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**NOUN INCORPORATION IN CHUKCHI: A FORCE-DYNAMIC
APPROACH AND DIACHRONIC TYPOLOGY**

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Publications

1. Vinyar A & Gerasimenko E. Nesintaksicheskie ogranicheniya na inkorporaciyu v chukotskom [Non-syntactic restrictions on incorporation in Chukchi, in Russian] // Acta Linguistica Petropolitana. Papers of Institute for Linguistic Studies. – 2018. – T. 14. – №. 2. – С. 78-110.
2. Vinyar A. I. Suffiksial'nye predikaty v chukotskom: semantika, tipologiya i istochnik vozniknoveniya [Suffixal predicates in Chukchi: semantics, typology and diachronic source] // Tomskij zhurnal lingvisticheskikh i antropologicheskikh issledovanij. – 2019. – №. 3. – С. 9-21.
3. Vinyar A. I. Beyond syntacticocentric and lexicalist: event-structural force-dynamic approach to noun incorporation and promotion to direct object in Amguema Chukchi // Вопросы языкознания. 2023. – №. 2. – С. 114-143. (Scopus Q2).

Conference presentations and public demonstrations of the results

The main results and conclusions of the present study have been presented in 2016–2020 in oral presentations at four international conferences:

1. 13th Conference on typology and grammar for young scholars, Institute for Linguistic Studies, Russian Academy of Sciences, Saint Petersburg, 2017, talk: «Non-syntactic restrictions on incorporation in Chukchi language» (with E. Gerasimenko).
2. TyLex, NRU HSE, Voronovo, 2017, talk: «Possessor Raising and Object Incorporation in Chukchi».
3. Minority languages in major linguistics, Moscow State University, Moscow, 2017, talk: «Syntax and semantics of «lexical affixes» in Chukchi language».

1. Topic, contents and structure of the paper

The proposed dissertation is devoted to the syntax of the argument structure of the incorporating constructions of the Amguema dialect of the Chukchi language and the modeling of restrictions on such constructions using the principles of force dynamics and the proposed diachronic pathways of development of these constructions.

Noun incorporation is a construction in which the stem of a verb dependent noun is compounded with this verb to yield a morphologically complex verb stem, see similar approach in [Muravyova 2004] and (1).

- (1) a. *atləy-e* *watə* *Ø-pəne-ni-n*
father-INS knife.NOM.SG 2/3.S/A-sharpen-3SG.A.3.O-3SG.O
- b. *atləyə-n* *Ø-watə-mna-yʔ-e*
father-NOM.SG 2/3.S/A-knife-sharpen-TH-2/3SG.S
- ‘Отец поточил нож’.

The purpose of this study is to describe and explain the restrictions governing the possibility of noun incorporation in Amguem Chukchi. This task was split into four parts:

- Describe in detail the set of incorporating syntactic constructions and preliminarily formulate a set of their inherent limitations for Amguema Chukchi. Constructions similar to those analyzed by previous researchers for other variants of the Chukchi language, as well as previously little studied constructions will be described;
- Propose a model of restrictions for the described constructions, in which the argument structure of the constructions is determined by a chain of force-dynamic (see [Talmy 2000] and [Croft 2012]) interactions between the participants in the event and the sub-events associated with these participants;
- Using the available materials of languages related to Chukchi, as well as the results of additional research in the field of diachronic typology, propose a hypothetical pathway of the development of incorporating constructions, clarifying and adjusting the ones previously formulated in [Mithun 1984];
- Explain the restrictions on incorporating constructions by a combination of incomplete inheritance of the syntax and/or semantics of constructions along the pathway of their diachronic development (see [Sommerer 2020]) and cognitive principles governing these constructions.

The relevance of this study stems from two reasons. Firstly, field data of the threatened Chukchi language are provided, deepening and clarifying previous studies of other dialects of this language (see, for example, [Skorik 1948], [Polinskaja & Nedjalkov 1987], [Kurebito 1998]). Secondly, our analysis is based on a cognitive-constructive approach to the syntax of argument structure through force dynamics, which had previously been little applied to noun incorporation constructions.

The following **theses** are up to defense:

1. The incorporation of the S/P-participant and the Cause in Amguema Chukchi is most successfully modeled using a force dynamics approach to argument structure. The order and nature of the sub-events of a complex event determines the syntax of a construction;
2. The incorporation of spatial and instrument-like participants does not violate the restrictions posited for the incorporation of the S/P-participant and the Cause. However, it represents a different family of constructions that are subject to additional restrictions, apparently of a lexicalist kind;
3. Noun incorporation constructions of S/P and Cause participants are restricted by the following principles of force-dynamic event structure:
 - a. An incorporated participant either undergoes a change or a force transmission;

- b. Incorporated participant cannot follow the participant which undergoes a change in a subevent chain;
 - c. A participant promoted to core syntactic function (nominative intransitive Subject or Direct Object) directly follows an incorporated participant in a subevent chain.
4. Principles posited in (3) are governed by the diachrony of incorporation constructions and their cognitive salience.

