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Nivkh Time Expressions (2)

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3. Tense and Aspect of Nivkh Language

3.1. Tense Marking of Nivkh

First, it seems to be reasonable to make clear what we understand under "tense". From my time logical point of view, a verbal predication involves necessarily two events and two time points. The one is a verbally represented event e and the time of its establishment t and the other the speech act and the time of the speech t0. In a logical formulation, an event e is established (⊢) at a time t which is ordered relative to the time point of speech t0 (cf. (18) and (20) in "Nivkh Time Expressions (1)" in CES 7, pp. 45-68, 2004):

(30) ORDER(t, t0) ⊢(t)e & ⊢(t0)speech
where ORDER is the ordering: t＜t0, t0＜t, t≦t0, t0≦t or t＝t0

This is the cognitive base of human languages for tense in general. A language has a certain ordering pattern to verbalize it in its particular way. For example, Nivkh has been said to specify morphologically two kinds of such pattern, future and aorist (cf. esp. Panfilov 1965 and Hattori 1955/2000). This idea can be formulated in our words: the language represents two kinds of tense relation t0＜t and t≦t0. The former is expressed in ***-nə***-form and the latter in zero-form of a finite predication with ***-dʲ***. According to this view, Nivkh has a time opposition "future versus aorist"; the former is the marked and the latter the unmarked tense, respectively. Let us examine the idea with the following examples:

(31) a. pət　　tʰət　　mer vi-***nə***-dʲra. (PU1830)
tomorrow morning 1PL　go-FUT-FIN-AFFIRM
(Tomorrow morning we will go.)
b. nʲəŋ nyχ　nana meteorkit　　pʰrə-dʲ-ra. (PU1202)
1PL　today shortly speed-boat-INSTR arrive-FIN-AFFIRM
(We has come now today with a speed-boat.)

The sentence (31a) describes an event in future with the definite time indicators pət, tʰət and the tense marker ***-nə***, while the sentence (31b) says that an event occurred just a moment before the speech time like in present perfect. Hattori 1955 is of the opinion that the South-East Dialect of this language (his informants came from Polonaisk region) has the tense opposition aorist/past versus future, illustrating the following examples:

(32)

aorist/past	future	
pxu-nt	**pxu-i-nt**	(come-back)

mu-nt **mu-i-nt** (die)

za-nt **za-i-nt** (hit)

where ***-i*** corresponds to ***-nə*** in the North-West Dialect (Note by Kaneko).

As far as his illustration shows, he supposes that the language has a binary tense opposition: aorist/past versus future, actualized as the morphological opposition: ***-ϕ*** versus ***-i*** in ***pxu-ϕ-nt*** : ***pxu-i-nt***, though he did mention a zero form overtly. We formulate his idea in a table:

(33) tense opposition of morphemes ***-ϕ : -i***

Form opposition	***-ϕ***	***-i***
Meaning opposition	aorist/past	future

Provided that the notion in (39) and (33) we have a lot of sentences with ***-dʲ*** in the North-West Dialect which do not necessarily mean aorist/past. For examples:

(34)a. pʰ-əvidʲ əuʒu-t kinʒnjrʰ-dʲ-ɣu. (PU1519)

REFL-not-hope abuse-INF lung-disease-FIN-PL

(Saying abuse "let me alone", you all fall in lung disease.)

b. pitɣu urudʲ smodʲgu bak pʰrəu ur-dʲ-ɣu-da. (PU516)

book-PL well love-PL only learn-INF well-FIN-PL-AFFIRM

(Those who books well love only learn well.)

c. umgugo, pət tʰət alʒ ŋat vi-da. njaχralʒ pu-dʲ-ra. (PU1801)

woman-PL tomorrow morning berry collect-INF go-IMP lonicera ripe-FIN-AFFIRM

(women, tomorrow morning let us go to collect berry. lonicera is already ripe.)

cf. pət tʰət mer vi-***nə***-dʲ-ra. (PU1830)

tomorrow morning we go-FUT-FIN-AFFIRM

d. kəx niknike-dʲ. (PU1704)

windpipe precious-FIN

(windpipe is precious<in general>.)

(34a) shows that the finite affirmative verb with ϕ-form appears in a conditional sentence. In an imperative sentence like (34b) a finite ϕ-form is rather usual. It is also the case in "let-us"-sentences like (34c). Note that ***-nə***-form appears especially when one says about a schedule in the future like in the sentence (34c cf.) above. A general assertion is also expressed in ϕ-form like the sentence (34d). From these examples, it is clear that the ϕ-form in finite sentences is not restricted to aorist/past tense, but they express a conditional or an imperative future as well as a general assertion. These sentences show that the ϕ-form does not necessarily express the opposite tense meaning to explicit future. Therefore, the best

interpretation for this fact is to say that the ϕ-form indicates nothing for tense specification. There is no such semantic opposition future versus aorist as corresponds to *-nə* versus ϕ, but rather an opposition of markedness. We have to revise the schema (33) above as follows:

(33 revised): tense specification of - ϕ , *-nə (* =South-East Dialect:*-i)*

forms	- ϕ	*-nə (-i)*
markedness	−marked	+marked
meaning	unspecified	future

Now, let us make a simple question: is the morpheme *-nə* a tense marker which indicates the time relation t0＜t in (30)? The answer is clearly "yes". But it does not make an opposition with - ϕ . It is an independent marker which has no correlatives in any tense paradigm. The morpheme *-nə (-i)* seems to be only one explicit tense marker in this language which marks the future occurrence of so "meticulously" as it indicates the time relation properly in case it is necessary, for example:

(35) a. t^həkr juχj-ja. ur-nə-d^j-ra. (PU1502)
diversipilosum drink-IMP well-FUT-FIN-AFFIRM
(Let drink diversipilosum. He/she will be well.)

b. if vi-inə-r ərk p^h-i-nə-χu ŋəri-d^j. (ST: ŋərid^j)
3SG go-WILL-INF already REFL-eat-FUT-PL gather-FIN
(He is willing to go and is already gathering something to eat himself.)

c. ni nəx laqxir vi-nə-d^j-for. (ST: **-for**)
1SG tomorrow skiing go-FUT-FIN-WISH
(I would like to go skiing tomorrow.)

The sentence (35a) is a typical use of *-nə* for simple future. ***p^h-i-nə-χu*** in (35b) is represented in a nominalized future form of the verb ***inj-d^j*** (eat) with a reflexive prefix and a plural suffix, in the meaning "what he himself will eat". In the last example (35c), future morpheme *-nə* appears to be superfluous because of the time indicator *nəx*, but it is overtly said in order to show that the speakers concern is the future plan to go skiing.

3.2. Tense Category of Nivkh

In Nivkh the morpheme *-nə* appears to be only an overt tense marker. We hesitate even to accept the idea that it makes a paradigm with - ϕ (cf. (33 revised)) because, then, we would have to assume the notorious notion of a zero-morpheme. We rather assume that the future marker-*nə* makes an independent tense category in this language. It has a function to indicate a special time relation in a positive way without any distinctive counterpart in a closed paradigm. This assumption look perhaps curious to the eyes

accustomed to a distinctive opposition. However, there are a lot of similar cases of such "incomplete" paradigms: in Nivkh for example, ***tʰa*** (adverb for prohibition) has no paradigm in morphological sense, but makes a category with positive imperative suffixes like ***-ja, -be.***

Now, let us examine the fact from a different viewpoint. Jakobson (1951) remarks that in the Paleo-siberian languages, "the absolute tense is not expressed directly. The essential distinction for Lourawetran and Yenisei and for Yukagir this is the opposition of aspects: perfective and durative. So, in Chukchee both aspects are differentiated in all the verb modes. In comparison to the distinction all the conjugation are divided, the languages of Lourawetlan and Yukagir express by adjunction of special thematic suffixes the secondary aspects like intensive, iterative, momentary, etc. By the same procedure Guiliak signals that the action is presented like:

(36) a. immediately perceived: ***vi-if-*** (être vu aller),
b. before the begin: ***vi-nə-*** (être prêt à aller),
c. evaluated at the result: ***vi-ɣət-*** (aller jusqu'au bout),
cp. ***vi-ɣət-nə-*** (être prêt à aller jusqu'au bout)."
(the original is in French, translated by Kaneko)

We find here an important idea Jakobson envisaged half a century ago. First, he mentions that the absolute tense is not directly expressed in these languages. If we can regard his "les temps absolus" as our tense notion (30), here in the sense that ***-nə*** is a morphological marker for an absolute tense t0<t, the suffix ***-nə*** is surely a candidate for an absolute tense. But as ***-nə*** has no counter-part, it is an isolated tense marker.

In this point, Jakobsons second remark becomes important; as (36) shows, ***-nə-***form, preserving the absolute tense notion "before the begin", belongs to the aspect paradigm with other aspect markers ***-if-, -ɣət-*** . We see here a reasonable solution to the problem about tense-aspect structure of this language. The isolated tense marker ***-nə*** joins in the paradigm of aspect forms and plays a role for marking a tense meaning along with them. If this observation is correct, the difficulty disappears: ***-nə*** is no more isolated and the assumption of a zero-marker is of no use. Instead, we need a comprehensive paradigm for heterogeneous members for tense-aspect marking. In the next section we will check what members the paradigm has and how do they work.

Let us add a short remark that in this language the possible tense opposition ***-?:-nə*** is not (yet) fully "grammaticalized", and ***-nə*** alone participates into a bigger paradigm, preserving the character of the inherent absolute tense marker. Is it not inappropriate here to remind of a historical stage where the Japanese tense opposition ***-ru:-ta-*** was born from the aspect categories in a late stage of Old Japanese?

