

An Outline of Valency-Reducing Operations in Chukchi

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An Outline of Valency-Reducing Operations in Chukchi

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This paper is an exploration of the valency-reducing operations in Chukchi. Our purpose is to deepen our theoretical understanding of the voice system in Chukchi, focusing on the morphological processes that mark the relationship between intransitive verbs and transitive verbs: the antipassive, the reflexive and the anticausative.

In Chukchi, noun incorporation is also related to valency-reducing operations. When an object is incorporated into the verb stem, the number of core arguments the verb takes is reduced by one, and the verb is detransitivized. So, we will also briefly introduce object incorporation in Chukchi.

Key words: Chukchi, transitive, intransitive, antipassive, anticausative, reflexive, object incorporation

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 Antipassive
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1. Introduction

Chukchi,¹⁾ belonging to the Chukchi-Kamchatkan language family, is spoken by about 6400 people living mainly on Chukotka and its adjacent areas in far northeast Siberia, of the Russian Federation.

In the present paper, I will examine the valency-reducing operations in Chukchi, that is to say to outline the relationship between intransitive and transitive verbs. Data are from my

fieldwork on Chukchi.

The valency-increasing operation is more than a valency-reducing operation. The morphological causative not only applies to intransitive verbs, but also applies to transitive verbs. Besides transitive formation from intransitive verbs, there are two ways to increase valency: the morphological causative and the analytic causative. The morphological causative is the most productive.

Previous studies have described and discussed the antipassive, such as Nedjalkov (1979) and Kozinsky *et al.* (1993), but little substantial work has been done on the anticausative so far. I have described the valency-increasing operations in detail, but only briefly touched upon valency-reducing operations (Kurebito 2008a and 2008b).

Chukchi has valency-reducing derivations as well as valency-increasing ones. There are three types of valency-reducing derivations in Chukchi: the antipassive, the reflexive, and the anticausative. These forms are derived by adding the prefix *ine*- (its allomorphs are *ine-/ena-*), and the suffixes *-tku* (its allomorphs are *-tku/-tko*), *-twa* and *-et* (its allomorphs are *-et/-at*) to a transitive verb stem.

2. Chukchi as a polysynthetic language

Chukchi is an absolutive-ergative language. The subject of an intransitive verb and the direct object of a transitive verb take the absolutive case, while the subject of a transitive verb takes the ergative case. Chukchi does not have a distinct ergative marker. The instrumental case marker has the same form as the ergative case marker.

Intransitive verbs in Chukchi agree with the subject (S), and transitive verbs agree with the subject (S/A) and object $(O/IO)^{2}$ in person and number. Agreement is shown by prefixes, suffixes and circumfixes which may indicate person, number, and mood, as well as subject and object features.

Chukchi is a polysynthetic language, structurally very complex. Two or more word stems can combine into one word, or many affixes may occur in a single word. Sometimes a word in Chukchi may be the functional equivalent of a whole sentence in another language. See the following two examples.

- (1) t-∂-kuk-im∂l-nilu-y?ek-Ø
 1sG.S-E-pot-water-wash-1sG.S-PAST
 'I washed out the pot with water.'
- (2) n-∂-lye-ra-ŋaw-∂-n-rayt-an-ŋ-∂-qen
 IMPF-E-very-want-woman-E-TR-go home-TR-want-E-3sG.s
 'He really wants to bring the woman home.'

In (1), the transitive object *kuk* 'cookpot' and the instrument *imal* 'water' are incorporated into the transitive verb *nilu* 'wash'. This incorporative complex verb is inflectable as an intransitive. (2) also has the core argument reduced, with the whole complex word inflectable as an intransitive. But it's structure is different from (1): to the basic verb stem $ra\chi t$ 'go home'

the circumfix *r*-...-*an* (< *r*-...-*at*) is added, and the transitive verb 'to bring' is derived, with the object noun ηaw 'woman' incorporated into the new transitive verb. Moreover, the lexical circumfix ra-...- η 'to want' is added to this incorporative complex word.

