē+k-asū?*	'cause to age'
	-ātzú?	'(fruit) spoil'	*-ē+k-atzū?*	'make spoil'
	-u?we	'(water) dry up'	*-ē+k-u?we*	'dry up (trn.)'
	-ala	'be born'	*-ē+k-ala*	'induce childbirth'

The same is true for the motion and positional verbs of aspect prefix sub-class Bt. Compare (51) with (46). A few verbs undergo both alternations (see § 4.2.5).

(51)	*-taʔą*	'walk/go around'	*-ē+k-u-taʔą*	'move around (trn.)'
	-tejẽ	'pass'	*-ē+k-u-tejẽ*	'(tree) sway'
	-túʔu+jnyá	'run'	*-ē+k-u-túʔu+jnyá*	'make run'
	-tākąʔ	'suffer'	*-ē+k-u-tākąʔ*	'cause to suffer'
	-toǫ	'be standing'	*-ē+k-u-toǫ*	'support'
	-tákwi	'fly'	*-ē+k-u-tákwi*	'make fly'

Some unergative and bivalent verbs of aspect prefix sub-class C2 undergo the *ē+* causative derivation (52), while none take the *u-* causative.

(52)	*-akwiʔ*	'speak'	*-ē+k-akwiʔ*	'make one speak'
	-ata	'bathe oneself'	*-ē+k-ata*	'bathe (trn.)'
	-ākwẽ́	'vomit'	*-ē+k-ākwẽ́*	'make one vomit'
	-útī	'bark'	*-ē+k-uti*	'cause to bark'
	-uwe=tīʔ	'be sad'	*-ē+k-uwe=tīʔ*	'cause to be sad'
	-ūlá	'sing/make music'	*-ē+k-ūlá*	'get one to dance'
	-ulaʔ	'be cold'	*-ē+k-ulaʔ*	'threaten'
	-ūná	'cry'	*-ē+k-ūná*	'make cry'
	-una	'twist into rope'	*-ē+k-una*	'(tree) twist in wind'
	-aku	'eat'	*-ē+k-aku*	'feed (trn.)'
	-utzẽ	'fear'	*-ē+k-utzẽ*	'frighten (trn.)'
	-oʔō	'drink'	*-ē+k-oʔō*	'give to drink'

Likewise, none of the unergative or transitive verbs of aspect prefix sub-classes Ac or A2 undergo the *u-* causative alternation, but several take the *ē+* causative (53).

(53)	*-jyā*	'play'	*-ē+k-u-jyā*	'make play'
	-lyaʔā	'smell (trn.)'	*-ē+k-u-lyaʔā*	'make smell (trn.)'
	-xáʔā	'scream'	*-ē+k-u-xáʔā*	'cause to scream'
	-sōǫ́	'fight'	*-ē+k-u-sōǫ́*	'make fight'
	-xiti	'laugh'	*-ē+k-u-xiti*	'cause to laugh'
	-lyēʔé	'lick'	*-ē+k-u-lyēʔé*	'make lick'
	-i-t-uʔu (sateʔ)	'get dressed'	*-ē+k-u-t-ūʔú*	'dress (trn.)'

4.2.5 The *u-* causative versus the *ē+* causative alternation

From the data in § 4.2.3 and § 4.2.4, it is possible to predict to some extent which causative alternation a verb will undergo. To begin in broad terms, monovalent verbs with non-active subjects tend to take the *u-* causative, while unergative or bivalent verbs tend to undergo the *ē+* causative alternation. In Dixon's (2002) typology of causatives, the semantic parameter that comes closest to capturing the patterns of causative selection in ZEN is that of causee control. People generally do

not control whether they die or not (*u-* causative), but they have some control over fighting, laughing, speaking, or eating (*ē+* causative). However, causee control doesn't fit all of the data. Land does not control when it landslides; things carried off by a current generally have no control; trees can't prevent being twisted in the wind, splitting, or rotting; and water does not volitionally boil, dry up, or carry something off in its current. Nevertheless, all of these verbs take the *ē+* causative.