The theoretical significance of the dissertation:

- Description of incorporative constructions of the Chukchi language has been clarified and deepened. Constructions with promotion to the position of a core participant and constructions with Cause incorporation are given special attention;
- Restrictions are formulated in the cognitive model of force dynamics and explained in the paradigm of diachronic construction grammar (см. [Barðdal & Gildea 2015]);
- Diachronic and synchronic relations between noun incorporation construction and affixal verbs are studied. The affixal verbs, their semantics and development pathways are studied in the wider typological and areal context;
- Diachronic typological study of noun incorporation constructions not only provided insights on the possible development pathways of Chukchi constructions, but also supplemented previous typological studies.

The practical significance of the dissertation:

- Comparative concepts formulated on semantic basis can be used as a questionnaire for the language-internal description of noun incorporation, affixal verbs and similar constructions;
- This study models the incorporation restrictions in cognitive terms. These terms may be reformulated to be more accessible for people without the linguistic expertise and hence be used in the domain of linguistic activism, language maintenance and revitalization;
- Data on Chukchi language and typological generalizations can be used as materials for various courses in graduate and post-graduate programs in linguistics, such as *Introduction to linguistics*, *Introduction to morphology*, *Introduction to syntax*, *Linguistic typology*.

The remaining part of this resume is a synopsis of the articles put up for defense. When necessary, I also provide conclusions from my additional unpublished studies.

2. Restrictions on the incorporation possibilities and their difference for core and non-core participants

This section is based on [Vinyar, Gerasimenko 2018] «Non-syntactic restrictions on noun incorporation in Chukchi» and my additional studies.

In Amguema Chukchi (as in other Chukchi varieties, see [Spencer 1995]) participants with various semantic roles can be incorporated: patientive participants of transitive and intransitive events, non-volitional Causes, spatial participants of intransitive events and instrumental participants. I postulate the following general restrictions for these incorporation types. The restrictions are based on the force dynamics and causal chain event decomposition model, see [Croft 2012].

- (i) *an incorporated participant cannot follow the participant undergoing a directed change on q dimension in a causal chain;*
- (ii) *prototypically, an incorporated participant cannot have a volitional control of how the event unfolds.*

Restrictions (i)-(ii) are obeyed in every noun incorporation construction type and exclude the possibilities on Beneficiary incorporation and incorporation of spatial participants in the caused motion events (see (i). Principle (ii) excludes the possibility of volitional Cause incorporation, see examples (2)-(3).

- (2) \emptyset -*yakan-qor-pela-ne-n* *atləyə-n*
 2/3.S/A-team-reindeer-leave-3SG.A.3.O-3SG.O father-NOM.SG
 Interpretation: ‘S/He left a reindeer team for the father’.
 Impossible interpretation: ‘#S/He left the father for the reindeer team’.
 Impossible interpretation: ‘#The reindeer team left the father’.
- (3) **ηetyə-t* \emptyset -*ramajə-nə-lʔat-an-ne-na-t*
 skin-NOM.PL 2/3.S/A-village-TR-steer-VB-3SG.A.3.O-3SG.O-PL
 Intended interpretation: ‘S/He brought skins to the village’.

There is another principle restricting noun incorporation. If the participant does not receive force transmission or does not undergo change-of-state, its incorporation is lexically restricted and obeys additional principles. This is true for Instrument-like and spatial participants.

(iii) *Prototypically, incorporated participant either undergoes a change on q dimension and/or the force is transmitted to this participant;*

This principle captures the fact that Instrument incorporation is restricted in Amguema Chukchi, (4)-(5).

- (4) *ηinqej-e* \emptyset -*wəkwə-mna-ne-n* *walə*
 boy-INS 2/3.S/A-stone-sharpen-3SG.A.3.O-3SG.O knife.NOM.SG
 ‘The boy sharpened the knife with a stone’.
- (5) **ηinqej-e* \emptyset -*walə-swe-ne-n* *kupre-n*
 boy-INS 2/3.S/A-knife-cut-3SG.A.3.O-3SG.O net-NOM.SG
 Intended interpretation: ‘The boy cut the net with a knife’.

Location (6), Goal (8) and Source (7) incorporation in Amguema Chukchi is restricted by lexical class of the Path verbs without Manner specification. However, as we state in [Vinyar & Gerasimenko 2018] this incorporation is not irregular and unpredictable: the verbs denoting the departure from the Source incorporate only the Goal, while the verbs of arrival to the Goal incorporate the Source participant, see (7)-(9).