In Chukchi, there are some affixes which express substantive concrete verbal meanings, such as the circumfix ra-...- η 'to want' above, that in other languages would occur as independent words. In the following example, - $\gamma arke$ 'gather' functions as a free-standing verb.

(3) *laye-w?ej-yarke-l?et-y?et-Ø* very-grass-gather-much-3PL-PAST
 'They gathered a lot of grass.'

3. Verb classes

Chukchi has three classes of verbs: intransitive verbs, which are inflectable only as intransitives, but can be used transitively when they take valency-increasing morphological marking (e.g., *jalqet* 'sleep'); transitive verbs, which are inflectable only as transitives, but can be used intransitively when they take valency-reducing morphological marking (e.g., *piri* 'catch'); and ambitransitives (or labile verbs), which are inflectable either way, and can be used as transitives and intransitives without morphological change (e.g., *mle* 'break'). (4) and (5) are examples of verbs that have been made intransitive/transitive by the addition of morphological marking.

- (4) *ŋinqej ats-ə-y?e-Ø* boy.(ABS.SG) hide-E-3SG.S-PAST 'The boy hid.'
- (5) *ŋinqej* t-*∂*-r-ats-*∂*-ŋat-γ?an-Ø
 boy.(ABS.SG) 1sg.s-e-tr-hide-e-tr-3sg.o-past
 'I made the boy hide.'

Chukchi does not have a benefactive marker. But intransitive verbs can be used as transitive verbs when they have to express a beneficiary meaning. Compare the following two sentences.

- (6) *all?a puture-y?i-Ø* mother.(ABS.SG) sing-3SG.S-PAST 'The mother sang a song'
- (7) *all?a-ta* puture-nin-Ø nenena
 mother-ERG dance-3sg.s/3sg.o-PAST child.(ABS.SG)
 'The mother danced for the child.'

In (6), puture 'dance' is an intransitive verb, but if the speaker needs to express a benefi-

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ejsyit	'wave'	melew	'be cured'
i?et	'be cloudy'	jalɣt	'nomadize'
jlqet	'sleep'	melew	'be cured'
?eqiml	'drink vodka'	qametwa	'eat'
ikwisi	'drink (water)'	uwi	'boil'
tip?ejŋe	'sing'	puture	'dance'
Transitive-onl	y verbs		
piri	'catch'	jl	'give'
tm	'kill'	pnr	'hand, give'
jp	'waer'(clothes)	qewi	'get, receive'
əpat	'boil'	ru	'eat'
pl	'drink (water)'	rytku	'scratch'

ciary meaning such as (7), the verb can be inflected as a transitive.

What must be noted is that not all intransitive verbs can be inflected as transitives to express a beneficiary meaning. So we must determine what kind of intransitive verbs can express beneficiary meaning and what kind of intransitive verbs can not express a beneficiary meaning.

See the examples of intransitive and transitive verb in Table 1 above.

Note that Chukchi has suppletive verb pairs which are synonymous. Their only difference is that one stem is transitive and the other is intransitive. Examples are listed in Table 1 above. For example, *qametwa* 'eat (intr)' vs. *ru* 'eat (tr)', *ikwisi* 'drink (intr)' vs. *pl* 'drink (tr)', *qt* 'go (intr)' vs. *jt* 'go (tr)', *wane* 'sew (intr)' vs. *tni* 'sew (tr)', and *uwi* 'boil (intr)' vs. *apat* 'boil (boil)' are all synonymous, differing only in transitivity. These suppletive verbs cannot change their transitivity by adding morphological affixes as shown in the following two examples (8) and (9).

- (8) q-∂-qametwa-ye
 IMPR.2SG-E-eat-2SG.S
 'You eat.'
- (9) *q-∂-nu-y∂n* IMPR.2SG-E-eat-2SG.S/3SG.O 'You eat it.'