As was common in pre-Colombian Mesoamerica, Chatino culture is traditionally animist, and this is reflected in the lexicon. The animacy classifier prefix, ZEN *kwi-*, cognate to Proto-Zapotec **kwe=* (Kaufman 1993), occurs on many human nouns and most animal names, such as ZEN *kw-ēlá* 'dancer', *kwi-tzāʔą́* 'sorcerer', *kwi-tiʔ* 'brother (of male)', *kwi-naʔ* 'deer', *kw-īchí* 'jaguar', *kw-eę́* 'bat', *kwi-teeʔ* 'ant', *kw-iyuʔ* 'spider', among many others. Natural forces and heavenly bodies also take the animacy classifier prefix: *kw-ēló* 'current/flow', *kw-eʔę* 'air', *kwi-tīʔyú* 'lightning', *kw-ewīʔ* 'plague', *kwi-se* 'evil spirit', *kwi-tijyuū* 'comet', *kw-ela* 'star', *kwi-tyusūʔ* 'Pleiades', and *joʔō kwi-tzaā* 'sun'. Particularly relevant for the verbs under consideration that take the *ē+* causative is the fact that 'wind' ('(tree) twist in wind') and 'current' (i.e. 'moving water') are classed as animate nouns.

Elsewhere in the lexicon we see that certain natural forces or bodies have *latīʔ* 'living core', the source of the subject enclitic *=tīʔ* that occurs on emotion and cognition verbs (§3.2). Things that have *latīʔ* are limited to people, flowers, the earth ('quake'), mountains ('landslide'), trees (the verbs where wood rots, splits, or twists in the wind), eyes, heads, oceans (water, current), air, banana plants ('spoil'), and corn plants. Therefore, considering how animacy is coded in ZEN, it becomes evident that the verbs that participate in the *ē+* causative alternation in (49) through (53) are those whose typical subject either has some control in the event or is classed as animate, with the force that drives the event being conceived as coming from within the subject. Verbs that undergo the *u-* causative alternation typically have subjects classed as inanimate, and in cases where the subject is animate, the force that propels the action is conceived of as coming from outside the affected subject (inactive). For example, trees and branches are animate and can be cut, sliced, or snapped, but since the force of these actions is conceived of as being external, these verbs take the *u-* causative. These generalizations are supported by the limited cases where verbs participate in both causative alternations (54).

(54)	a.	*-t-uʔu*	'be inside'
		***-u-** t-ūʔú*	'put/pour' (lit. 'cause to be inside')
		***-ē**+k-u-t-ūʔú (sateʔ)*	'dress (trn.)' (lit. 'cause to be inside (clothes)')
		-i-t-uʔu (sateʔ)	'get dressed' (lit. 'be inside (clothes) again')
	b.	*-jnyá*	'shake/quake/move'
		***-u-** jnyā*	'make/build'
		***-ē**+k-u-jnyá*	'shake (up) (trn.)'

c. *-líti?* ‘sink (itrn.)’
*-**u-**lītí?* ‘sink (trn.)’
*-**ē**+k-u-líti?* ‘drown (trn.)’

d. *-tejẹ̄* ‘pass (itrn.)’
*-**u-** tējẹ́* ‘pass/send (trn.)’
*-**ē**+k-u-tejẹ̄* ‘sway (tree in wind)’

e. *-ta?ą* ‘walk/go around’
*-**u-** tā?ą́* ‘move around (trn.)’
*-**ē**+k-u-ta?ą* ‘move back and forth (trn.) (so it frees)’

A particularly interesting example is the verb ‘cut’ (55), which semantically requires an external agent wielding an instrument. It can occur in the *ē+* causative alternation, and the event is interpreted as being inchoative, or rather that the force of the action is not external but internal. Therefore, instead of adding a causer as expected, the reverse happens, removing any possibility of there being any unexpressed agent.