Summarizing, the absolute tense (30) does not make any morphological paradigm in Nivkh, but the morphological marker ***-nə-***, preserving the absolute tense notion t0<t, participates into a grammatical paradigm of aspect markers like (36). This language grammaticalizes a comprehensive tense-aspect

category, but no independent tense paradigm.

3.3. Aspect Markers in Nivkh

In Chapter 2 (in CES7), we have discussed the issue about the lexical aspect of quality verbs in Nivkh, which has been dealt with in detail by Otaina 1978. In her work, the notion of quality verbs appears to be an intuitively defined semantic category, so that the list of them (pp. 17-26) looks like a thesaurus of verbs for state of things. But her morphological and syntactic analysis is precise enough to bring to light many important grammatical features of this verb group. What we discussed in Chapter 2 was, among others, the issue about the lexical aspect (LA) of the quality verbs, in her terminology, their "прочекание действия", i.e. in the traditional term, "aktionsarten" of verbs. In order to deduce the LA of quality verbs from her description, I have made use of their aspectual behavior, i.e. if and how they are connected with aspect forms like ***-ɣət/-ɣəta, -iv(u/i)*** and others. Their morphological compatibility with various aspect forms and, at the same time, the semantic effect of the connected forms are utilized as the language internal parameters for determining the LA of quality verbs. The detailed description of Panfilov 1965 helped us a great deal for that purpose, too, especially his analysis on the aspect and tense of Nivkh verbs (§ 38-56). We have got the following data to use for our aims:

(37)

	aspect markers	*compatibility and semantic effect*	
		quality verbs	*non-quality verbs*
1	***-ɣəta*** *	preservative	----
2	***-ɣət*** **	----	conclusive/resultative
3	***-iv(u/i)***	inchoative	durative
4	***-t^hu*** **	----	iterative
5	***-xə***	----	conventional/habitual
	+had^j	conventional/habitual	conventional/habitual
	reduplication	emphatic conventional/habitual	emphatic/ iterative conventional/habitual

Note i) *: only in Otaina 1975, may be of the same function with PA65's ***-ɣət.***

ii) ** : only in Panfilov 1965, but not mentioned by Otaina1978

iii) no mark: mentioned by both.

From this table we can make a series of implication rules: "if a verb V can be connected with ***-ɣəta*** and the connected form means the preservation of the event represented by the verb V, then V is a quality verb" (for the column 1). The possible rules we can deduce form (37) looks like (38):

(38)

	A: aspect forms	*B: connection with A*	*C: meaning of connected forms*	*D: ±quality If B & C, then D*	*LA of V*
a	***V-ɣəta***	+	preservative	+	]e[

b	*V-**ɣət***	+	conclusive/resultative	−	[e]/[e[
c	*V-**iv(u/i)***	+	durative	−	e=dur
		+	inchoative	+	]e[
d	*V-**t^{h}u***	+	iterative	−	[e]/[e[
		−	------	?	?
e	*V-**xə***	+	iterative	−	[e]/[e[
		−	------	+	]e[
f	*V+**had^j***	+	conventional/habitual	±	‖e‖

Notes: 1) e is an event, such that ‖e‖={ [e],]e[, [e[,]e] }, i.e. [/]e[/]

2) resultative is [e[, but this is marked with "res" for convenience like [e[res

3) an e can be durative or non-durative, i.e. ±dur

Here, we need some comments: (i) The connection with a or b is alternative: if a, i.e., if a verb can be connected with ***-ɣəta***, then the verb is a quality verb, if b, then a non-quality verb. (ii) The aspect marker c has a semantically distinctive power: if the connected form means durative, then a non-quality, if inchoative, then a quality verb. (iii) Though d is not productive, the connectability with d can be used as the parameter to pick up non-quality verbs. So far, we have no suitable example of quality verb + ***t^{h}u***. (iv) The marker e is distinctive, too: if ***-xə*** can be attached to, then a non-quality verbs, but if not, then a quality verb. (v) As the verb complex with ***had^j*** is possible in both classes of verbs, this marker has no distinctive power to define verb categories. We can neglect it for our purpose. The reduplication of verb stem is a useful device for representing emphasis, iterativity, conventionality or habituality. It is multifunctional, so that we cannot utilize it as a parameter in a direct way.

For illustration, let us apply these rules (38) to the Nivkh verb [***vi-***] (go walking). Then, we get the following values. In consequence we can determine the semantic features of this verb as in the right most column "∴" :

(39)

	A: aspect forms	*B: connection with A*	*C: meaning of connected forms*	*LA of V*	∴
a	*V-**ɣəta***	−	-----	-----	[e(dur)] or better xDO [e(dur)]*
b	*V-**ɣət***	+	conclusive	[e]	
c	*V-**iv(u/i)***	+	durative	e=dur	
		−	-----	-----	
d	*V-**t^{h}u***	+	?	?	
		−	------	-----	
e	*V-**xə***	+	iterative	[e]/[e[	
		−	------	-----	

*: DO means that the verb expresses an act, and its agent is indicated with x before DO. xDO [e(dur)] is read: "an agent carries out an act which has the feature [e(dur)], a durative event which has the beginning and end.

DO-verbs make an imperative form. They express an intentional act. Cf. the example (40e):

Examples:

(40) a. for b: qʰo-la hɜmar oχla-gu kʰit-t vi-ɣət-tʲ-ɣu (PA65.71)

rich-ADN old man child-PL run-away-INF go-CONCL-FIN-PL

(The children of a rich man went away. Note: *qʰola* is *qʰoɾla*?)

b. for c: kaskaʒuya, cʰi rʰtaχ vi-ivi-dʲ-ŋa? (PU1101)

Hallo, you where go-DUR-FIN-QU

(Hallo, where are you going today?)

c. for c: c-nanak hatɜ cax kinʒ ŋarχodʲ-rox vi-iv-gu-dʲ-ra. (PA65,69)

2PS-elder-sister and others 2PS-ACC devil trap-DIR go-DUR-CAUSE-FIN-AFFIRM

(Your elder-sister and others let you go into the trap of devil.)

d. for e: ɜmɜk vi-vi-xɜ-dʲ. (PA65,76)

mother go-walking-go-walking -ITER-FIN

(Mother go walking often.)

e. imperative: kʰit-t vi-da! (PA65,76)

run-away-INF go-IMP

(Let us go running away.)

3.4. A Complex Verb and a Single Event

A verb represents an event in a specific way according to the language it belong to. To take an example, Nivkh verb stem **[pʰrɜ-**(+dur)[means "come (walking)". This verb does not designate a punctual event, but an act continuing within a certain time interval. It differs from Japanese **[kur-**(−dur)[which means a punctual movement. But both verbs have a common semantic feature: "something moves to the speaker". Let us call this cognitive element of meaning "a meaning core". Surely, the meaning difference is often remarkable and it rouses a typological interest, but it is, in essence, derivative, namely, a particular-linguistic specification on the basis of a universal underlying core. In most languages a verb stem does not stand alone, but it accompanies suffixes or some derivative morphemes in order to become a language particular free form. In Nivkh a verb stem has to accompany at least the finite marker. It suffices to become a free form. But it can cooccur with more bound morphemes on the both side of the stem. Most of them are derivational categories for aspect, modal, temporal, etc. In Nivkh, they are suffixes except a reflexive prefix *pʰ-*. It makes a complex morphological structure. Let us call such a verb form "a complex verb":

(41) a complex verb :[$_{\text{complex verb}}$ prefix - verb stem - suffixes]

or formally: [$_{CV}$ f + stem F^n]

where f: affix, n < 1.

In a complex verb, the meaning of the verb stem is modified by attached morphemes. In a semantic view, the affixes play a supplementary role to complete the whole meaning of a complex verb, but they do not change the essential features of the event description: the event remains as same, but it acquires some additional specifications. What kind of such specifications it get from affixation differs according to each language. In Paleo-asian languages we find some which provide with more than ten slots for such derivational affixes. This is an interesting typological issue, but let us examine how the process goes on in Nivkh alone.

(42) a. mer ŋafq ut-tʲ: 《nʲi tvi-***nə***-dox qʰauk-ra. nʲ i sək cəŋ kʰu-***ɣət-nə***-dʲ-ra》 (PA65,70)
1PL friend say-FIN 1SG finish-FUT-DIR NEG-AFFIRM 1SG all you-PL kill-CON-FUT-FIN-AFIRM
(Our friend said: I am not yet finished. I will have killed you all.)

b. pila-nʲvhx məɣ-rʰ por-dʲ. tʰuɣrʰ tʰoz-***ɣət-ivu***-dʲ ŋə hadʲ (PA65,78)
old-man lying down-FIN fire go-out-CON-DUR-FIN warm-was.
(The old man laid himself down. The fire has been going out. It was warm.)

c. lu-***nə-xə***-la nʲvx / raju-***nə-xə***-la nivx(PA65,76)
sing-FUT-HAB-ADJ man/ learn-FUT-HAB-ADJ man
(one who like singing/ one who like learning)

d. ci maŋgo-qarʰ jarʰ lax pʰ-ərʰp-***ɣət-ku***-rʰa-dʲ-ŋa? (PA65,78)
you strong-COND why black cloud REFL-hide-CON-CAUS-HAB-FIN-QU
(If you strong, why you are making to hide yourself in the black cloud?)

e. nʲəŋn təf-ku tʰir-kir lə-***tʰa***-dʲ-***ɣu***. (PA65,75)
1-PL house-PL wood-INSTR make-HAB-FIN-PL (He writes ***tʰa-*** instead of ***tʰu-***.)
(We have made houses with wood.)