Table 2 shows a group of ambitransitve verbs in Chukchi. As we mentioned above, Chukchi transitive verbs and intransitive verbs are inflected differently from each other. So, these ambitransitive verbs can be identified as transitive or intransitive by their inflectional affixes.

The following two examples of the ambitransitive verb mle 'break' show this verb

Ambitransitive (labile) verbs			
iw	'say'	tul?et	'steal'
peylatko	'knock'	winret	'help'
mle	'break'	walom	'hear'
ejp	'close'	rr?əlet	'move'
ir	'hit'	male	'wipe'
2ir	'cross'	ilytew	'wash'

Table 2

inflected as an intransitive in (10), and inflected as a transitive in (11).

- (10) *ott-ə-lyən mle-y?i-Ø* stick-E-ABS.SG break-3SG.S-PAST 'The stick broke.'
- (11) *t-ə-mle-y?en-Ø* ott-ə-lyən 1sg.s-e-break-3sg.o-past stick-e-abs.sg 'I broke the stick.'

According to Kozinsksy *et al.* (1988: 660), the ambitransitive (labile) verbs comprise about 15% (ca. 300 items) of the Chukchi verbal lexicon.

4. Object incorporation and valency change

As we mentioned above, the noun incorporative formation is very productive in Chukchi. Object incorporation is the most frequent type. When an object is incorporated into the verb stem, losing the status of a syntactic argument, the number of core arguments the verb takes is reduced by one, and the whole incorporative complex predicate takes an intransitive marker. Compare the following transitive sentence (12a) and intransitive sentence (12b).

(12a) <i>?ətt-e</i> p	iri-nin-Ø	melota-lyən ³⁾
dog-erg c	atch-3sg.s/3sg.o-past	hare-ABS.SG
'The dog cau	ght the hare.'	
(12b) <i>?ətt-ə-n</i>	milute-piri-y?i-Ø	
dog-e-abs.sg	hare-catch-3sg.s-pas	Т
'The dog cau	ght a hare.'	

In (12a), the object *melota* 'hare' takes the absolutive case, while the subject *?att* 'dog' takes the ergative case. But in (12b), the object *milute* 'hare' is incorporated into the verb *piri* 'catch'. So the valency has changed, and the verbal complex is inflected as an intransitive. Compare the following two causative sentences.

- (13a) *yinqej t-ə-n-terya-k-w?an-Ø* boy.(ABS.SG) 1SG.S-E-CAUS-CRY-E-CAUS-3SG.O-PAST 'I made the boy cry.'
- (13b) *t-ə-ŋenqaj-ə-n-terya-k-w?ak-Ø*⁴⁾ 1sg.s-e-boy-e-caus-cry-e-caus-1sg.s-past 'I made a boy cry.'

In (13a), the direct object (causee) *ŋinqej* 'boy' is not incorporated into the verb stem *terya* 'cry'. In contrast, in (13b), the direct object (causee) *ŋenqaj* 'boy' is incorporated into the verb stem *terya* 'cry'. So, the number of core arguments is reduced, and the verbal complex is inflected as an intransitive.

If a ditransitive verb takes both a direct and an indirect object, only the direct object can be incorporated into the verb, in which case the logical indirect object is promoted to direct object. Thus, the valency does not change in this situation. See the following pair.

(14a) <i>əll?at-a</i>	nanan-ytə 5)	jəl-nin-Ø	miməl
mother-ERG	child-dat	give-3sg.s/3sg.o-past	water.(ABS.SG)
'Mother gave	the water to t	he child.'	

(14b) əll?at-a	nenenə	miml-ə-jəl-nin-Ø
mother-ERG	child.(ABS.SG)	water-E-give-3sg.s/3sg.o-past
'Mother gave	e some water to th	e child.'