- (6) <...> *ən-kə* *γ-amelqə-pelat-lən=a* *rʔew-∅*
 this-LOC PF-shoal-be.left-PF.3SG=PTCL whale-NOM.SG
 ‘<...> There was a whale in the sand, aground’ («Ice age» text, sentence 15).
- (7) *ηinqej-∅* \emptyset -*kate-tko-ra-kwat-γʔ-e* *jara-jpə*
 boy-NOM.SG 2/3.S/A-write-ITER-house_{INC}-go.away-TH-2/3SG.S house-ABL
 ‘The boy went from home to school’.
- (8) a. *ηinqej-∅* \emptyset -*jara-pker-γʔ-e* *kaletkora-γtə*
 boy-NOM.SG 2/3.S/A-house-arrive-TH-2/3.SG.S school-DAT
 ‘The boy came from home to school’.
- (9) b. **ηinqej-∅* \emptyset -*jara-pker-γʔ-e* *kaletkora-jpə*
 boy-NOM.SG 2/3.S/A-house-arrive-TH-2/3SG.S school-ABL
 Intended interpretation: ‘The boy came to home from school’.

Thus, «adjunct incorporation» in Amguema Chukchi forms an independent subtype of incorporative constructions (contrary to the analysis of the Chukchi material in [Spencer 1995]). However, this process is not absolutely arbitrary and lexicalized (contrary to the premise in [Baker 2009] for other languages): such structures form a microfamily of unproductive constructions with their own restrictions. Although the incorporation of non-core participants remains little studied, one can consider the similarity of our analysis of the incorporation of spatial participants with the formal-semantic analysis of the incorporation of adjuncts in Kiowa (Kiowa-Tanoan, North America) proposed by [McKenzie 2021]. It is possible, in case of an increase in the number of works analyzing the incorporation of non-core participants, to conduct a comparative analysis of such structures.

If the principle (iii) is obeyed, the noun incorporation construction is not subject to lexical restrictions. This restrictions makes it possible to analyze in the same model the incorporation of patientive participants of transitive (10) and intransitive events (11) as well as the Cause incorporation (12).

- (10) *ankʔam=e t-r-ityatek-wʔe=ʔəm t-r-awerʔ-epə-yʔa*
 and=PTCL 1SG.S/A-FUT-wash-TH=EMPH 1SG.S/A-FUT-skin.cloth-put.on-TH
t-ra-sapok-γəp-γʔa
 1SG.S/A-FUT-boot_R-put.on-TH
 ‘And I will wash myself, get dressed, put on my boots’. («Boots» text, sentence 6)
- (11) *∅-wəje-yala-yʔ-e, ∅-wja-yala-yʔ-e*
 2/3.S/A-air-pass-TH-2/3SG.S 2/3.S/A-blizzard-pass-TH-2/3SG.S
 ‘The storm is gone, the blizzard is gone’. («Yurgayuk» text, sentence 9)
- (12) *qora-yənretə-tʔə-n ∅-wəkwə-were-ne-n*
 reindeer-guard-ATTR-NOM.SG 2/3.S/A-stone-go.down-3SG.A.3.O-3SG.O
 ‘The landslide caught the reindeer’.

3. Incorporation constructions with promotion to the core syntactic function

This section is a synopsis of [Vinyar 2023] «Beyond syntactico-centric and lexicalist: event-structural force-dynamic approach to noun incorporation and promotion to direct object in Amguema Chukchi» and results of additional fieldwork.

In Chukchi, noun incorporation can make the privileged Direct Object of Intransitive Subject syntactic position “vacant” and allow another affected participant (in (13) — the Possessor of the body-part P) which otherwise would have been expressed as a less a prominent syntactic (sub)constituent to occupy this position.

- (13) a. *nute-wiriŋə-tʔ-e ∅-pilyə-swi-ni-n*
 land-protect-ATTR-INS 2/3.S/A-throat-cut-3SG.A.3.O-3SG.O
ʔeqe-tʔə-n
 bad-ATTR-NOM.SG
- b. *ʔnute-wiriŋə-tʔ-e ∅-swi-ni-n*
 land-protect-ATTR-INS 2/3.S/A-cut-3SG.A.3.O-3SG.O
ʔeqe-tʔ-in pilyə-n
 bad-ATTR-GEN throat-NOM.SG
- ‘The protector of the Motherland cut the throat of the enemy’.

In this dissertation and in [Vinyar 2023] I use the theory-neutral term *promotion*, and cognitive notion of *profiling* for such constructions. Let me first discuss the P-participant incorporation and promotion to Direct Object. Then I show how the same principles can be applied

for the incorporation of S-participant and non-volitional Cause incorporation. In the end of this section, I offer a diachronic explanation for proposed restrictions on promotion constructions. In Amguema Chukchi different participants can be promoted to Direct Object function: affected body parts (14), affected parts of inanimate objects (15), Beneficiaries and Maleficiaries (16)-(17), and Goals and Sources (18) of caused motion events.