In the complex verb kʰu-***ɣət-nə***-dʲ-ra in the sentence (42a), ***kʰu-*** is the stem. It follows a conclusive aspect marker ***ɣət-*** and a tense marker ***nə-***. With these two markers the inherent meaning of the verb stem is additionally specified. But the event xyDO[***kʰu-***(-dur)[remains unchanged as a single accomplishment. The final suffixes -***dʲ-ra*** completes the complex verb and makes it up as an affirmative predication. In spite of the suffixation the event remains single. We see here that a complex verb corresponds a single event. tʰoz-***ɣət-ivu***-dʲ in (42b) has a similar structure. Instead of the tense marker ***nə-*** occurs here an aspect marker, durative -***ivu***. At the end of the complex verb lacks an affirmative suffix -***ra***. The single event "(the fire) has been going out" was talked about as a narration, i.e. as an event in the past. (42c) shows two nominal phrases made up with complex verbs. Both have the same structure: [$_{\text{complex verb}}$ verb stem - tense marker(-***nə***) - conventional aspect marker(-***xə***) ad-nominal marker(-la)]+N. pʰ-ərʰp-***ɣət-ku***-rʰa-dʲ-ŋa in (42d) is most complex. The stem is the second morpheme ərʰp- (ST: ***ərp-t'***

(hide)). It accompanies the reflexive prefix p^h-and after the stem three suffixes -***ɣət*** (conclusive), -***ku*** (causative) and -r^h*a* (habibual < *had*^{j}). The question marker -*ŋa* is attached to the finite -d^j. Note that the affirmative- interrogative paradigm is made up with the opposition -*ra* :-*ŋa*. The long complex verb designates here a single event, too, though it is variously modified. The last example lə-t^h*a*-d^j-*ɣu* is interesting in that the complex verb ends with a plural marker -*ɣu*. We see here that the marker for agent number belongs to the components of a complex verb.

There are yet many other difficult problems to discuss, among others, problems of object, e. g. its agreement, its pronominal prefixation and its incorporation. But at present we think it sufficient to remark what elements come into the construction of a complex verb and how they are arranged. As long as we have seen from the examples above, we get the possible sequence of elements of a complex verb as follows:

(43) p^h-(REFL) −STEM −-**ɣət**(CONCL)−-**iv(u/i)**(DUR)−-**gu**(CAUS)−-**nə**(FUT)/-**inə**(INTEND)−-**xə/**
t^hu(ITER/HAB)− || -**d^j** (FIN) −-**ku**(PL) −-**ra**(AFFIRM)/-**ŋa**(QU)
where / : disjunctive selection
|| : category boundary; suffixes on the right side: final markers

The suffix chain (43) involves markers of heterogeneous functions. Let us remark the cruicial characteristics of the elements:

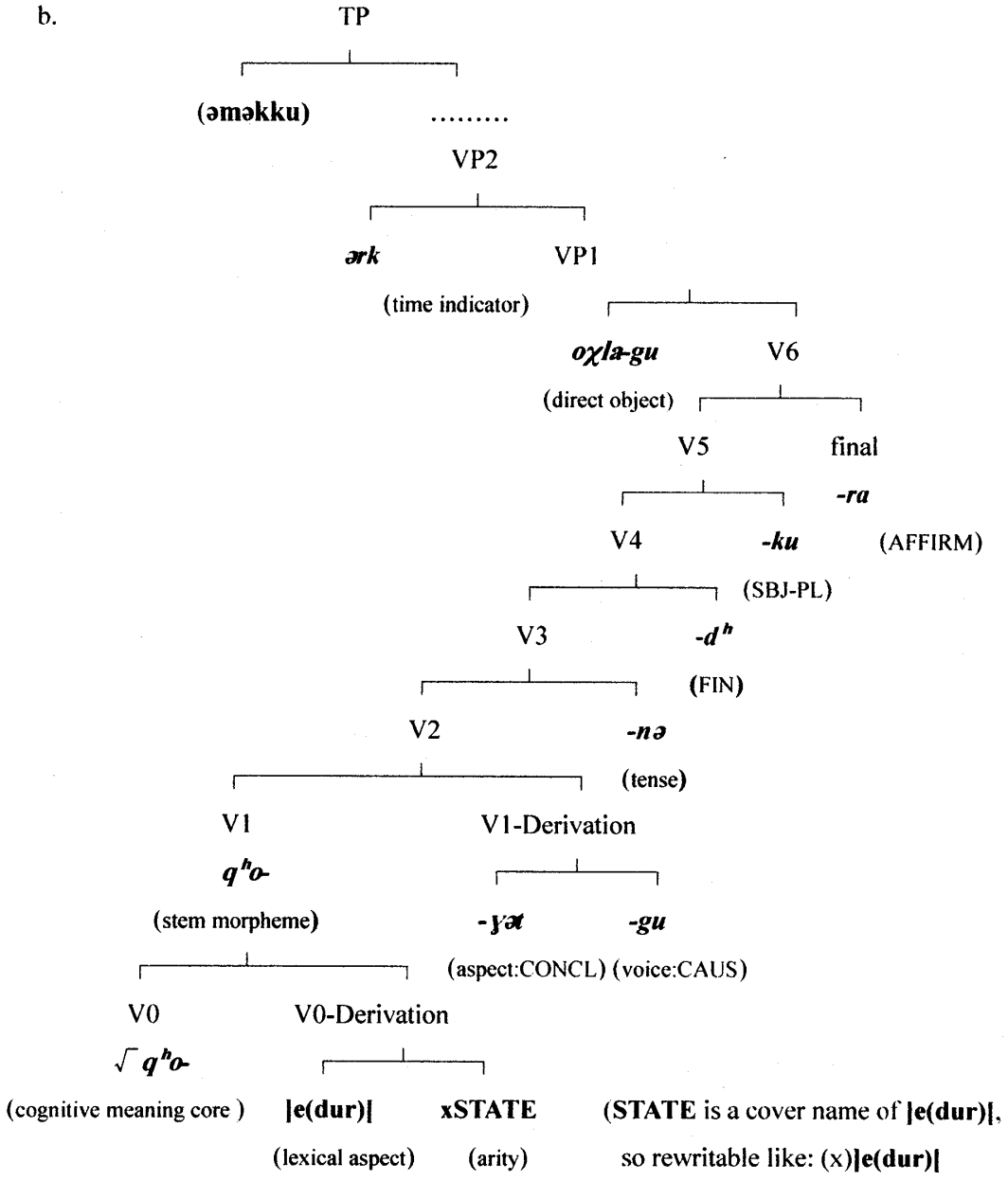
(44) a. The verb stem is the center in morphological as well as in semantic point of view. The inherent features of the verb is given here. It contains the inherent meaning of the verb, together with its lexical aspect and deep arity.
b. The reflexive prefix *p^h-* alone can precede the stem. This affix changes the constellation of the inherent arity of the verb stem and is related to voice in this language.
c. Aspect forms -***ɣət***, -***iv(u/i)*** and -***xə/t^{h}u*** do not change the inherent lexical aspect of the stem, but only put focus on its specific phase of it.
d. A sub-chain of suffixes -***gu*** −-***nə/inə*** interrupts the chain of aspect markers. The future -***nə*** and the modal -***inə*** are disjunctive in this dialect. (South-East Dialect seems to lack this suffix; Hattori 1955 remarks that the desiderative is expressed analytically in this dialect.)
e. The causative marker -***gu*** is located among the suffixes for tense-aspect. Its position is not characteristic for this language. It occurs pretty near to the verb stem in many languages, especially in Paleo-asian languages.
f. On the right side of || (category boundary) stand verb-final elements. Remarkable is that the marker for plural agent -***ku*** belongs to them. This language has no object agreement.

We can convert the linear sequence of elements in a complex verb into a two-dimensional configuration

in which they find their place in a hierarchical structure. For a sentence like (44a) we have the category configuration like (45b):

(45) a. **(əməkku) ərk oχla-gu q^{h}o-ɣət-gu-nə-d^{j}-ra:**(Mothers will have already made children go to sleep.)

b.



The category configuration up to V6 is a complex verb ***q^{h}o-ɣət-gu-nə-d^{j}-gu-ra***. It resembles astonishingly ***ne-kase-tsuke-ru-yo*** (almost in the same meaning as Nivkh original) in Japanese though the meaning core as well as the lexical aspect of the head element are remarkably different in both languages. With the specification on these V-levels, a complex verb goes into the syntactic relation with direct participants of the event, namely, nominal and adverbial complements, so that it becomes verb phrases, VP1 and VP2. They makes further new VPs up to the top of the configuration.

The configuration above shows that a complex verb with a series of suffixes together represents a single event. The markers modify the stem in several steps, supplementing the inherent meaning of the verb. They change the face of the event, but neither alter its character nor add any superfluous element.

4. Time Expressions of Events in Nivkh

In Chapter 2.1. (CES No.7, p.47ff.), I mentioned the following types of time expressions of Nivkh:

(i) Time Indicators, e.g. ***naf*** (now), ***nana*** (recently), ***tʲək*** (long time),

(ii) Tense Form ***-nə*** (for future)

(iii) Aspect Forms, e.g. ***-ɣət*** (conclusive), ***-iv(i/u)*** (for duration)

(iv) Lexical Aspect (LA=aktionsarten) of Verbs, e.g. stative of "quality verbs" like ***pildʲ*** (be/become big)", durative action of verbs like ***vidʲ*** (go walking).