(55) *-xū?ú* ‘get cut’
-u-xū?ú ‘cut (trn.)’
-ē+k-u-xū?ú ‘snap/cut by itself’

4.2.6 The intransitive alternation

The intransitive alternation derives a less transitive verb by adding the intransitivizer prefix *y-* to a simplex root of higher transitivity. The effects of the alternation on a verb’s meaning and argument structure are idiosyncratic, and there are only six verbs yet identified that undergo it (one from the 70-meaning list: ‘eat’). Therefore, it is not very useful for dividing the verbal lexicon into classes, and it is not included in the appendix.

For a few verbs, like ‘eat’, the basic verb is bivalent (56a), and the derived verb (56b) is monovalent with the subject corresponding to the P of the basic verb.

(56) a. *ná* ***y-aku*** *ji?į́ na chaja=V́.*
NEG CPL-eat[.3] RN DEF tortilla=DEM
‘She did not eat the tortilla.’
(elicited)

b. *jwaā=V́ ná nka-s-atą jį?į́ na kwichī=V́ jā* ***ch-áku*** *nu=wá.*
Juan=DEM NEG CPL-TRN-peel[.3] RN DEF rabbit=DEM CONJ POT.ITRN-eat NMLZ=DEM
‘Juan did not skin the rabbit for it to be eaten.’
(offered)

The verb 'pay for' behaves similarly (57).

(57) *-isu* 'pay for' *-y-asu* 'be paid for'

The bivalent, agentive verb *ukwą̄* 'grab' (58a) behaves differently in the intransitive alternation. The less transitive alternant remains bivalent but is less agentive, meaning 'receive' (58b).

(58) a. *jwaā nkay-ukwą̄ jiʔį̄ keʔnā.*
Juan CPL-grab[.3] RN plate
'Juan grabbed the plate.'
(elicited)

b. *jwaā=Ý nk-**y**-ukwą̄ jiʔį̄ na keʔnā.*
Juan=DEM CPL-ITRN-grab[.3] RN DEF plate
'Juan received the plate.'
(elicited)

Another verb that participates in the intransitive alternation is the ambitransitive *-ajī* 'get' (see also § 4.1.2). Its bivalent usage is illustrated in (59a), and the derived less-transitive alternant, also bivalent, means 'find' (59b). In the latter, the subject and object are less affected since no possession is necessarily taken of the object.

(59) a. *wala nku-(a)jwī tī kwaʔą jiʔį̄ nu=węʔ?*
where CPL-get TPLZ 2PL RN NMLZ=DEM
'Where did you get that?'
(text)

b. *wiʔ niī lēʔ nu nk-**y**-ajā tī nu=węʔ jiʔį̄=yu.*
there now then NMLZ CPL-**ITRN**-get TPLZ NMLZ=DEM RN=3SG.M
'Then there it was that she found him.'
(text)

Another case is 'vomit', a verb of the higher transitivity sub-class C2 (60a). The derived less transitive verb (60b) refers to when food or liquid comes back up on someone (reflux), an event less complete than vomiting.

(60) a. *nti-(ā)kwę́=ą̄ʔ kosā nt-aku=ą̄ʔ.*
HAB-vomit=1SG thing HAB-eat=1SG
'I throw up things that I eat.'
(elicited)

b. *nu=węʔ nte-**y**-ākwę́ jiʔį̄ ike=ūʔ.*
NMLZ=DEM PROG-**ITRN**-vomit[.3] RN head=3PL
'This (poison) is going up into their heads.'
(text)

A verb pair with a similar pattern is the verb *-atzu* 'pop/burst (itrn.)', which in the intransitive alternation means 'unwind/unravel' (61). The subject that undergoes the change is less affected since its physical integrity is only partly disrupted.

(61) *-atzu* 'pop/burst' *-y-atzu* 'unwind/unravel'

Therefore, the results of the intransitive alternation include: removal of agents, lower agency, less affected arguments, and/or less completed events. The verbs presented here are the only documented cases that undergo the alternation. Due to the rarity of the alternation and its varied effects, it is hard to isolate a single parameter that would determine which verbs undergo it. However, all of the changes align with Hopper & Thompson's (1980) notion of lower versus higher transitivity.