- (14) *tə-ŋojŋə-kəplə-γʔa-n*
1SG.S/A-pelvis-hit-TH-3SG.O
'I hit him in the buttocks («Hooligan», sentence 7)'.
- (15) *qətiγ-a* *ye-retem-rəsimirʔew-line* *jara-ŋə*
wind-INS PF- roof.of.jaranga-tear.apart -PF.3SG jaranga-NOM.SG
'The wind tore apart the roof of the jaranga'.
- (16) *ekke-ne* *ətləγə-n* *∅-ʔəttʔə-n-qametwa-w-ne-n*
son-INS father-NOM.SG 2/3.S/A-dog-TR-eat-CS-3SG.A.3.O-3SG.O
'The son fed the dogs for the father/The son fed father's dogs'.
- (17) *telenjep* *maraw-ma* *uniʔ-e* *γ-akka-nmə-ləna-t*
long.ago war-SIM Chaplino.Yupik-INS PF-son-kill-PF.3SG-PL
ʔəttʔəjot-lʔa-t
before-ATTR-NOM.PL
'Long ago during wars Eskimos used to kill our ancestors' sons'.
- (18) *aʔek-na* *∅-taqʔa-nto-ne-n* *ewis-∅*
Oleg-AN.INS 2/3.S/A-supplies-take.out_{INC}-3SG.A.3.O-3SG.O bag-NOM.SG
'Oleg emptied the bag by taking the supplies out'.

All such constructions obey the force dynamics restrictions stated in (ii) and (iv). Informally, the restrictions can be described in the following way. The promoted participant's subevent should immediately follow the incorporated participant's subevent in a causal chain. This restriction adds a nuance to the previously discovered by [Polinsky & Nedjalkov 1987] function of incorporation constructions that the change of promoted to Absolute position participant is pragmatically salient.

(iv) *A participant undergoing a change on q dimension and profiled by the verb should immediately follow the incorporated participant in a causal chain.*

Let me demonstrate how restriction (iii) works. Consider (19)–(20) in the following context explained to my consultants: Ivan and Timur both wear glasses with similar optical power (so that each of them can wear the other's glasses). For some reason, Timur put on Ivan's glasses and went outside. There a bully broke those glasses. I asked my consultants to retell this short story in Chukchi and then offered them two constructed examples, shown in (19) and (20). My consultants commented that (19) sounds much more natural than (20), which indicates that the person who experiences the event directly (Timur, who wears the glasses) is the best candidate for the profiled DO slot. The person who experiences the event only indirectly (Ivan, who owns the glasses) is not a suitable candidate to occupy the DO slot.

- (19) *timur-na* *ya-jpə-ləna-t* *tin-ləle-t* *ivan-nen* *i*
Timur-AN.INS PF-put.on-PF.3SG ice-eye-NOM.PL Ivan-GEN and_R
e-wilu-kə-ŋinqej-e
CAR-hear-CAR-boy-INS
∅-tin-ləle-n-sime-w-ni-n *Timur*
2/3.S/A-ice-eye-TR-break-CS-3SG.A.3.O-3SG.O Timur.NOM.SG
'Timur put on Ivan's glasses and a bully broke those glasses (on Timur)'.
- (20) *#timur-na* *ya-jpə-ləna-t* *tin-ləle-t* *ivan-nen* *i*
Timur-AN.INS PF-put.on-PF.3SG ice-eye-NOM.PL Ivan-GEN and_R

e-wilu-kə-ŋinqeǰ-e *∅-tin-ləte-n-sime-w-ni-n*
 CAR-hear-CAR-boy-INS 2/3.S/A-ice-eye-TR-break-CS-3SG.A.3.O-3SG.O
ivan
 Ivan.NOM.SG

Interpretation: ‘Timur put on Ivan’s glasses and a bully broke some other glasses on Ivan’.

In [Vinyar 2023] I show that grammaticality and grammaticality of constructions with different promoted participants can be explained by force-dynamic restrictions stated above. Moreover, I show that analyses based on syntactic or semantic roles and not taking into account the event structure are have problems dealing with data I obtained. This makes our force-dynamic analysis an alternative to lexicalist (see e.g. [Spencer 1995]) and syntactocentric (see e.g. [Baker et al. 2005] analyses.

The same restrictions (i)-(iv) correctly predict the behavior of constructions of incorporation of patientive single participant of intransitive event. Constructions like (21) (see [Nedjalkov 1977] and [Polinsky & Nedjalkov 1987]) serve to promote to core syntactic position the participant most immediately affected by the incorporated participant's subevent.

- (21) *ʔetki waj=e uzhe tə-nanqə-paat-γʔa-k*
 bad here.is=PTCL already_R 1SG.S/A-belly-swell-TH-1SG.S
 ‘I already feel bad, my stomach has swelled’. (‘Not eating larvae’ text, sentence 36)

As in case of promotion to Direct Object, different types of participants can be promoted to Intransitive Subject position. The possessors of body parts (21), the inanimate wholes of incorporated parts, (potential) possessors (23) and most rarely relatives of incorporated individuals can be promoted. All these constructions obey the principles (ii)-(iii) that the promoted participant should immediately follow the incorporated one in a causal chain, see (22)-(23) analogous to (19)-(20) above.

- (22) *γəm-nan tə-ǰpə-na-t tin-ləte-t*
 I-GEN 1SG.S/A-put.on-3SG.O-PL ice-eye-NOM.PL
timur-nine-t i tə-tin-ləte-simet-γʔe-k
 Timur-GEN-PL and_R 1SG.S/A-ice-eye-break_{ITR}-TH-1SG.S
 ‘I put on Timur's glasses and they broke (lit. ‘I glass-broke’)’.