As discussed in Chapter 3 above, these time expressions appear in a single verb phrase. Their activity sphere ranges over the level VP2 in (45b). They are the elements of a single event and belong to components of its verbal representation. We remark the crucial features of each element of the example (45a) in short:

(46) a. verb stem: **qʰo-**, i.e.
  (i) meaning core: $\sqrt{}$ **qʰo-**
  (ii) LA: **]e(dur)[**
  (iii) arity: **x** in **xSTATE**
 b. aspect markers (LA-derivation): **ɣət-**
 c. causative, reflexive (arity derivation): **gu-**
 d. tense marker: **-nə**
 e. finite marker: **-dʲ**
 f. subject number marker: **-ku**
 g. verb final markers: **-ra**

As far as our example is concerned, an event consists of the elements (46) and it is established in a time t. The event time t is related to the speech time t0 by means of the tense marker (46d):

(47) a. e = {**qʰo-**($\sqrt{}$ **qʰo-**, **]e(dur)[**, **x**), **ɣət-**, **gu-**, **-dʲ**, **-ku**, **-ra** }
 b. $\exists$t ⊢(t) e
 c. **-nə** → (t0 < t) ⊢(t0) speech & ⊢(t) e

However, events do not necessarily occur alone. More than two events occur parallel and they can be involved temporally in each other. An event indicates often the time when another occurs. If two events are connected to make a bigger complex event, then we have three time points in relation to each other, namely

two event times and the speech time t0. Let us formulate such a complex time relation as follows:

(48) ORDER(t0, t1, t2) ⊢(t0) speech & ⊢(t1) e1 & ⊢(t2) e2
where ORDER is the ordering: t<t', t'<t, t≦t', t'≦t or t=t'; (t: a certain time, t': another certain time)

Recall our primary presupposition that time expressions in general have two main types: (a) **process time**, which does not involve the speech time t0. It is a linear process in which a event goes on. A lexical aspect (LA) of verbs and verb aspect represent it typically. (b) **historical time** which is necessarily bound with the time point of speech t0, typically represented by tense forms. The time order of event (48) can be differentiated in these types, too: if we exclude t0, we have (a) sequence of process time, if we include t0, we get (b) succession of historical time.

Before beginning description we introduce general conventions for convenience:

(49) a. The event described by the *main* complex verb with *-d^h* is called e1, and its time t1,
b. The event described by the *subordinate/dependent* complex verb with the suffixes like ***-t/-r***, ***-kɔ***, etc.: e2, its time t2,
c. The order of event times like t1<t2, if event1 precedes event2, etc.,
d. When syntactic elements are attached to a complex verb, it becomes a verb phrase (VP).

4.1. Event Chain and Event Set

In order to get a general view, let us take some simple examples of the suffix ***-ŋan*** designating "simple temporal sequence" (Panfilov 1965 p. 141) between two verb phrases. ***-ŋan*** is attached to the first complex verb and is said to make a verb-participle (verbal adverb, in Russian: деепричастие).

(50) a. **ŋəu-ŋan, mer q^{h}o-nə-d^j-la**? (PA65,141)
dark-when we sleep-FUT-FIN-QU?
(When it becomes dark, we will go to sleep?)

b. **ətəka, n^{j}i ɲaf vi-ŋan ɔqgut p^{h}rə-nə-qavr-d^j-ra**. (ibid.)
father, 1SG now go-when/if at once come-back-FUT-NEG-FIN-AFFIRM
(Father, when/if I go out, I will not come back in the moment.)

c. **t^{h}ət-kɔ ɔʒ-ŋan macala n^{j}in my-r^h hum-d^j**. (ibid.)
early-morning-after wake-up-when young-man one die-T exist-FIN (T=suffixes -t/-r, -tot/-ror)
(In the early morning when I woke up, a young man lay dying.)

In (50a) ***-ŋan*** at the end of the first verb indicates that it becomes dark **when/before** we go to sleep, i.e. the first event precedes the second. But the future suffix ***-nə*** in the second verb shows that the event occurs

after the speech time. The question is: when it becomes dark, has it become already dark or will it become dark when the sentence was spoken? The possible time relation is: (i) t2<t0<t1 or (ii) t0<t2<t1, where t2 is the event time of the first complex verb with ***-ŋan*** and t1 for the second, the main complex verb. As far as we judge from literal meaning of (50a), it is not fixed which time relation applies. Perhaps, the second option (ii) is reasonable. But in case of the sentence (50b), the time order of events is not ambiguous: the events are ordered as t0<t2<t1. On the contrary, the sentence (50c) has an opposite relation. First, the day breaks, then he wakes up and then he finds a young man was lying dead. Putting aside the VP with ***-kə*** at the top of the sentence, we have the sequence of event-times: t2<t1<t0. From this apparently inconsistent phenomenon, we get the following conclusion:

(51) a. VP-**ŋan** indicates the time order: t2≦t1 or t2<t1

formally: ∃t1,t2 (t2<t1/ t2≦t1) ⊢(t2)e2 & ⊢(t1)e1

b. VP-**ŋan** per se is indifferent to the time point of speech t0.

c. The time order between VP-**ŋan** and t0 is determined indirectly by the time of main verb.

In short, the suffix ***-ŋan*** does not indicate any absolute tense, but only a relative sequence of events, namely the event of the main verb phrase can not be precedent to the subordinate one.

Another crucial suffixes representing event sequence is ***-t/-r***. We have the following typical examples:

(52) a. nʲi məotʲu rʰo-t ɲaɲəɲ-t vi-dʲ. (PA65,147)

1SG gun take-T hunt-T go-FIN (T: *-t/-r*)

(I, taking a gun, went hunting.)

b. nʲi pʰanak ajma-t vi-nə-dʲ-ra. (PA65,147)

1SG self-father-in-law see-T go-FUT-FIN-AFFIRM

(I will go to see my father-in-law.)

c. nʲi cəŋdox lər-inə-t pʰrə-dʲ-ra. (PA65,147)

1SG 2PL-DAT fight-WILL-T come-FIN-AFFIRM

(I came to fight with you.)

d. imŋ hə dəf məʒi-t məɣ-**ivo** qʰāhəmar ōla pʰrəf kumlirx pʰu-r

3PL this house pass-by-T descend-during headman child self-house house-door go-out-T

imŋ ama-dʲ. (PA65,147)

them look-at-FIN

(While they came down passing by the house, the headman's child appeared at the house-door and looked at them.)

e. nʲəŋ purdoχ vij-nə-t təŋʒ-dʲ-ra. (PU1204)

1PL Khabarovsk-DIR go-FUT-T plan-FIN-AFFIRM

(We are planing to go to Khabarovsk.)

In the sentence (52a) the event2 [r^{h}o-t[(taking a gun) at t2 overlaps with the event1 [ŋaŋəŋ-t vi-d^{j}] (go hunting) at t1. So, the time relation is t2⊂t1. The main verb phrase is itself complex, which consists of event4 [ŋaŋəŋ]-T+ event3 [vi-]. The occurrence times of these events, t4 and t3, either overlap one another or, if we interpret "go and then hunt", t3 precedes t4, namely t3≦t4. But neither [r^{h}o-t[nor [ŋaŋəŋ-t] has any direct relation to the speech time t0. These verbs come into relation to t0 only mediated by the main verb with -*d^{j}*. As the sentence can be regarded as a tale, the whole event process is already finished. Therefore, the relative order of the time of the whole event is t2⊂($_{t1}$ t3≦t4)<t0. But -*t/-r* per se determines only the relative time order between the main and the subordinate complex verb in a twofold way: t3≦t4 and t2⊂t1.

The main verb of the sentence (52b) is marked by the future suffix -*nə*. So, the time t1 of the event1 [vi-nə-d^{j}-ra] occurs after t0. But suppose that the participle verb [ajma-t] (event2) is the purpose of the event1, then the events occur in the sequence: t0<t1≦t2. Here, too, -*t/-r* determines only the relative order of event times: t1≦t2. The matter is clearer in the case of the sentence (52c): the purpose event2 [lər-inə-t] (wish to fight) is marked with -*inə*, modal suffix for wish/hope. At the time point when the main event1 [p^{h}rə-d^{j}[(come) occurs, the event2 [lər-] does not yet occur. As the whole sentence has been uttered after the event1, the relative order of the events is, event1<speech act<event2, i.e. t1<t0<t2. But we can interpret the sentence in another way: if I have already finished to fight, then the matter is different. Then the whole time relation will be: t2<t1<t0. I cannot determine which interpretation holds true. Anyway, one thing is clear: the relative time order of the events is: t2<t1. The sentence (52d) contains two complex verb phrases: the subordinate VP2 [məʒi-t məɣ-**ivo**] (passing by (t4)+come down (t3)) and the main VP1 [p^{h}u-r...ama-d^{j}] (coming out (t2)+look at (t1)). As the overtly expressed agents of both VPs are different, so the events are independent each other. VP2 involves two events: the durative [məʒi-t] and the resultative [məɣ-[. The times of the events are overlapping, therefore t4=t3. The adverbial suffix -*ivo* of VP2 indicates the simultaneity of events. This says in our case: t3(coming down)= t1(looking at). The VP1 consists of two verb phrases again: [p^{h}rəf kumlirx p^{h}u-r] and [imŋ ama-d^{j}]. The agent of these events is the same, i.e. the chef's child. The event2 (coming out to the house door) precedes or overlaps the event1 (looked at them). So, the time order is: t2≦t1. As the sentence is narrative, i.e. a tale, the whole event is past. So, t1<t0. Therefore, t2≦t1<t0. By the suffix -*ivo*, the events of both VPs are going on parallel at least partially. The whole time order is, therefore: t1=t2≦t3≦t4<t0. VP2 in (52e) is destinative to VP1. Therefore, the time order has to be: t1≦t2 or t1<t2.