These two examples are both transitive sentences. In (14a), the three-place verb *jəl* 'give' takes the direct object *miml* 'water', which is marked by the absolutive case, and the indirect object *nanana* 'child', which is marked by the dative case. In contrast, in (14b) the direct object *miml* 'water' is incorporated into the verb stem *jəl* 'give', and the indirect object *nanana* (< *nenenə*) 'child' is promoted to the direct object, which we know because it is marked by the absolutive case. In (14b), although one core argument (direct object) is reduced, another core argument (indirect object) is left. Thus, the valency does not change in (14b).

Note that, also in possessive incorporation, the head noun is incorporated, while the modifier is left out of the incorporative complex, and is marked by absolutive case, being raised to object. So the valency does not change. Compare the following two examples (15a) and (15b).

(15a)	nenen-in	məny-ə-t	t-ə-ytew-net-Ø
	child-poss	hand-e-abs.pl	1sg.s-e-wipe-3pl.o-past
	'I wiped the c	hild's hands.'	
(15b)	t-ə-məny-ə-yta	ak-w?an-Ø	nenenə
	1sg.s-e-hand-i	E-wipe-3sg.o-past	child.(ABS.SG)
	'I wiped a chi	ld's hands.'	

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5. Valency-reducing operations

Chukchi does not have passives, but there are three types of valency-reducing operations: the antipassive, the reflexive and the anticausative. These are formed by adding the prefix in(e)-, the suffix *-tku*, the suffix *-twa* and the suffix *-et* to a transitive verb stem. We will demonstrate the details below.

5.1. Antipassive

Antipassive is most common in Chukchi. There are two ways to mark antipassive: the prefix -in(e) and the suffix -tku. See the examples in Table 3 below.

In an antipassive (intransitive) sentence, the subject is in the absolutive case, while the object is in an oblique case (instrumental, locative or dative). See the transitive sentences and the corresponding antipassive sentences below.

(16a) <i>tumy-e</i>	rəlwen-nin-Ø	nely-ə-n
friend-ERG	burn-3sg.s/3sg.o-past	skin-e-abs.sg
'The friend l	burned the skin.'	
(16b) tumyətum	ine-nlwet-y?i-Ø	nely-e
friend.(ABS.S	G) AP-burn-3sg.s-past	skin-ins
'The friend l	burned a skin.'	
(17a) <i>əlly-e</i>	kən?u-nin-Ø	peswaaq
father-ERG	catch-3sg.s/3sg.o-past	female.reindeer.(ABS.SG)
'The father of	caught the female reindeer.'	

Transitive		Antipassive	
ejmit	'catch'	ine-ejmi	'catch (intr)'
rlwet	'burn'	ine-rlwet	'burn (intr)'
piri	'clutch'	ine-piri	'clutch (intr)'
?emet	'pull'	ine-?emet	'pull (intr)'
l?u	'find'	ine-l?u	'find (intr)'
kn?u	'catch'	ine-kn?u	'catch (intr)'
penr	'rush'	penr-tku	'rush (intr)'
tenti	'tread on'	tenti-tku	'tread on (intr)'
ilytew	'wash'	ilytew-tku	'wash (intr)'
pelo	'nibble'	pelo-tku	'nibble (intr)'
kpl	'hit'	kpl-tku	'hit (intr)'
ukwet	'kiss'	ukwet-tku	'kiss (intr)'
swi	'cut'	swi-tku	'cut (intr)'

Table 3

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(17b) <i>əlly-ə-n</i>	ine-kən?u-y?i-Ø	peswaaq-ə-k
father-E-ABS.S	AP-catch-3sg-past	female.reindeer-E-LOC
'The father caug	ht a female reindeer.'	

Although (16a) and (17a), which are transitive sentences, and (16b) and (17b) which are antipassive sentences with *ine*- are similar in meaning, there are a few pragmatic differences: the most obvious difference is that the transitive has a definite meaning and the antipassive has an indefinite meaning. Why these two example marked by different case marking is a yet unsettled question.