- (23) *#γəm-nan tə-ǰpə-na-t tin-ləte-t*
 I-GEN 1SG.S/A-put.on-3SG.O-PL ice-eye-NOM.PL
timur-nine-t i ∅-tin-ləte-simet-γʔ-i
 Timur-GEN-PL and_R 2/3.S/A-ice-eye- break_{ITR}-TH-2/3SG.S
 Intended interpretation: ‘I put on Timur's glasses and they broke (lit. ‘He glass-broke’)’.
 Interpretation: ‘I put on Timur's glasses and some other glasses broke on Timur/on someone’.

The incorporation of non-volitional Cause, previously studied only by [Nedjalkov 1982], also obeys principles (i)-(iii). In Chukchi, intransitive verbs productively incorporate participants denoting meteorological and other natural phenomena, allowing affected animate and inanimate participants to occupy the core syntactic position of Intransitive Subject (24) or Direct Object (25).

- (24) *ramaj ∅-weem-rʔite-γʔ-i*
 village 2/3.S/A-river-gallop-TH-2/3SG.S
 ‘In the village, all rivers and creeks started to flow’.
- (25) *ramaj ∅-weem-rʔite-ni-n*
 Village 2/3.S/A-river-gallop-3SG.A.3.O-3SG.O
 ‘The river/rivers near the village started to flow’.

I have made restrictions found by [Nedjalkov 1982] more explicit for Amguema Chukchi. Cause incorporation is possible because this participant not only causes changes, but is itself subject to change (principles (i)-(ii)). Despite the fact that incorporating verb is a monotransitive predicate, the constructional principles (ii)-(iii) governing promotion make it possible to code immediately affected participants as Direct Objects and Intransitive Subjects. The type of Cause subevent of incorporated participant determines the transitivity of the construction: if the incorporated Cause is spatially external to the affected participant, the latter is coded as the Direct Object (25). If the incorporated Cause is spatially internal to affected participant, the latter is coded as Intransitive Subject (24). According to consultants, (24) means that rivers and creeks started to flow inside the borders of the village, while (25) implies that the river flow separated the village from other parts of tundra.

I have managed not only to establish force-dynamic restrictions on noun incorporation constructions, but also to propose a diachronic and cognitive explanations for them. I argue that the requirement of immediate affectedness of promoted participant is derived from the diachronic origin of these constructions in body-part incorporation constructions.

To make statements about constructions' diachrony, I conducted an additional diachronic typology study. It is based on 52 genealogically independent languages from different macro-areas. This study has shown¹ that incorporation of a body-part and promotion of its affected participant diachronically precedes other incorporation constructions with promotion. For many constructions with promotion, it is possible to propose the pathways of their development from body-part incorporation construction. If these pathways are true, it is possible that these constructions partially inherit the body-part construction's restrictions: namely, the restrictions of immediateness of affectedness.

The development pathways I propose are partially corroborated by comparative Chukotian data. While body-part and part-whole constructions are present in both Chukchi and languages of Koryakic branch, I was unable to find constructions of Goal/Source promotion in neither Alutor nor Koryak. This can mean that such constructions are Chukchi innovation.

Diachronic motivation of restrictions can be additionally supplemented by a cognitive factor. Incorporation of body-parts can be regarded as the most prototypical among the constructions with promotion: it displays the highest value of asymmetry in salience between the promoted and incorporated participant as well as the most direct kind of affectedness of the latter participant. This is also true for other external possession constructions (e.g. see [Fried 2010]). Our typological study also shows that promoting constructions with incorporated body-parts are cognitively salient: there are languages in which this construction is either the only incorporation construction (e.g. see Murriny Patha, [Walsh 1976; 1996]) or the most prototypical one (see Paraguayan Guarani in [Velazquez-Castillo 1996]).

4. Affixal verbs: diachrony and links with noun incorporation constructions

This section is a synopsis of [Vinyar 2019] «Suffixal predicates in Chukchi: semantics, typology and diachronic source. It also briefly summarizes the results of my additional areal-typological study of affixal verbs and other verbalizers in languages of Siberia.

Denominal verbalizers are present in Amguema Chukchi as well as other Chukchi varieties. These are morphologically bound morphemes deriving verbs from nouns. Some of them have quite abstract semantics (like «use N», «make N») common for verbalizers in many languages.

¹ For every language in the sample, I noted which types of constructions are found. On the basis of constructions' co-occurrence, implicational hierarchies can be formed, where the presence of construction B presupposes the presence of construction A. On the basis of hypothesis that such hierarchies reflect constructions' diachronic pathways (see [Mithun 1984]), I make propositions about the noun incorporation constructions' diachrony.

However, others denote concrete, lexical concepts, more common for verbal roots in many languages. For example, *-ŋəttə* denotes an event of hunting a game animal (26).