From what we have seen above about the sentences (52) we can sum up the features of the suffix -*t/-r* in verb phrase [$_{VP}$ V2--*t/-r* + V1] as follows:

(53) A complex verb phrase [$_{VP}$ V2-T + V1], where T is -*t/-r*, has the following features:

a. the order of event time is t2=t1 or t2≦t1, abridged as t2≦t1, or even in destinative t1≦t2 or t1<

t2,

b. the agent of t2 and t1 have to be identical,

c. the time point of speech t0 can intervene the time order t1 and t2, if t2 is the time of purpose event (e.g.52c),

d. V1 can have a direct object (e.g. 52d).

Now, compare the time indicating feature of the suffixes ***-ŋan*** (51) and ***-t/-r*** (53). These suffixes determine the relative order in the sequence of events, but they have no power to determine any direct relation to the speech time t0. They acquire the relation to t0 only indirectly mediated by the relation of t1 and t0. In this sense, these complex verbs themselves are speech time indifferent. The crucial difference between the complex verbs with ***-ŋan*** and ***-t/-r*** lies in that, first, ***-ŋan*** makes an overlapping and successive events, but ***-t/-r*** designates no definite sequence. Second, the agent restriction is more important: between ***-ŋan***-verb phrase and the main verb phrase there is no restriction what agent they take, but the agent of the ***-t/-r***-verb complex has to be identical with that of the main verb. To formulate in a table:

(54)

	-ŋan	***-t/-r***
event time order	t2＜t1/ t2≦t1	t2≦t1/t1≦t2
relation to speech time	mediated by t1	mediated by t1
agent restriction	no restriction	identical with e1

Here we see different types of verb connection: By means of suffix ***-ŋan,*** a sequence of two different events is made. In other words, V2--***ŋan***+V1 makes a chain of events. On the contrary, ***-t/-r*** designates that the events make up a complex one, i.e. a composed set of events even in the case they are successive. The agents of two events have to be identical. To formulate in short, ***-ŋan*** makes a chain, but ***-t/-r*** a set of events.

4.2. Tense Marking and Sequence Marking

Different from speech time indifferent suffixes ***-ŋan*** and ***-t/-r***, there are some other suffixes which appear to determine the time order with t0 even in their normal use. To take typical examples, let us examine the following sentences:

(55) a. ci matʲka-kɔ c-əmək mu-dʲ . (PA65,143)

2SG young-K 2SG-father die-FIN (K: kɔ)

(When you were young, your father died.)

b. pʰrə-ɣət-kɔ ɲaɲəɲ-nʲvɣ-gu pʰrə lət-tʲ-gu. (PA65,143)

come-CON-K hunting-man-PL hut make-FIN-PL

(After having arrived, hunters made a hut.)

c. if tʰəj pasq rʰa-r jətʰ-r unʲ-inə-kɔ kʰlə ɔrqtox ku qan-gu əɣ-dʲ-gu. (PA65,143)

3SG yet half toast-T tear-T eat-WILL-K road side-LOK the dog-PL bark-FIN-PL

(When he once more toasted and tore and ate the half, the dogs barked at the road side.)

d. andqa! rʰatx vi-ivu-dʲ-ɲa? ŋaŋəŋ-kɔ pʰrə-rʰ nʲ-rəf-tox təvu-dʲ-la? (PA65,143)

guest! where go-WILL-FIN-QU? hunt-K arrive-T my-house-LOK visit-FIN-QU

(Hellow, where do you go? Having gone hunting, are you going to visit us at my house?)

All of these sentences consist of two verb phrases, one is a main clause and the other a subordinate verb phrase with ***-kɔ***. In the sentence (55a),]matʲka[-kɔ (when young) indicates a long time interval in the past, during which the second event (father died) occurred, i.e. t2＜t0 involves t1. As the main verb is narrative, the whole time relation is placed before the speech time, namely, t1⊂T2＜t0. In the sentence (55b), the verb **[pʰrə-[** attaches the conclusive aspect form ***-ɣət***. This complex verb is temporarily specified by ***-kɔ***. As the main sentence is narrative, too, the event of main verb phrase is past. So, we find here a clear case of "plus-que-parfais", namely t2(had come)＜t1(made)＜t0. The sentence (55c) means in short: he wanted to (***-inə***) eat a piece of fish and at that time the dogs barked. Here, the time relation t2(intend to eat)＜t1(dogs bark) applies. It is not said whether he had actually eaten the fish, but event2 precedes the event1. So, the time relation is: t2＜t1＜t0. The usage of ***-kɔ*** in the sentence (55d) is most interesting: it is clear that **[ŋaŋəŋ]-kɔ** (after having hunted) occurred before t0 and now they came back from the mountain (**[pʰrə[-rʰ]**) but at the moment of the speech, it is very probable that the event **nʲ-rəf-tox [təvu]-dʲ-** (visit my house) has not yet occurred. The woman grumbled and the hunters perhaps answered to her: "we are coming to you now", or "next time!". Anyway, the first event time t2 of the subordinate verb is past, but that of the main verb t1 is perhaps not. The sentence is clearly a report, so that the whole event is past. But the reporter makes a protest against insincere hunters saying they did not yet visit me. Therefore, the time relation is: t2＜t0＜t1. The speech time intervenes the sequence t2 and t1. But note that V-***-kɔ*** designates t2 ＜t0 in any way.

The complex verb with ***-kɔ*** in all the sentences in (55) designates the tense relation V-***kɔ***＜t0, no matter what time the main verb has. As far as I have seen, there is no sentence whose the main verb is marked by the future suffix ***-nə***. Perhaps, the concatenation VP2-***kɔ***＋VP1-***dʲ*** is a normal use. Such a sentence as VP1***(-nə)-kɔ***＋VP2 ***-nə-dʲ*** is even ill-formed. At least such a sentence is not yet documented. If this observation is correct, we can conclude that a verb phrase with ***-kɔ*** indicates the time relation t＜t0 as a principle. Namely, it marks an absolute tense. In this sense, ***-kɔ*** is a tense suffix.

There are some other suffixes which are supposed to designate a tense notion. Let us take a suffix ***-guin*** as an example. This destinative (=final) suffix applies, contrary to ***-kɔ***, to designate the future occurrence of an event. For comparison we add some simple examples of another suffix ***-nəftox***, which is destinative, too.

(56) a. nʲəŋ **huin** təŋi vo-dʲ-ra cəŋ-ax c-anʲma-guin. (PA65,149)

1PL there trout get-FIN-AFFIRM 2PL-DAT 2-see-G (G: -guin)

(I got trout there so that you see them.)

b. hoɣan ŋəŋ cəŋ ŋəŋ-dʲ-ra cəŋax pʰro-guin.

Then 1PL 2PL find-out-FIN-AFFIRM 2PL-DAT self-help-G

(Then we found you out so that you help us <according to PA>)

c. v-əkən tʰuʒ ərɣali rʰəktʰ hə antχ umgu kʰus hɔ-guin. (PA65,149)

his elder brother meat much brought the woman guest gave, boil-G

(His elder brother brought much meat. and gave it her lady guest, so that she boil it.)

d. urkrox ləx ma ai-dox qʰau-nəftox parf əlvs-kir ma ətu-dʲ. (PA65,146)

night-LOK rain dry-fish wet-DAT NEG-F evening cover-INSTR dry-fish cover-FIN

(In order that the dry fish will be wet in the night, we cover it in the evening.)

e. vi-kɔ ŋəu-dʲ. ŋəu-ŋan qʰo-nəftox kər-dʲ. (PA65,146)

go-after get-dark-FIN get-dark-when go-to-sleep-F stop-FIN (F: -nəftox)

(We walked and became dark. Becoming dark, we stopped to sleep.)

f. kəŋ-dox qʰau-nəftox ŋəŋ tikla oq xɔt-ha-dʲ. (PA65,146)

freeze-DAT not-F 1PL warm coat wear-used to-FIN

(We had a warm coat on in order not to be frozen.)

Panfilov 1965 remarks that the particle with ***-guin*** "is not used in general in predicative subordinate clauses". He means that a verb complex with ***-guin*** makes an independent clause. Actually, complex verbs with ***-guin*** stand on the left side of the main phrase as a rule. In the sentence (56a), the event1 [tɔŋi vo- (get trout)[in t1 has finished before the event2 [c-anʲma- (show you)] occurs in t2. The time relation is t1 < t2. But crucial is the time relation with t0. The sentence (56a) says that we have got trout, but it is not sure whether I have already shown you trout or you will see trout in future. The time relation is, therefore, t1 < t2 < t0 or t1 < t0 ≦ t2. The same time relation is seen also in the sentence (56b): It is said that we found you out, but it is not necessarily true that you have already helped us successfully. The sentence (56c) is different in that the agent of the ***-guin***-sentence does not identical with the main clause. Both independent events are perhaps already finished at the speech time, but this is not said. We suppose that the time relation of ***-guin***-verb and the speech time is determined not by any overt marker, but only according to context. That is, ***-guin*** itself does not indicate any absolute tense. Anyway, the relative order t1 < t2 is clear because event2 is the purpose of event1.

Now, let us examine the complex verb with ***-nəftox*** in the sentences (56d, e and f). Note first that the sentences express chains of events in which ***-nəftox***-verb phrases are subordinate. All the sentences above are narrative with the ending ***-dʲ***, so that the whole events are past. The relative time order t2 and t1 is t1 < t2 in all cases, because ***-nəftox*** designates purpose. And as a narrative ***-dʲ***-verb phrase is past in general, the whole time relation is t1 < t2 < t0, or better t1 < t0 < t2 or t1 < t2 ≦ t0. The sequence t1 < t2 is definite, but t0 < t2 is not necessarily the case. Therefore, ***-nəftox***-verb phrases has no function to indicate an absolute

tense relation.