In the following pair of examples, the transitive sentences are in (18a), (19a) and the corresponding antipassive sentences are found in (18b), (19b) with *-tko*. There are also a few pragmatic differences between the transitive sentence and the anstipassive sentence as for the antibassive with in(e)-.

(18a) <i>?ətt?-e</i>	penr-ə-nen-Ø	melota-lyən
dog-e-erg	rush-e-3sg.s/3sg.o-past	hare-ABS.SG
'The dog rush	ed the hare.'	
(18b) ?ətt?-ə-n	penr-ə-tko-y?e-Ø	melota-ytə
dog-e-abs.sg	rush-e-ap-3sg.s-past	hare-DAT
'The dog rush	ed to a hare.'	
(19a) qora-ta	tenti-nin-Ø	rewəmrew
reindeer-erg	tread-3sg.s/3sg.o-past	stone.(ABS.SG)
'The reindeer	trod on the stone.'	
(19b) qora-ŋә	tenti-tku-y?i-Ø	rewəm-ə-k
reindeer-ABS.S	g tread-AP-3sg-past	stone-E-LOC
'The reindeer	trod on stone.'	

In Chukchi, the causative formation can use the circumfix te-...- η^{6} , etymologically related to 'make'. The use of this circumfix as a causative marker is semantically parallel the English analytic causative 'make' and French 'faire'. However, this circumfix cannot be added to a transitive verb stem directly. Note that te-...- η must be added after the transitive prefix *r*- is first added to the intransitive verb stem. For example, *wak?o* 'sit down' vs. *te*-*r*-*wak?o*- η 'make to sit down', *jlqet* 'sleep' vs. *te*-*r*-*jlqet*- η 'make to sleep'.

It is interesting that there is another antipassive in Chukchi. Thus antipassive marker in(e)- and the causative marker te-...- η are added to the intransitive verb stem. This antipassive functions causatively but is not as strong as the normal causative. See Table 4 for some examples of the causative formation and the antipassive formation.

In the following examples, (20a) and (21a) in an antipassive (intransitive) sentence, the subject is in the absolutive case, while the object is in an oblique case. See the transitive sentences (20a) and (21a) and the corresponding antipassive sentences which function causa-

Intransitive		Causative	Antipassive	
wak?o	'sit down'	te-r-wak20-ŋ	te-ine-r-wak?o-ŋ	
jet	'come'	te-r-jet-ŋ	te-ine-r-jet-ŋ	
ikwisi	'drink'	te-r-ikwisi-ŋ	te-ine-r-ikwisi-ŋ	
jlqet	'sleep'	te-r-jlqet-ŋ	te-ine-r-jlqet-ŋ	
waŋe	'sew'	te-r-waŋe-ŋ	te-ine-r-waŋe-ŋ	
qametwa	'eat'	te-r-qametwa-ŋ	te-ine-r-qametwa-ŋ	
uwi	'boil'	te-r-uwi-ŋ	te-ine-r-uwi-ŋ	

Table 4

tively in (20b) and (21b), respectively.

mother-ERG C	<i>e-n-waŋe-y-nen-Ø⁷⁾</i> AUS-TR-sew-CAUS-3SG.S/3SG.O-PAST de her daughter (to) sew.'	<i>ŋeekək</i> daughter.(ABS.SG)
	<i>t-ena-n-waŋe-ŋ-yʔe-Ø</i> CAUS-AP-TR-SEW-CAUS-3SG.S-PAST l her daughter (to) sew.'	<i>ŋaakka-ytə</i> daughter-dat
father-ERG CA	<i>n-jen-ŋ-ə-rk-ə-nin-Ø</i> us-tr-come-caus-e-pres-3sg.s/3sg.o es his son come.'	ekək son.(ABS.SG)
(21b) <i>əlləy-ə-n</i> father-E-ABS.SG 'The father had	<i>t-ine-n-jen-ŋ-ə-rkən</i> CAUS-AP-TR-come-CAUS-3SG.S-PRES his son come.'	<i>akka-ytə</i> son-dat

5.2. Reflexive

An other type of valency-reducing derivation is the canonical reflexive. The reflexive is formed by adding the suffix -et and -tku to a transitive verb stem, just as with the antipassive construction. See examples in Table 5.