- (26) *ətlayə-n* *∅-yalya-ŋəttə-yʔ-e*
 father-NOM.SG 2/3SG.S-duck-CATCH-TH-2/3SG.S
 ‘The father hunted ducks’.

Such morphemes are sometimes called *lexical affixes*, see [Mithun 1997] for languages of North-West Coast of North America and [Kurebito 2001] for Chukchi. In this dissertation, I use the term affixal verbs for such lexically concrete verbalizers to avoid the confusion with bound morphemes denoting entities (*affixal nouns*).

Affixal verbs, unlike incorporating verbal stems, cannot be used as a single lexical element of a wordform (as roots or stems), compare (26) and (27).

- (27) **ətlay-e* *yalya-t* *∅-ŋəttə-ni-ne-t*
 father-NOM.SG duck-NOM.PL 2/3SG.S-CATCH-3SG.A.3.O-3SG.O
 Intended interpretation: ‘The father hunted ducks’.

Affixal verbs in Chukchi do not form a strict class. In [Vinyar 2019] I show that such constructions show parallel morphosyntactic restrictions on their formation with noun incorporation constructions. Semantically, denominal verbalizers form a continuum between the most abstract ones and most root-like concrete ones — affixal verbs, see Table 1 below. However, for consistency (and for the additional areal-typological study) I label as affixal verbs such verbalizers which have a lexical component in their semantics. This means that affixal verbs either specifies event's Manner, Change-of-State type or Quality. Chukchi verbalizers and affixal verbs are provided in Table 1 (from most concrete to most abstract ones).

Morphosyntactically, predicates formed by affixal verbs can participate in the same range of constructions as verbs with noun incorporation. The nominal base of affixal verbs can be complex (see (35)) the way the incorporated noun is. Affixal verbs can occur in constructions of promotion to Direct Object (28), of promotion to Intransitive Subject (29), and in «meteorological» constructions of Cause «incorporation». The same restrictions (i)-(iii) are applied to these constructions.

- (28) *sit* *∅-qəmt-o-rkə-ne-n* *pseqa-tyə-qaj-∅*
 about.to 2/3.S/A-marrow-EAT-IPFV-3SG.A.3.O-3SG.O bird-SING-DIM-NOM.SG
 ‘He was about to eat little bird's bone marrow’. («An evil spirit and a bird», sentence 10)
- (29) *∅-kʔeli-ntet-yʔ-i*
 2/3.S/A-hat-TEAR.OFF-TH-2/3SG.S
 ‘His hat fell (and got lost)’.
- (30) *jʔii-n* *jʔe-twə-yʔ-i*
 sky-NOM.SG cloud-REV-TH-2/3SG.S
 ‘The sky got clear from clouds’.
- (31) *ena-rʔora-wə-lʔə-n* *jʔe-twə-ni-n*
 ANTI-gadfly-CS-ATTR-NOM.SG cloud-REV-3SG.A.3.O-3SG.O
 ‘The sky got clear from clouds (and it negatively affected the summer herder)’.

Semantically, affixal verbs can specify Manner and/or State for higher or lesser degree and hence be more or less root-like (according to formal approaches like [Beavers & Koontz-Garboden 2020]). For example, the suffix *-yərki* ‘DRAG.OUT’ denotes not every kind of getting an object, but only obtaining flora-like objects through dragging them and applying force, see (32)-(33).

- (32) *mət-saj-o-mək=ʔəm* *i* *neme*
 1PL.S/A-tea-EAT-1PL.S/O+EMPH and_R again
mət-pʔu-yərki-mək

- 1PL.S/A-claytonia.acutifolia-DRAG.OUT-1PL.S/O
 ‘We drank tea and collected roots again’(«Walk» text, sentence 9).
- (33) *Ø-ʔəlqep-yərki-yʔ-i*
 2/3.S/A-nail-DRAG.OUT-TH-2/3SG.S
 Intended interpretation: ‘He gathered (scattered) nails’.
 Interpretation: ‘?He dragged nails from somewhere’.

Suffix *-ŋəttə* ‘CATCH’ denotes only getting in a specific Manner (by hunting), compare (26) and (34).

- (34) *#ya-qaa-ŋəttə-lən*
 PF-reindeer-CATCH-PF.3SG
 Intended interpretation: ‘He caught reindeers (split from the main herd)’.
 Interpretation: ‘Someone hunted reindeers’.

Such affixal verbs cannot thus be analyzed as semantically consisting only of abstract primitives, contrary to [Johns 2007; 2009] analysis of similar constructions in Inuktitut and other languages including Chukchi.

Other affixes have specific semantics, although does not require an event to unfold in a certain Manner. Suffix *-nŋe* ‘GET’ (emerged from the verb stem *təŋe-* ‘grow’) describe any type of getting an object not from nature, see (35), (36).