4.2.7 The applicative alternation

The applicative is coded on the verb by the incorporation of the relational noun *lóʔō* 'with', which otherwise typically flags comitative and instrument NPs (§ 2.2.2). With intransitive motion verbs such as 'go' (62a), the applicative adds a patientive object, and the verb becomes 'take' (i.e. 'go with') (62b).

(62) a. *tz-aa=na* *nakwę=ūʔ*.
POT-go=1PL.INCL say=3PL
'"Let's go", they said.'
(text)

b. *tz-a+**lóʔō*** *nāáʔ* *kichi*.
POT-go+RN.with 1SG quern
'I will take a quern.'
(text)

Other intransitive verbs with which the applicative acts the same are in (63). They are also motion verbs.

(63) *-taʔą* 'walk/go around' *-taʔą+lóʔō* 'carry'
-jná 'flee' *-u-jná+lóʔō* 'take away'

For a few unergative verbs and one transitive verb, the applicative adds a malefactive argument, as for *-xiti* 'laugh' (64).

(64) *nyāʔā jā tāká=ūʔ nti-**xiti** nti-**xiti**+**lóʔō**=ūʔ jiʔį=wą*.
see.2SG CONJ exist=3PL HAB-laugh[.3] HAB-laugh+RN.with=3PL RN=2PL
'You see, there are those who laugh. They laugh at you (pl.).'
(text)

Other verbs with malefactive applicatives are listed in (65). In the case of 'play', the malefactive interpretation only holds for volitional objects. With inanimate objects, it means 'play with', as a toy.

(65)	*-jyā*	'play'	*-jyā+lóʔō*	'mess with'
	-xáʔā	'scream'	*-xáʔā+lóʔō*	'scream at'
	-ʔne	'do'	*-ʔne+lóʔō*	'mistreat/punish'

For a couple of verbs, the applicative adds a beneficiary object (66). These are stative, including the copula 'be' and the positional 'be standing'.

(66)	*-ā*	'be done', 'be'	*-ā+lóʔō*	'help/accompany'
	-toǫ	'be standing'	*-toǫ+lóʔō*	'support/defend'

It should be noted that the ZEN applicative is not used to promote instruments. However, with verbs of hitting, the instrument itself can be incorporated into the verb, as will be discussed next.

4.2.8 The instrument incorporation alternation

In ZEN, the instrument of a transitive verb of hitting (67a) may be incorporated into the verb when it is a likely instrument for the action, like a stick (67b) or a body part.

(67) a. ***nkā-rá*** *na nkwítzą=Ý jiʔį́ na kwénā=Ý lóʔō na ya*
CPL-hit DEF child=DEM RN DEF snake=DEM RN.with DEF CLF.wood
látī=Ý.
thin=DEM
'The child hit the snake with the stick.'
(elicited)

b. *nte-k-ē+k-utzę x-ālá=ą̄ʔ jiʔį́=ą̄ʔ nu*
PROG-POT-CAUS+POT-fear POSS-dream=1SG RN=1SG NMLZ
nte-rá+*yaka=ūʔ jiʔį́=ą̄ʔ.*
PROG-hit+wood=3PL RN=1SG
'My dreams about people hitting me with a stick are frightening me.'
(offered)

Aside from verbs of hitting, actions which involve the use of body parts as instruments may undergo instrument incorporation (68). The body parts are as follows: *yaāʔ* 'hand', *kiyaʔ* 'foot', *xetąʔ* 'fingernail', *jne* 'finger', and *tuʔwa* 'mouth'.