As far as we judge from the sentences (55) and (56), the sentences with the suffixes ***-kɔ***, ***-guin*** and ***-nəftox*** express the following time relations:

(57)

	VP2-***kɔ***	VP2-***guin***	VP2-***nəftox***
restriction for main VP	t1≦t0	----*	no
time order VP1 and VP2	t2<t1	t1<t2	t2<t1
time order VP1, VP2 and t0	t2<t1≦t0	t1<t2<t0/ t1<t0≦t2	t1<t2<t0/ t1<t0≦t2
(in)dependent time marking	t2<t0	context dependent	context dependent

* ---- : VP2 itself is not subordinate.

Note that the time of VP2-***kɔ*** determines the time relation t2<t0 inherently. This means that ***-kɔ*** indicates past independently. In other words, the suffix ***-kɔ*** has power to indicate one of the absolute tense of (30). But, on the contrary, other verb phrases with ***-guin*** or ***-nəftox*** do not designateh tense, but only the relative sequence of verb phrases. The tense value of t2 of ***-guin*** or ***-nəftox*** is determined context-dependently.

4.3. Overlapping Events

Now, we look at some examples of overlapping time relation. A typical simultaneous time relation is given by the suffix ***-ivo***, and the suffix ***-datat/-datar*** designates a quasi simultaneity:

(58) a. hə, jār p^hrə-ivo kər-r kūs hup-ra vivus hup-ra ha-d^j-ra? (PA65, 142)

ya why come-I stay-T ribbon bind-ET tape bind-ET used to-FIN-AFFIRM (I:-ivo, ET:illustrating)

(Hey, why do you bind ribbons and ties while you are coming out?)

b. if pul-ivo vəsqar-d^j. (PA65,142)

he grow become-strong-FIN

(While growing, he became strong.)

c. məgu q^h-datat məgu k^hu-nə-d^j-gu-ra. (PA65, 145)

1PL(sbj) sleep-DT 1PL(obj) kill-FUT-FIN-PL-AFFIRM

(While we are sleeping, (they) will kill us.)

d. if mu lət-tatat r^hatox vi-d^j-lu.(PA65, 145)

3SG ship make-DT where-to go

(Making ship, he went away somewhere.)

-ivo is a typical suffix for overlapping relation. This adverbial suffix appears in a subordinate verb phrase and designates an overlapping relation between t2 and t1. In the sentence (58a), the main act [...had^j-](is used to) is done during the event [p^hrə-[(come walking). The sentence (58b) has two quality verbs; the first

one]**pil-**[(is/become big) is used as stative, but the other]vəsqar-[(is/become strong) as alterative in the meaning "become strong". The subordinate verb expresses an event with a long time interval t2 in]**pil-**(dur)[, and the main event is involved within it. Therefore, the time intervals of them are at least partially overlapping: t1⊆t2.

The partial simultaneity appears in the sentences (58c and d), too. The subordinate verbs are here stative verb]q^h-[(sleep) and durative action verb [lət-] (do/make), respectively. Both events have a durative process. Therefore, the same time relation t1⊆t2 can apply to them, too. It is probable that the suffixes ***-ivo*** and ***-datat*** are restricted to verbs with durative process, so that they can be utilized as a parameter to specify LA of preceding verbs. But the meaning difference between them is not clear. What we can say now is that we find no sentences with quality verbs attached by ***-datat***, but many verbs for human action make verb phrase with ***-datat*** as well as with ***-ivo***. This can imply that ***-datat*** is restricted to non-quality durative verbs. Anyway, we have to collect more sentence data to fix the question.

In connection with this issue, let us ask how the reverse time relation t2⊆t1 can be expressed. It is not possible by the same suffixes, but by other suffixes like *-ŋan*, e.g.

(59)a. jan^{j}ma-ŋan lili k^hiŋk vi-ivi-d^j. (PA65, 141)

look-at-G very high walk-DUR-FIN

(When (I) looked at, (he) was walking in a very high mountain.)

b. əxt t^hxərx mər-ŋan təv nəkr vukrəvukrə-hum-d^j. (PA65,141)

steep shore climb-G house four exist be-FIN

(Going up the steep shore, there were four houses on the terrace.)

Perhaps there is no special suffix to designate the relation t2⊆t1 in this language.

4.4. Variety of Time Suffixes

Panfilov 1965 refers to some other suffixes expressing various time relations. One of them ***-tot/-ror*** is used instead of ***-t/-r*** almost in the same meaning. There may be some stylistic difference, but we are not yet sure what kind it is precisely. Others are used mainly for conditional and concessive verb phrases. Moreover, we have many other ad-verbal suffixes to examine how they work to designate time. For example, conditional ***-qa***, concessive ***-gin***, etc. In order to examine them we need a different paper.

We have seen above among others that, if more than two events are connected, they make two different kinds of constructs: an event chain or an event set (cf. 4.1.). Most time suffixes of Nivkh designate an event sequence. The suffix *-ŋan* is typical to indicate the order t2<t1 of event times indifferently to the speech time t0. On the contrary, if the suffix ***-t/-r*** is used, a subordinate event is connected with the main to represent a supplementary, causal or final relation to the main event. In this case we have a set of events. In an event set the occurrence time of event t1 and of t2 overlap each other, or in many cases t2 precedes t1, or in a purpose use t1 follows t2. They are indifferent to the speech time, the tense specification is

context-dependent.

Almost all subordinate suffixes for time expression mark only a relative sequence of events each other. But there is one suffix which marks an absolute tense, i.e. ***-kɔ*** (cf. 4.2.). It designates the time order t2＜t0, no matter how t1 is specified temporally. The destinative suffixes ***-guin*** and ***-nəftox*** are apparently similar in this function, but, as long as our data says, they indicate no direct relation to the speech time.

The sequence of event time is differentiated in types: simultaneity, forward or backward succession. There may be some mixed cases like ≦, etc. Here we have a typology how the functions of suffixes are distributed in this language:

(60)

suffixes	property	time relation	restriction
-t/-r	set making	t2≦t1/ t2=t1/t1＜t2	agent/object identity in e1,e2
-tot/-ror	set making	t2≦t1/ t2=t1/t1＜t2	?agent/object identity in e1,e2
-ŋan	simple sequence	t2＜t1	nothing
-kɔ	tense marking	t2＜t0	?t1＜t0
-guin	independent destinative	t1＜t2 (◇t0＜t2)*	V1＜V2-guin
-nəftox	destinative	t1＜t2	V2-nəftox＜V1
-ivo	simultaneity	t1⊆t2	V2:durative
-datat	quasi-simultaneity	t1≦t2	◇V2:durative*

*◇: possible

? : not sure

5. Some Typological Implications

In Nivkh Time Expressions (1) in CES 7 we concentrated to the issue what sorts of lexical aspect LA Nivkh verbs have. Because not only data, but also theoretical instruments are yet insufficient, we could point out only several sort of LA. But we have got the essential façade of LA in this language. In Chapter 3 of this paper we have observed the basic structure of a complex verb. In Chapter 4, the time relation between two events was the issue. Here, we have found two essential types of event connection: an event chain and an event set. Furthermore, we have seen that there is a crucial typological difference in the concatenation types of verbs and verb phrases. The connection of verbs or verb phrases by means of suffixes ***-t/-r***, ***-ŋan***, ***-kɔ*** etc. is not homogeneous. They must be further subcategorized. In this chapter we summarize the observation above and show some typological implications we can deduce from the investigation of a particular language Nivkh.

5.1. Lexical Semantic Structure of Verbs

In Chapter 2 (CES 7) we have discussed about lexical semantic structure of verbs in Nivkh on the base of investigation of Panfilov 1965 and Otaina 1987. We discusses among others the issue on the interaction of aspect forms with lexical aspect. First, let us recall the LA of quality verbs and non quality verbs and the

interrelation of aspect and LA with the example of -*ɣət*:

(24) LA types of Non-quality verbs

	head verb of the complex	meaning of verb complex	LA of head verbs	①
14a.	*q^{h}avu* (*-ivi-d^j*) (boil)	is/was already boiling	#DUR*	[*q^{h}avu-* (+dur)[
14b.	*p^{h}rə*(*-ivi-d^j-ɣu*) (come)	had come/been coming back	#PUN(+dur)*RES②	[*p^{h}rə-*(+dur)[
14c.	*lət*(*-ivu-*) (make)	(was) making	#DUR#EFF	[*lət^j-*(+dur)]
14d	*t^{h}oʒ*(*-ɣət-ivi-d^j*) (go-out)	already has gone out	#PUN*RES	[*t^{h}oʒ-*(-dur)[

(CES7, p.68) ① supplement in new notation

② "PUN" is a mistake. The verb designates a durative process. cf. (57a)

(28) LA of the verbs in (27)

time relation	examples	LA	①
V1≦[t] +result(state)	*p^{h}rə-*(25a) *por-*(25c)	#PUN(+DUR)*RES② #PUN(−DUR)*RES	[*p^{h}rə-*(+dur)[[*por-*(-dur)[
V2<[t] + effect	*k^{h}u-* (25b)	#PUN*EFF	[*k^{h}u-*(-dur)[
V3<[t]−effect	*in^j-*(25f)	#DUR#	[*in^j-*(+dur)]
V4<[t] + long action	*χouχou-*(25e)	#+DUR#	[*χouχou-*(++dur)]
[t]∈V5	*q^{h}au* (25d)	*DUR*	]*q^{h}au-*(+dur) [③

(CES7, p.66) ① supplement in new notation

② "PUN" is a mistake. The verb designates a durative process. cf. (57a)

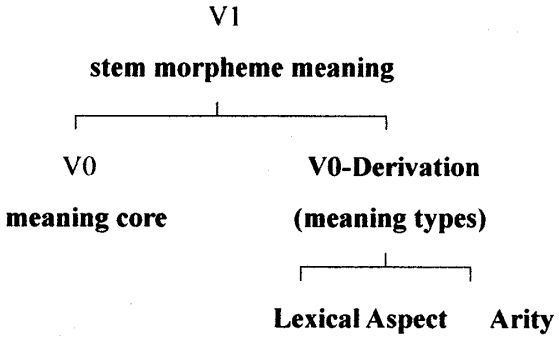
③] e [is a state verb with a long event process. (+dur) is redundant.