- (35) *ye-mejŋə-wit-kupre-nŋe-lin*
 PF-big-goods-net-GET-PF.3SG
 ‘He bought a very expensive net’.
- (36) *yəm-nin rojrə-n Ø-mane-nŋa-yʔ-e*
 I-GEN family-NOM.SG 2/3.S/A-money-GET-TH-2/3SG.S
 ‘My family got some money’.

If one compares even semantically concrete affixal verbs with quasi-synonymous verb stems, affixal verbs can often be regarded as semantically bleached. Sometimes the affixal verb is polysemous. Suffixal verb *-u* ‘EAT’ (probably originating in *ru-* ‘eat, devour’) can be used in two different ways. Deriving verbs from noun stems denoting food, small animals and psychoactive substances it denotes consumption: eating (37), drinking (32) or using drugs (38). If it attaches to noun stem denoting game animals, it denotes getting such an animal by hunting (39). In other Chukchi dialects (see [Skorik 1977]) it further generalized its semantics via metaphor to denote getting something from people by force.

- (37) *aləm=ʔəm sit *nin n-rəsw-o-jyəm=ʔəm*
 although=EMPH about.to FST ST-larva-EAT-NP.1SG+EMPH
 ‘I used to eat grubs’. («Larvae» text, sentence 5)
- (38) *nə-taaq-o-qen*
 ST-tobacco-EAT-ST.3SG
 ‘He smokes’.
- (39) *ənqo ilja ye-nn-u-lin*
 then Ilja PF-fish-EAT-PF.3SG
 ‘Than Ilja caught a fish’. («Fishing with Ilja», sentence 17)

Sometimes affixal verbs cover a wider range of semantic frames as compared to cognate verbs, compare (38) and (40). It is worth noting that even in such cases the corresponding affixal verbs «blocks» noun incorporation into a cognate quasi-synonymous verb stem (an observation in [Kurebito 2001] which I clarify for Amguema Chukchi in [Vinyar 2019]).

- (40) *#nə-ine-nu-qin taaq*
 ST-INV-eat-ST.3SG tobacco.NOM.SG
 Intended interpretation: ‘S/He smokes’.

Interpretation: ‘S/He eats tobacco’.

In terms of function, affixal verbs also exhibit an affinity with noun incorporation. During elicitation, it is possible to get examples in which the verbalized noun introduces a referent which can be subsequently referred to by a pronoun, see (41).

- (41) *atlayə-n* *γ-umq-u-tin*
 father-NOM.SG PF-polar.bear-EAT-PF.3SG
Ø-ren-ni-n *nəmnəm-etə*
 2/3.S/A-bring-3SG.A.3.O-3SG.O village-DAT
 ‘Father got a polar bear by hunting and brought it to the village’

However, in spontaneous texts affixal verbs more often exhibit different range of functions. They are used to verbalize backgrounded participants which are not the main topic or focus of the discourse fragment. This allows Chukchi speakers to introduce referents and keep reference tracking of participants without providing them with privileged syntactic roles of Subjects and Objects. Affixal verbs can perform this function together with noun incorporation constructions (depending on whether the event type can be coded by an affixal verb or an incorporating stem). Such processes can be observed in «Not eating larvae» (available as other texts on *chuklang.ru/full_texts*). The text is about speaker's childhood, when she was not willing to eat gadfly grubs (Chukchi eat them during the process of cleaning reindeers' skins). Grubs are not the salient discourse participants of this text: the story is about how the speaker's older sister used her to swallow a grub and it resulted in allergic reaction. In the first five sentences of the text the grubs are mentioned five times, but they are never referred to by a noun phrase: collecting grubs and eating them is always denoted by noun incorporation and affixal verb constructions (42).

- (42) *γəm* *neməqej* *nə-rəswatə-ηəttə-qena-t*
 I also ST-larva-CATCH-ST.3SG-PL
neməqej *γəm* *nə-winret-iyəm* *nə-rəswa-nto-jyəm*
 also I ST-help-ST.1SG ST-larva-take.out_{INC}-ST.1SG
 ‘(They collected grubs), I also helped, I collected grubs’ («Not eating larvae» text, sentence 2)

In my studies I was able to identify only a single feature which makes a distinction between functions affixal verb and noun incorporation constructions. At least some affixal verbs and denominal verbalizers can verbalize proper nouns (43), while proper nouns seem to resist noun incorporation in Amguema Chukchi (43)².

- (43) *qut-ti=ʔəm* *ənɾʔam=ʔəm* **nəpliski* *pl'iska-nŋa-qena-t*
 some-NOM.PL=EMPH obviously=EMPH FST Pliska-GET-ST.3SG-PL
 ‘And some other people bought «Pliska» (popular brendy trademark in USSR)’.
 («Brendy» text, sentence 9)

Functional, morphosyntactic and semantic affinity between affixal verb and noun incorporation constructions can be explained diachronically. Some of affixal verbs most probably emerged from verb roots in noun incorporation constructions: see previously mentioned *-nŋe* 'GET' < **təŋe-* 'grow'; *-u* 'EAT' < **ru-* 'eat'; *-γərki* 'DRAG.OUT' < **γərki-* 'drag out' and see Table 1. Moreover, in modern Amguema Chukchi some verbal stems exhibit non-automatic allomorphy in incorporation constructions (see [Vinyar 2019]). Thus, at least some affixal verbs developed through the phonological change of the verbal heads of incorporating complexes, a process similar to the one proposed by [Mithun 1997] for Salish languages.