(68)	*-u-s-uweʔ*	‘scrape/smooth out’	*-u-s-uweʔ+yaāʔ*	‘knead/rub’
			-u-s-uweʔ+kiyaʔ	‘stomp on’
			-u-s-uweʔ+xetąʔ	‘scratch’
	-ojoʔ	‘sting/poke’	*-ojoʔ+jne*	‘finger poke’
	-u-suʔū	‘show/teach’	*-u-suʔū+jne*	‘point at’
	-ū-jlyá	‘spread/smear (trn.)’	*-ū-jlyá+yaāʔ*	‘spread by hand/ massage’
	-ūlá	‘make music/sing’	*-ūlá+tuʔwa*	‘sing’
			-ūlá+kiyaʔ	‘dance’

ZEN verbs from the 70-meaning list that undergo the instrument incorporation alternation are: *y-ūlá* ‘sing/make music’, *nka-(ū)rá* ‘hit’, *nka-ʔni* ‘beat’, and *nka-(u-)suʔū* ‘show/teach’. Since the incorporated objects are body parts or sticks, high frequency of a particular verb/instrument pair may favor incorporation. Other instrument incorporations are more idiomatic than those presented here, so they are better treated as lexicalizations and not discussed here.

5 Conclusions

The ZEN aspect prefix sub-classes of verbs can be roughly ordered according to increasing transitivity, characterized by polyvalence and/or higher agentivity/animacy of their typical subject (Figure 1). Verbs further split into two large classes depending on whether they undergo the *u-* causative or the *e+* causative alternation. The former is restricted to verbs of sub-classes Bc, Ca, and Bt. They are verbs of lower transitivity whose subject has little control, or the energy that brings about the event is conceived of as external. On the other hand, some verbs from almost all of the aspect prefix sub-classes participate in the causative of active verb (*ē+* causative) alternation. In those cases, the energy behind the event is conceived of as coming from within the subject or the typical subject is animate in ZEN terms.

The same distinction of external versus internal perspective is reflected in the fairly rare active/inactive alternation, coded by the transitivizer *t-*/*s-* versus the

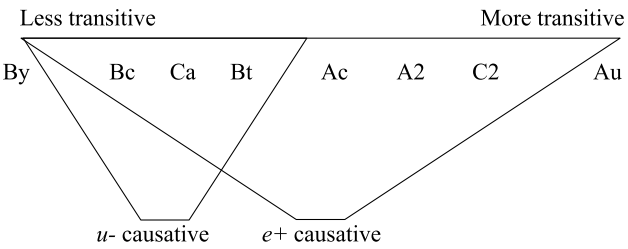

Fig. 1

intransitivizer *y-*. It is possible that this pattern was previously more productive and the initial *t-* of the sub-class Bt verbs may have come from the transitivizer prefix since verbs of motion and position are internally driven or oriented.

Many canonically transitive verbs, like 'kill', 'break', 'cut', 'open', and 'cook', and some canonical ditransitives, like 'show', 'take away', and 'send' are *u-* causatives, surprisingly derived from less transitive simplex roots of sub-classes Bc, Ca, or Bt. Other transitives and ditransitives, like 'give', 'look for', and 'sell', are underived and belong to the smaller, more transitive, sub-classes Ac, A2, and C2. A few verbs of higher transitivity undergo the intransitive alternation. The effects of the alternation are varied, so it is not evident that any particular semantic parameter is responsible for it.

The verbs that undergo the equipollent causative/intransitive alternation can best be described as those that have an agent that physically manipulates a typically non-volitional object, such as 'peel', 'shell', 'cover', 'crush', 'spill', 'tie', 'untie', 'melt', 'burn', 'split', 'scrape', 'spread (seeds)', and 'tear'.

Verbs of motion and position group together in aspect prefix sub-class Bt, and verbs of emotion and cognition share the coding pattern of having the possessed body part clitics *=tīʔ* 'living core' or *=rīké* 'heart' as subject.

Verbs that have body parts as instruments group together with the verbs of hitting in undergoing the instrument incorporation alternation. The applicative alternation occurs with some motion verbs, some unergative verbs of expression ('play', 'laugh', and 'scream'), and a couple of stative verbs. In general, motion verbs that take the applicative add a patient argument, the unergatives of expression add a maleficiary, and stative verbs add a beneficiary.