In 3.3. above we have developed the method a little further by utilizing the aspect forms as parameters to determine the lexical aspect of verbs (cf. (38) and (39)). The connection of a verb stem and an aspect form makes a complex verb. But a complex verb can involve further more morphemes for tense, causative, etc. And it ends with verb final elements. So, a complex verb makes a long chain of morphemes of which center is the stem in semantic as well as formal viewpoint.

In construing the structure of a complex verb we have asked in 3.3. how a stem is constructed. To take an example, the Nivkh verb ***q^{h}o-(d^j)*** means "being asleep". It is different, e.g. from Japanese ***ne-(ru)*** which means a human action to lie down for sleeping. But no doubt both have some meaning in common. They involve a common cognitive content, say " inactive & covert-conscious behavior of animals to take a rest". We have called the cognitive content "meaning core". It underlies as a cross-linguistic cognitive notion among the morphemes of languages, ***q^{h}o-***, ***ne-***, etc. But Nivkh ***q^{h}o-*** expresses the behavior as a state, Japanese ***ne-*** an action to fall into the state. We know that this particular linguistic meaning difference comes from their respective *types* of meaning, which we call *lexical aspect*. Every verb stem of languages possesses a type of lexical aspect which designates how the process of an event it represents goes on. It specifies an intensional type of the meaning of a verb stem. But it is not yet sufficient for a stem meaning. A verb stem contains one more covert meaning in it, i.e. *deep case*, or better to call *arity*. *u-d^j* (burn/light)

involves inherently two participants to establish the event. The semantic difference between *kʰu-dʲ*(kill) and *mu-dʲ*(die) is related to this category, too. Arity specifies extensional type of the stem meaning. So, we assume that a verb stem is constructed with following components. This structure itself is one of the language underlying universals:

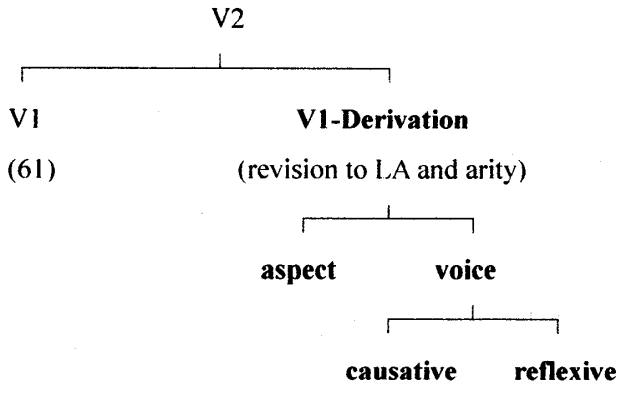
(61)



Note that the structure (61) and the components and instruments of LA and arity belong to language universals, but the types made up of them are particular linguistic. On the basis of a meaning core, LA and arity mould it into a language particular verb meaning.

Every grammar of languages has derivational categories which makes a single verb into a complex verb. They add some supplementary features to its inherent meaning. We have dealt with aspect and voice above. They arederivational categories for a complex verb. Aspect functions to thematize a particular phase of the process of an event. It brings the initial phase, the duration, the conclusive phase, the result or the effect of the event process into focus. These Derivational categories contains, among others, grammatical devices such as causation, passivization and reflectivization. They are related to the extensional features of the morpheme meaning, among others to arity elements. In Nivkh, causative is marked by the very productive suffix ***-gu*** which makes a verb pair: causative versus non-causative verbs. But passive is expressed neither morphologically nor syntactically. The reflective prefix ***pʰ-*** substitutes the function and expresses a passive-like meaning. Suppose that causative and reflexivization make up a derivational category of voice. It stands in the sister position of non-lexical aspect. We have such a configuration as follows:

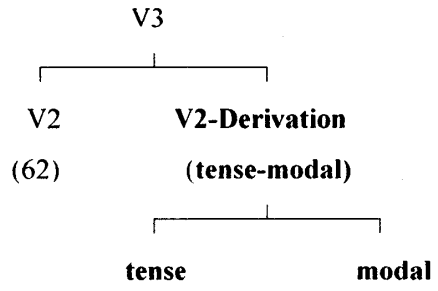
(62)



The causatiion is even lexicalized in many verbs to make causative verbs. Saveljeva/Taksami 1970 collects many causative verbs in Nivkh which make causative:non-causative verb pairs. But in many case it is not precisely clear if we are to regard them as lexicalized or morphologically derivational .

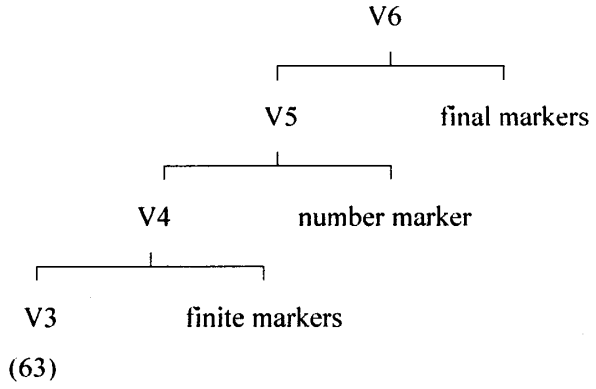
Similar is the case of the modal suffix ***-inə***. This suffix is alternative to the tense marker ***-nə***. These markers appear within the suffix chain of aspect [***-ɣət ....-xə***] containing semantically heterogeneous morphemes. The suffix ***-nə*** is placed on the right most slot before the finite marker *-dʲ*.

(63)



The finite marker *-dʲ*, etc. makes a paradigm of verb finite markers with ***-ja/-be*** (imperative), etc. They stand in opposition to non-finite markers ***-t/-r***, *-ŋan*, et al we observed in Chapter 4. On the right side of a finite marker can appear the plural marker ***-ku*** in agreement with the number of subject. After this plural suffix appear a paradigm of verb final elements. The crucial opposition is affirmative ***-ra*** versus interrogative *-ŋa*. So, we see here three different levels of categories. We schematize the hierarchical configuration of finite, plural and final markers as follows:

(64)

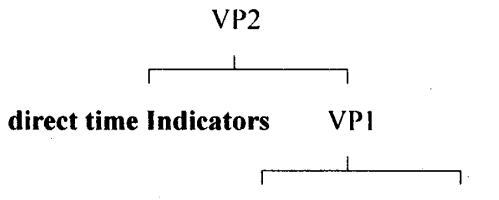


A Nivkh complex verb is made of 6 different levels of configuration of morphological markers. We assume that such a kind of category configuration underlies every language. The particular linguistic difference lies in how and what categories it is made up with.

With the specification on these levels, a complex verb goes into the syntactic relation with direct participants of an event, namely, nominal and adverbial complements. It becomes a verb phrase. We take here two kinds of the inner-most categories of a verb phrase into account for Nivkh: the first overt expression for the participants of the event process, e.g. arguments in absolute case, local/directive

complements without case marking, etc. (cf. (52)) as well as some simple direct time indicators like ***naʃ*** (now), ***pət*** (tomorrow), ***nəx*** (today), etc. In this language a direct object plays a special morphological and syntactic role: it is attached to the verb directly to cause a morpho- phonological change, it can become a "vacant" pronoun, and so on (cf. Krejnovich 1958 et al). It is, therefore, worth to be evaluated as a sister of V6:

(65)



(64)

In the configuration above, we underline the structure of V1 as fundamental for the further investigation of lexical semantics. Note especially the nodes V2 and V3, for we have hitherto thought too little about LA and confused it with aspect very often. But, now we have found the existence of an interface between two aspect categories, a lexical and a derivational. If we utilize a suitable typological method, we will find here a cognitive model case to show how a language particularity is born from language universals. The inevitable condition for such an investigation is that we need more linguists who think about this problem from a model-theoretic viewpoint.

5.2. Tense Marking and Absolute Tense

As we have seen in 3.1. and 3.2., the tense marker in Nivkh is isolated in that it has no distinctive opposition with other possible tense markers. It joins a paradigm with aspect markers altogether like in (36). We assumes that it stands on the third level V3 in a category hierarchy (63), separated from aspect forms standing on the lower level V2 (62). One can ask whether on earth ***-nə*** is a tense category, or only one of aspect markers. Avoiding to chat about the definition of "tense", we regard the semantic function of ***-nə*** as a morpheme which marks an absolute tense (30), i.e. $\exists t\ t0 < t$. Therefore, it is no doubt a tense marker, not any marker for a derivational aspect in Nivkh.

In the category configuration (63) the tense marker has a fixed place under the node V3. It is realized in a linear concatenation in a slot in a morpheme sequence of a complex word. As far as the projection from configuration to concatenation is guaranteed as a language particular rule, the grammar of a language decides what paradigm it belong to. In this sense we think it persuasive that the Nivkh tense morpheme ***-nə*** participates a tense-aspect paradigm like (36).

There is another problem we found in the observation above: the participle making suffix ***-kɔ*** has a tense usage. The verb phrase it is attached to designates the time relation $t < t0$, no matter how the main verb phrase is temporally specified. In this sense this suffix indicates an absolute tense. Is it a tense morpheme?

We prefer the positive answer. In general, a tense morpheme needs not to be on the level V3, it can stand on a higher level parallel to verb finite elements like -*d*^{j} or even to verb final suffixes like -*ŋa*.