² It is worth noting that the possibility of proper noun incorporation requires further studies. It is also interesting that affixal verbs and verbalizers can attach to proper nouns at least in some Inuit languages (see [Johns 2009]).

Table 1. Chukchi verbalizers and affixal verbs (from most concrete to most abstract) and some cognate verbal stems

Показатель	Значение	Когнат	Перевод когната
-yərki	DRAG.OUT; ‘drag out’	yərki-	gather
-ŋəttə	CATCH ‘hunt X’	n/a	
-yili	GATHER ‘gather X’	yisi-	gather
-sitv	PLAY ‘play X’	n/a	
-tw	REV ‘take X off’	n/a	
-u	EAT ‘eat, hunt X’	ru-	eat
-rʔuv	DISTR.S ‘the natural event to happen’	n/a	
-ŋəta	GO.DO ‘go for X’	ŋəta-	go to coastal people for supplies
-ytv	GO.TO ‘go to X’	jət-(kpy)	go to
-ŋje	GET ‘get, obtain X’	təŋe-	grow
-turev	LIBER ‘get free from X’	n/a	
-ŋətet	TEAR.OFF ‘X tears apart’	ŋət-	get free from X
ta-...-ŋv	MAKE ‘make X’	n/a	
-ʔetv	PLAC ‘move by X’	rə-ʔet-et	drive
-tku _v	ITER ‘use X’	n/a	
-ew _v	CS ‘most commonly — entering a state’	n/a	
-etv	VB ‘general verbalizer’	n/a	

However, noun incorporation is not the only diachronic source for affixal predicates. For example, *-ŋəttə* ‘CATCH’ can be reconstructed to proto-Chukotian (< **-ŋərti*), see [Fortescue 2005], but there is no clear cognate verb root. Some other affixal verbs and verbalizers emerged from verbal derivational morphemes (some of them are marked with *v* in Table 1).

There is a possibility that an areal contact factor played its role in the development of affixal verbs in Chukchi. Eskimo-Aleut languages can be a probable source of these constructions (see [de Reuse 1994] for modern Chukchi-Yupik contacts) because of semantic parallels between affixal verbs in these languages and the ones in Chukotian branch. Moreover, other languages of North-Eastern Siberia exhibit similar verbalizers with concrete, lexical meaning. As my additional areal typological of 74 languages of Siberia and neighboring areas shows, such Manner- or State-specifying affixal verbs can be found in Northern Tungusic and some Samoyedic languages. Further

east, on the other side of Bering strait, affixal verbs are found in the languages of North-West Coast: Tsimshian, Wakashan, Chimakuan and to a lesser extent — Salish languages.

My areal typological study shows that affixal verbs are highly likely to be an areal feature of North-Eastern Siberia. While such affixes emerged from different constructions (which is true for Chukchi, too), there was a general areal preference for the result of such development and maintenance of them. This areal pattern can either be enforced through pattern borrowing between languages of known genetic affiliation or through substrate effects (see similar areal distributions of other features and hypotheses about a North-Eastern Siberian substrate in [Gusev 2021]). The possible contact-driven nature of affixal verbs in Siberia is corroborated by similarity of affixal verbs in these languages: concepts «to hunt», «to gather (flora)», «to consume» and «to play» are recurring. Previous studies of denominal verbs (see [Aikhenvald 2011] and [Mattiola & Sansò 2021]) have noted the relative rarity of such semantics, so the semantic similarity across language cannot be attributed to chance resemblance.

5. Conclusion

In this dissertation I summarized and complemented the three papers put up for defence. The papers and the dissertation adds new data to previous descriptions of noun incorporation and affixal and affixal verbs in Chukchi language. Additionally, my studies provide a unified approach for these constructions modelling the restrictions on their formation in the framework of force dynamic event decomposition. As we show in [Vinyar & Gerasimenko 2019], besides general restrictions on incorporation, incorporation of spatial participants exhibits lexical, although not unpredictable restrictions. As for P-like participants' and Cause incorporation constructions, I show that the possibility of incorporation and promotion is governed by the nature and relative order of subevents in the event structure. This approach provides an alternative to previous lexicalist and syntactocentric approaches to noun incorporation (see [Vinyar 2023] and Section 3). Finally, in [Vinyar 2019] I show that the affixal verbs constructions can be analyzed in a similar vein.

Additional diachronic typological study I conducted deepens the understanding on the restrictions on noun incorporation constructions: such restrictions can be analyzed as stemming from partial inheritance during the diachronic pathways of development. As for affixal verbs, a supplementary study of areal typology of verbalizers in Siberia shows that there are possible contact-induced factors which shaped the Chukchi system of affixal verbs.

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