There is little in the way of valency reducing mechanisms in ZEN. There is no passive voice or anticausative derivation aside from the few verbs in the intransitive alternation. ZEN lacks the *spray* and *wipe* locative alternations (Levin 1993), using different verbs to express those alternants. There is also no dative alternation. However, one could argue that Chatino has an uncoded possessor/recipient alternation in ditransitives due to the ambiguity that arises there from the multiple functions of *jiʔi̱*. Most verbs only participate in one alternation, and aside from the two causatives and perhaps the equipollent causative/intransitive alternation, most alternations apply to quite limited sets of verbs. The semantic parameter most relevant for valency alternations in ZEN is the internal versus external perspective on the event or action, which corresponds roughly to the unaccusative/unergative or inactive/active distinction (see Shibatani & Pardeshi 2002 for discussion).

Appendix: Summary of counterpart verbs and alternations

#	Meaning label	Verb form	Coding		Selected Alternations		
			Coding frame schema	Aspect prefix sub-class	Applicative[4]	Causative of active verb	*u*-Causative alternation
69	RAIN	*nkw-eʔe (choo)*[5]	V	A2	–	–	–
46	BLINK	*nk-y-uwi+ntoo*	V 1	By	–	–	–
47	COUGH	*nka-tuuʔ*	V 1	Ac	–	–	–
49	RUN	*nkū-túʔu+jná*	V 1	Bt	m	+	–
52	JUMP	*nkw-é+kwaą̄*	V 1	A2	–	+	–
57	LAUGH	*nka-xiti*	V 1	Ac	+	+	–
58	SCREAM	*nka-xáʔā*	V 1	Ac	+	+	–
59	FEEL PAIN	*tiʔi*	V 1	(Adj)	–	–	–
59	FEEL PAIN	*tiʔi nkw-ii*	V 1	A2	–	–	–
60	FEEL COLD	*nkay-ulaʔ*	V 1	C2	–	+[6]	–
61	DIE	*nku-jwi (1)*	V 1	Ca	–	–	+
62	PLAY	*nka-jyā*	V 1	Ac	+	+	–
63	BE SAD	*nkay-uwe=tīʔ*	V 1	C2	–	–	–
64	BE HUNGRY	*nk-y-uteʔ*	V 1	By	–	+	–
65	ROLL	*nku-lā+misę̄*	V 1	Bc	–	+	–
67	BURN	*nk-y-akę̄*	V 1	By	–	–	–
68	BE DRY	*witi*	V 1	(Adj)	–	–	+[7]
80	BOIL	*nkū-lákwi*	V 1	Bc	–	+	–
82	BE ILL	*n-kā+kitza*	V 1	Ca	–	–	–
83	CRY	*y-ūná*	V 1	C2	–	+	–
48	CLIMB	*nk-yó+saʔą*	V 1 (LOC2)	By	–	–	–

4 The applicative alternation adds an object that may be malefactive (malef.), benefactive, or patientive (pat.), depending on the verb.