Both types of tense morphemes belong to verbal category in any way. By definition, both indicate an absolute tense. The difference lies only in that ***-nə*** appears within a complex verb, while ***-kɔ*** makes a verb phrase dependent to another verb phrase, i.e. it has such a syntactic function as a conjunction has. If our assumption holds true, tense morphemes can stand on various level of verbal structure without making a closed paradigm. In this territory, we must be liberated from the traditional notion on tense opposition and try to find out typological variety of tense expressions.

5.3. Configuration and Concatenation of Morphemes

A complex verb involves classes of categories divided on at least six steps of specification. Of course, we have to differentiate the hierarchy more precisely, among others the final elements. But for our present purpose we think it is sufficient. In Nivkh, each of these categories is expressed in a analytical way and occurs in a sequence of ordered slots. But the morphemes assigned to each grammatical notion in the category hierarchy have to be actualized in a horizontal order to make a chain of categories. There must be, therefore, an interface procedure between the configuration and the chain of grammatical categories. It has to function to copy the cognitive notions in the configuration onto the ordered chain of morphemes. For example, the tense morpheme ***-nə*** on the V3-level in (63) is mapped on the place between causative ***-gu*** and finite -*d*^{j}; otherwise the chain becomes ill-formed. We assume that every language grammaticalizes such a projection rule in its particular way. However, such a projection rule has been hitherto formulated in a very ad hoc way if it is ever noticed. We have at present only some persuasive proposals for such a rule from some of our colleagues. Volodin 1995(p.25) and 1999 (p. 140) assumes the following model for a complex verb in Chukckee (66a) and for the verbal structure of Itelmen (66b), respectively:

(66) a. $f^{n} + (r) + R + f^{n}$

f^{n} : n × affixes; (r): supplementary stem; R: stem

b. -5 · -4 · … · -1 · √Root · 1 · 2 · … · 15

-x: places in which an affix occurs, e.g. -5: finite preffix, 15: person indicator

In comparison with the structure of these languages, the chain of Nivkh is less complicated. Nivkh has only one prefix on the left side of the stem and its projection rules may be somewhat simpler. But both cases need some projection rules no matter how it is complicated. So, we can ask what features differentiate Nivkh from other so-called poly-synthetic languages. Is there some qualitative threshold-value of complexity, or some grammatical phenomena like circum-fixes? We remind of the discussion on noun incorporation in Nivkh between Panfilov and Krejnovich in the middle of the last century (cf. Kaneko 1999), but it does not suffice to make clear the distinction between syntheticity and analyticity. Incorporation is not sufficient for the distinction. Itelmen is a decisive counter-example: this language is

(poly-)synthetic but not incoporative. Mattissen 2001 contributes for this discussion, she regards Nivkh verb structure as poly-synthetic. Her precise analysis as well as her descriptive method deserve to appreciate, but she had made the problem a little more complicated.

5.4. Complex of Events and of Verbs

In 4.1. above we discussed about two distinct types of verb concatenation: a verb phrase represents an event set or an events chain. To take a typical example for an events chain: a verb phrase with *-ŋan* precedes another verb phrase and make a complex sentence. It is also the case of other adverbial suffixes like ***-kɔ, -nəftox***, et al. Their syntactic function is to combine two verb phrases. In this sense they are not different from so-called subordinate conjunctions, but they are suffixes in Nivkh. Their morphological status is identical with other types of suffixes making a complex verb and a verb complex/a converb, but their syntactic function is different: what they make is a complex sentence/ verb phrases. In event-logical view, they make events chains, therefore, the time constellation like in (44).

The suffix ***-t/-r*** makes an event set out of two events and designates no definte time relation between them. In destinative use it signals explicitly t1 ≦ t2 e.g. [vij-nə-t təŋʒ-dʲ-ra](plan to go)(=(52e)), with stative and durative verbs it signals an overlapping time relation, e.g. **[kaskazi-t hum-be]**(may remain happy), often as modifying the event, i.e. so-called as modus actionis, e.g. [kʰit-it vi-ɣət-tʲ](have run away), etc. But an event set is not necessary homogeneous. Let us think about the following sentence which contains two ***-t/-r*** phrases:

(52a) nʲi [$_{VP}$ [$_{VP1}$ mɔotʲu rʰo-t] [$_{VP2}$ [$_{V\text{-}T}$ ŋaŋəŋ-t] vi-dʲ]]

1SG gun take-T hunt-T go-FIN

(I, taking a gun, went hunting.)

Question is: have both verb-T in VP1 and VP2 the same grammatical function? Let us test well-formedness of the following concatenations:

(67) a. OK: [$_{VP2}$ [$_{V\text{-}T}$ ŋaŋəŋ-t] vi-dʲ]]

b. OK:[$_{VP}$ [$_{VP1}$ mɔotʲu rʰo-t] vi-dʲ]]

c. OK: [$_{VP}$ [$_{VP1}$ mɔotʲu rʰo-t] [$_{VP2}$ [$_{V\text{-}T}$ ŋaŋəŋ-t] vi-dʲ]]

d: ?? or NO:[$_{VP}$ [$_{V\text{-}T}$ ŋaŋəŋ-t] [$_{VP1}$ mɔotʲu rʰo-t] vi-dʲ]]

First, the semantic function of ***-t/-r***-phrases are different: (67a) is destinative, while (67b) modal. Second, construction: (67c): [$_{VP}$ [$_{VP1}$...V-T] [$_{VP2}$ [$_{V\text{-}T}$ ...] V-FIN]] is well-formed, but (67d) [$_{VP}$ [$_{V\text{-}T}$... V-T] [[$_{VP1}$... V-T] V- FIN]] is almost ill-formed. The reason is not clear. Perhaps modal must precedes destinative. But it may be rather because of different syntactic combination: (67c) [$_{VP1}$...] [$_{VP2}$ [$_{V\text{-}T}$ ...] V-FIN]] is tighter than (76d) [[$_{VP1}$... V-T] V- FIN]]. A simple concatenation with a [V-T] is tighter than a concatenation with a verb phrase

[$_{VP1}$... V-T]. There exist namely two sorts of event sets: a tight one [$_{V\text{-}T}$ ...] V-FIN] and a loose one [$_{VP1}$... V-T] V- FIN]]. The difference lies what occurs before the main V, a single verb or a verb phrase.

There is one more point to notice in this connection. In this types of a complex verb can appear a verb phrase as the main verb. For example, the main verb of (52d) has a direct object [$_{VP}$ imŋ ama-d^{j}], the subordinate verb phrase has even a directive complement [$_{VP}$ p^{h}rəf kumlirx p^{h}u-r]. If we take these phrases as verb complexes/ converbs, we have to permits a light object in the structure of **[[$_{VP1}$...] V]**, or have to think at least that the restriction in the subordinate verb phrase is pretty loose, e.g. in comparison to Japanese [$_{CV}$ V-**te** V] phrase. Otherwise, we would assume that ***-t/-r***-phrase can make a sort of an event chain. I prefer the solution that the main verb permits an light object. Any way, we need to discuss about this problem in typological view in future.

In this paper we have seen three distinct category of verb structures: a complex verb which represent a single even. In (41) in 3.4. we have assigned to the grammatical notion *a complex verb* the structure [$_{CV}$ prefix + verb stem + suffixes]. As its interesting example we take (42d) p^{h}-ər^{h}r-ku-r^{h}a-d^{j}-ra^{j} (x has made to hide oneself). As the second type of complex verb structures, we have a special verb structure called *a verb complex*, which is called *converbs* by European typologists. This type of verb structure is constructed in Nivkh with the suffix ***-t/-r*** or ***-tot/-ror***. It corresponds to the event-logical notion of an event set. As observed above, a converb is not heterogeneous in Nivkh. The biggest verb structure is a complex sentence/verb phrase as is also the case in almost all languages. Complex sentence, or better complex verb phrases correspond to event chains, concatenations of events which are constructed with different verb phrases. The marker for them are adverbial suffixes. They are attached to a subordinate verb in most cases, but we have a case we can not decide the phrase as subordinate, i.e. the suffix ***-guin*** in (56). Here too, we have an interesting typological problem. In summarizing let us compare these verbal structures hitherto observed:

(68)

verb-categories	event-categories	examples	structure
a complex verb	a single event	[$_{CV}$p^{h}-ər^{h}r-ɣət-ku-r^{h}a-d^{j}-ra^{j}]](52a)	[$_{CV}$ f+stem+ f^{n}]
a verb complex = a converb	an event set	(i) [$_{VP}$ [$_{V\text{-}T}$ŋaŋəŋ-t [$_{CV}$ vi-d^{j}]]	[$_{VP}$ [$_{V\text{-}T}$ V-T[$_{CV}$ ...]]
		(ii) [$_{VP}$[$_{VP1}$məot^{j}u r^{h}o-t][$_{CV}$ vi-d^{j}]]	[$_{VP}$ [$_{VP1}$ X] [$_{CV}$ ...]]
complex S/VP	an event chain	(50a) [ŋəu-ŋan], [mer q^{h}o-nə-d^{j}-la]?	[$_{VP}$... V-f][$_{VP}$... V-f]

X: syntactic element on VP1-level (63)

f^{n} : n×sequence of affixes. On the right of stem occurs only one prefix.

Many languages may have these morpho-syntactic categories. Japanese, e.g. has two types of verb connections: combination of verb stems (called "ren-youkei") and that of ***-te***-form and stem. This distinction has something to do with the concatenation types (68). Verbal categories may contain such

distinction perhaps in a cross-linguistic perspective. The investigation on converb constructions has yet only a young history, e.g. Haspelmath/Koenig 1995. This problem brings up one more interesting topics to investigate verb category form a typological viewpoint.

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