An example of a transitive sentence is seen in (22a), with its corresponding reflexive sentence in (22b), with the added morpheme -tku.

(22a) <i>t-ə-lpiw-y?en-Ø</i>	ottə-lyən
1sg.s-e-cut-3sg.o-past	wood-e-abs.sg
'I cut the wood.'	

(22b) *t-ə-lpiw-tku-y?ek-Ø* 1sg.s-e-cut-refL-1sg.s-past 'I cut myself.'

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Table 5				
Traisitive	Reflexive			
qetw	'stab'	qetw-et	'stab (oneself)'	
ejup	'prick '	ejup-et	'prick (oneself)'	
lpiw	'cut'	lpiw-tku	'cut (oneself)'	
ittil	'hit'	ittil-tku	'hit (oneself)'	
ten?e	'wash'	ten?e-tku	'wash (oneself)	
piw	'stab'	piw-tku	'stab (oneself)'	
1		1	`	

Table 5

5.3. Anticausative

Another type of valency-reducing derivation is the anticausative. These forms are derived by adding the prefix *-ine* (its allomorphs are *-ine/-ena*), and the suffixes *-tku* (its allomorphs are *-tku/-tko*), *-twa* and *-et* (its allomorphs are *-et/-at*) to a transitive verb stem, see Table 6 below.

Originally, *-twa* is free-standing verb and means 'to be'. The following example clearly shows that this is not a suffix but a free-standing verb.

(23) *minykə n-ə-twa-tore* where IMPF-E-be-2PL.S 'Where are you (PL) ?'

The following examples, (24a) and (25a) are transitive sentences. In contrast, in (24b) and (25b), the agent is removed from the structure and the sentences become intransitive.

(24a) <i>əll?a-ta</i>	uwi-rk-ə-nin	ənneen
mother-ERG	boil-pres-e-3sg.s/3sg.o	fish.(ABS.SG)
'The mother in	cooking the fish.'	

(24b) *anneen owe-twa-rk-a-n* fish.(ABS.SG) boil-AC-PRES-E-3SG.S 'The fish is cooked.'

Transitive		Anticausative	
jme	'hang'	jme-twa	'hang (intr)'
jl	'give'	jl-twa	'give (intr)'
rp?aw	'dry'	rp?aw-twa	'dry (intr)'
piri	'hold'	piri-twa	'hold (intr)'
uwi	'boil'	uwi-twa	'boil (intr)'
ret	'bring'	ret-twa	'bring (intr'
jp	'wear'	jp-twa	'wear (intr)'
piŋku	'put out'	piŋ-twa	'go out'

Table 6

Transitive		Anticausative	
pela	'leave'	pela-et	'leave (intr)'
ејр	'close'	elp-et	'close (intr)'
tejwŋ	'divide'	tejwŋ-et	'divide (intr)'

Table 7

(25a) əllenjut-e	jəp-rk-ə-nen	yəm-nin	məsəkw-ə-n
younger.brother-ERG	wear-pres-e-3sg.s/3sg.o	I-POSS	shirt-e-abs.sg
'The younger brother is			

(25b) <i>yəm-nin</i>	məsəkw-ə-n	jəp-ə-twa-rk-ə-n	
I-poss	shirt-e-abs.sg	wear-e-AC-PRES-E-3SG.S	
'My shirt is being worn (by somebody).'			

So far, we have found just three transitive verbs that may appear as anticausative verbs formed by adding the suffix *-et*. These are shown in Table 7.