5 All verb forms in Table 1 are inflected for completive aspect.

6 The causative form means 'threaten' and is thus idiosyncratic.

7 A verb 'dry (itrn.)' may be zero-derived from the adjective.

#	Meaning label	Verb form	Coding		Selected Alternations		
			Coding frame schema	Aspect prefix sub-class	Appli-cative	Causa-tive of active verb	*u*-Cau-sative alterna-tion
50	SIT	*n-tyukwā*	V 1 (LOC2)	Bt	–	–	–
51	SIT DOWN	*nkw-ē+saʔą*	V 1 (LOC2)	A2	–	–	–
51	SIT DOWN	*nkw-ē+tyukwā*	V 1 (LOC2)	A2	–	–	–
54	GO	*y-aa*	V 1 (LOC2)	C2	+	–	–
56	LIVE	*n-kā+tāká*	V 1 (LOC2)	Ca	–	–	–
1	EAT	*y-aku*	V 1 *jiʔɻ̄*+2	C2	–	+	–
2	HUG	*nk-y-uʔu+xiiʔ*	V 1 *jiʔɻ̄*+2	By	–	–	–
2	HUG	*nkā-tūkwá+xiiʔ*	V 1 *jiʔɻ̄*+2	Au	–	–	–
3	LOOK AT	*nkā-naʔa*	V 1 *jiʔɻ̄*+2	Ac	–	–	–
4	SEE	*nkā-naʔa*	V 1 *jiʔɻ̄*+2	Ac	–	–	–
5	SMELL	*y-ukwęʔ*	V 1 *jiʔɻ̄*+2	C2	–	+	–
6	FEAR	*y-utzę*	V 1 *jiʔɻ̄*+2	C2	–	+	–
7	FRIGHTEN	*nkw-ē+k-utzę*	V 1 *jiʔɻ̄*+2	A2	–	●	–
8	LIKE	*y-a+toǫ=tīʔ*	V 1 *jiʔɻ̄*+2	C2	–	–	–
9	KNOW	*n-tzuʔu+ntoo*	V 1 *jiʔɻ̄*+2	By	–	–	–
10	THINK	*nkā-tāá=tīʔ*	V 1 *jiʔɻ̄*+2	A irr.	–	–	–
11	SEARCH FOR	*nkwī-tyána*	V 1 *jiʔɻ̄*+2	A2	–	–	–
12	WASH	*nkw-ē+k-ata*	V 1 *jiʔɻ̄*+2	A2	–	●	–
14	SHAVE	*nka-téēʔ*	V 1 *jiʔɻ̄*+2	Au	–	–	●
15	HELP	*nkwi-tyā+tyūkwá*	V 1 *jiʔɻ̄*+2	A2	–	–	–
16	FOLLOW	*y-a+la-saʔą*	V 1 *jiʔɻ̄*+2	C2	–	–	–
17	MEET	*nk-y-uʔu+ntoo*	V 1 *jiʔɻ̄*+2	By	–	–	–
20	SHOUT AT	*nka-xáʔā+lóʔō*	V 1 *jiʔɻ̄*+2	Ac	●	–	–
32	TEAR	*nkā-s-āáʔ*	V 1 *jiʔɻ̄*+2	Au	–	–	–
53	SING	*(nka-)y-ūlá*	V 1 *jiʔɻ̄*+2	C2	–	+	–
55	LEAVE	*nkū-túʔu*	V 1 *jiʔɻ̄*+2	Bt	–	–	–
66	SINK	*nkū-lítiʔ*	V 1 *jiʔɻ̄*+2	Bc	–	m[8]	+

8 The causative form means 'drown (trn.)'.

#	Meaning label	Verb form	Coding		Selected Alternations		
			Coding frame schema	Aspect prefix sub-class	Applicative	Causative of active verb	*u*-Causative alternation
73	DIG	*nkā-lúū*	V 1 *jiʔi̱*+2	Au	–	–	●
78	HEAR	*y-una (2)*	V 1 *jiʔi̱*+2	C2	–	–	–
86	GET	*nk-y-ukwą̄*	V 1 *jiʔi̱*+2	By	–	–	–
87	WANT	*nkw-ii*	V 1 *jiʔi̱*+2	A2	–	–	–
21	TELL	*nakwę*	UTT1 V 2 *jiʔi̱*+3	irr.	–	–	–
22	SAY	*nakwę*	UTT1 V 2 *jiʔi̱*+3	irr.	–	–	–
24	BUILD	*nka-jnyā*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	Au	–	–	●
25	BREAK	*nka-laʔa*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	Au	–	–	●
26	KILL	*nkay-u-jwi*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	C2	–	–	●
28	HIT	*nkā-rá*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	Au	–	–	–
29	TOUCH	*y-alaʔ*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	C2	–	–	–
30	CUT	*nkā-xūʔú*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	Au	–	–	●
33	PEEL	*nka-s-atą*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	Au	–	–	–
38	CARRY	*nka-teę*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	Au	–	–	●
43	COVER	*nka-t-ākǫ́ʔ*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	Au	–	–	–
44	FILL	*nka-ʔne+chá+tzaʔą*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	A irr.	–	–	–
71	GRIND	*nkay-oō*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	C2	–	–	–
79	COOK	*nkay-ū-kéʔ*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	C2	–	–	●
85	MAKE	*nka-jnyā*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	Au	–	–	●
86	GET	*nku-jwī (2)*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	Ca	–	–	–
88	CLOSE	*nka-t-ākǫ́ʔ*	V 1 *jiʔi̱*+2 (*lóʔō*+3)	Au	–	–	–
13	DRESS	*nkw-ē+k-u-tūʔú (s-ateʔ)*	V 1 *jiʔi̱*+2 3	A2	–	●	–
18	TALK	*y-akwiʔ*	V 1 *jiʔi̱*+2	C2	–	–	–
23	NAME	*nka-lōó+naa*	V 1 *jiʔi̱*+2 3	Au	–	–	–
19	ASK FOR	*nkā-nána*	V 1 *jiʔi̱*+2 *jiʔi̱*+3	Au	–	–	(●)
27	BEAT	*nka-ʔni*	V 1 *jiʔi̱*+2 *jiʔi̱*+3	Ac	–	–	–
31	TAKE	*nkā-láā*	V 1 *jiʔi̱*+2 *jiʔi̱*+3	Au	–	–	●