See the following examples where (26b) and (27b) — as with (24b), and (25b) — the agent is removed from the structure and the sentences become intransitive.

(26a) <i>t-ə-pela-y?en-Ø</i>	ekək-Ø
1sg.s-e-leave-3sg.o-past	son-ABS.SG
'I left the son.'	

(26b) *ekək-Ø pela-t-y?e-Ø*⁸⁾ son-ABS.SG leave-AC-3SG.S-PAST 'The son stayed.'

(27a) <i>t-ejp-y?en-Ø</i>	qeryəs?-ə-n
1sg.s-close-3sg.o-past	window-E-ABS.SG
'I closed the window.'	

(27b) *qeryəs?-ə-n ejp-et-y?i-Ø* window-E-ABS.SG close-AC-3SG.S-PAST 'The window closed.'

6. Final remarks

In this paper, I have examined the valency-reducing operations in Chukchi. Chukchi has valency-reducing derivations as well as valency-increasing ones. There are three valency-reducing derivations: antipassive, reflexive and anticausative. The antipassive appears to be unique in that it originates in the causative form while also retaining a weakened causative meaning.

The data presented in this paper seems sufficient to provide a direction in the study of voice in Chukchi. Through our study of valency-reduction in Chukchi, we can deepen our theoretical understanding of the voice system of Chukchi, and thus, increase our knowledge of morphosyntactic processes. Further data and analysis will definitely provide more insights.

Abbreviations

ABS	absolutive	INS	instrumental
AC	anticausative	LOC	locative
AP	antipassive	0	object
AUX	auxiliary verb	PAST	past time
CAUS	causative	PL	plural
DAT	dative	POSS	possessive
Е	epenthesis	PRES	present time
ERG	ergative	S	subject
IMPF	Imperfective	SG	singular
IMPR	imperative	TR	transitivizer

Notes

The phonemic inventory of Chukchi is as follows: Short vowels: /i, e, a, o, u, ə/, Long vowels: /ii, ee, aa, oo, uu/, Consonants: /p, t, k, q, ?, s, γ, w, j, r, l, m, n, ŋ/. Chukchi has vowel harmony. Leaving aside the neutral vowel /ə/, the vowels can be divided into two groups on the basis of vowel harmony, by using the articulatory feature of high vs. low. In vowel harmony, the lower of a pair of vowels is 'dominant', and the higher of a pair of vowels is 'recessive', as seen here: Dominant vowels: /e, a, o, ee, aa, oo/, Recessive vowels: /i, e, u., ii, ee, uu/. If a word contains at least one morpheme with dominant vowels, then all morphemes with recessive vowels must be changed into the corresponding dominant ones (*i*>*e*, *a*>*a*, *u*>*o*), irrespective of whether they are root or affix (see Kurebito 2008a: 61–70 for details).

Morphophonological processes are also numerous, which create an environment for various assimilations, dissimilations and metatheses of consonants, as well as insertion and deletion of the neutral vowel a at morphological boundaries.

- Hereafter, I will use Subject to refer to Subject or Agent, and Object to refer to Direct Object or Indirect Object.
- In this word, the absolutive marker -lyan is a dominant morpheme. So, the noun stem milute 'hare' following the vowel harmony rule, changes to the dominant morpheme melota.
- In this word, the verb stem *terya* 'cry' is a dominant morpheme. So, following the vowel harmony rule, the morpheme *ninqej* 'boy' changes to *nenqaj*.
- 5) In this word, the dative case -yto is a dominant morpheme. So, the noun stem neneno 'child' following the vowel harmony rule, changes to the dominant form nanana.
- 6) For details, see Kurebito (2008b).
- 7) The transitive marker *r* changes to *n* when in medial position.
- 8) To avoid a vowel sequence, the e/a of -et/-ta- is deleted when affixed to a stem ending in a vowel.

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