#	Meaning label	Verb form	Coding		Selected Alternations		
			Coding frame schema	Aspect prefix sub-class	Applicative	Causative of active verb	*u*-Causative alternation
34	HIDE	*nka-to+kāchíʔ*	V 1 *jiʔɬ*+2 *jiʔɬ*+3	Au	–	–	–
35	SHOW	*nka-suʔū*	V 1 *jiʔɬ*+2 *jiʔɬ*+3	Au	–	–	(●)
36	GIVE	*nkā-tāá*	V 1 *jiʔɬ*+2 *jiʔɬ*+3	A irr.	–	–	–
37	SEND	*nkā-tējé́*	V 1 *jiʔɬ*+2 *jiʔɬ*+3	Au	–	–	●
39	THROW	*nkā-nēʔé*	V 1 *jiʔɬ*+2 *jiʔɬ*+3	Au	–	–	(●)
41	PUT	*nkā-t-ūʔú*	V 1 *jiʔɬ*+2 *jiʔɬ*+3	Au	–	m[9]	●
42	POUR	*nkā-t-ūʔú*	V 1 *jiʔɬ*+2 *jiʔɬ*+3	Au	–	m	●
42	POUR	*nkā-tūkwá*	V 1 *jiʔɬ*+2 *jiʔɬ*+3	Au	–	–	●
45	LOAD	*nkā-tūkwá*	V 1 *jiʔɬ*+2 *jiʔɬ*+3	Au	–	–	●
75	BRING	*y-aa+lóʔō*	V 1 *jiʔɬ*+2 *jiʔɬ*+3	C2	●	–	–
76	STEAL	*nka-wanā*	V 1 *jiʔɬ*+2 *jiʔɬ*+3	Au	–	–	(●)
77	TEACH	*nka-suʔū*	V 1 *jiʔɬ*+2 *jiʔɬ*+3	Au	–	–	(●)
40	TIE	*nkā-x-īkɑ́ʔ*	V 1 *jiʔɬ*+2 *jiʔɬ*+3 *lóʔō*+4	Au	–	–	–
70	BE A HUNTER	*no verbal counterpart*	N/A	(Noun)	–	–	–

Legend: + occurs regularly, – does not occur, m marginally, ● verb form is the result of the alternation, (●) the verb form appears to be the result of the alternation but the more basic verb from which it would have been derived is no longer in the lexicon,
Morpheme boundaries: – prefix-stem; = host=enclitic; + stem+stem (i.e. compound).

9 The *ē-* causative derived form is idiosyncratic and means 'put the blame on'.

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Abbreviations

ANIM	animate
ASP	aspect
CONJ	conjunction
CPL	Completive Aspect
DERV	derivation
HAB	Habitual Aspect
HUM	human
ITER	iterative
ITRN	intransitivizer
POT	Potential Mood
RN	relational noun
RSP	respectful
STAT	Stative Aspect
TPLZ	topicalizer
TRN	transitivizer

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