

The emergence of conjunctions and phrasal coordination in Khanty

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1. Claims:

- 19th-century Khanty had no conjunctions and no phrasal coordination;
- the appearance of conjunctions in the 20th century paved the way for phrasal coordination;
- in traditional Khanty, phrasal coordination was blocked by processing economy

2. Background:

- Syndetic coordination is claimed to arise with literacy (Chafe 1985, Mithun 1988, Stassen 2003), based on evidence from African, American, Siberian languages (Yukaghir, Kamchadal).
- New observation: lack of asyndetic coordination on the phrase level.

Sources and methodology

i. Analysis of corpora representing 4 stages of Khanty:

1. Paasonen tales (1901, Yugan area; 4000 words); some additional data from Lewy (1911);
2. Marenjanin's autobiographical notes (1936, Sherkaly; 6000 words);
3. Rédei corpus (1964, Kazym; 3740 words);
4. Texts collected by Márta Csepregi (1990s, Surgut; 4200 words); additional data from
 1. a spoken corpus collected by Csepregi & Gugán (2017).

ii. Contemporary data obtained by elicitations from 3 Surgut speakers.

No significant dialectal variation in the respect of coordination.

3. Coordination in Old Khanty (Paasonen tales collected in 1901)

3.1. Asyndetic clausal coordination

- (1) [qo:ləm sv:t tʃv:ət mə-ss-əm], [kə:rkəm i:mi βə-ss-əm].
 three hundred ruble give-PST-1SG hard-working woman take-PST-1SG
 'I payed 300 rubles, I took a hard-working wife.' (OUIDB 1316)
- (2) [männ-əs], [pon noq tɛ:l-s-i], [qu:t tɛ:tʃ-s-i],
 go-PST.3SG fish_basket up pull-PST-PASS.3SG fish catch-PST-PASS.3SG
 [tɛ:rəy tɛ:tʃ-s-i], [sv:rt tɛ:tʃ-s-i], [jv:β tɛ:tʃ-s-i].
 ruff catch-PST-PASS.3SG pike catch-PST-PASS.3SG perch catch-PST-PASS.3SG
 'He left, the fish-basket was pulled up, fish was caught, ruff was caught, pike was caught, perch was caught.' (OUIDB 1316)

Uncertain quantities expressed by asyndetic disjunction:

- (3) [qo:əpti βat-l-ət], [βv:nəpti βat-l-ət].
 long live-PRS-3PL short live-PRS-3PL
 'They live for a long time, [or] they live for a short time.' (OUIDB 1313)

Three-four occurrences of adverbs/particles used as connectives in the whole corpus.

Pa 'other' + Locative:

- (4) [βɛli βɛl] pɛ:nə [nʲoβ βɛl].
 reindeer kill-PST.3SG on_the_other_hand/and elk kill-PST.3SG
 'He killed reindeer, and he killed elk.' (OUIDB 1316)

In disjunctive clauses expressing approximate quantities: *məβ(ə)/müw* '(some)what', 'about':

- (5) [*tot məβ əj qatł βat-s-əγən*], [*məβə kə:t qatlyən βat-s-əγən*].
 there about one day live-PST-3DU about two day-DU live-PST-3DU
 'There, they stayed for about one day, they stayed for about two days.'

Clause linking via the subordination of one of the propositions:

- (6) [*i:mi βe:n-γə joft-əm t̩:t-nə*] *ju:β toj-ε qu:ηt-əs*.
 woman near-TRNS come-PTCP.PST time-LOC tree top-LAT climb-PST.3SG
 'The woman having come close, he climbed to the tree top.' (OUDB 1315)

3.2. Lack of phrasal coordination/conjunction reduction

No subject coordination:

- (7) [*torrəm ji:r βer-t̩γə m̩:st-l̩*], [*məγ ji:r βer-t̩γə m̩:st-l̩*].
 sky animal_sacrifice do-INF need-PRS.3SG earth animal_sacrifice do-INF
 need-PRS.3SG
 'A sky animal sacrifice needs to be made, an earth animal sacrifice needs to be made.'
 (OUDB 1313)

No object coordination:

- (8) [*pro pu:pi toβə qu:jsətəγ*], [*por βv:jəγ toβə qu:jsətəγ*], [*βοqu toβə qu:jsətəγ*],
 bear there left wolf there left fox there left
 [*t̩fe:βər toβə qu:jsətəγ*], [*t̩u:t pu:rnə kəmləγ qu:jsətəγ*].
 rabbit there left that after wolverine left
 'He left behind the bear, he left behind the wolf, he left behind the fox, he left behind the
 rabbit, he left behind the wolverine.' (OUDB 1315)

Distribution expressed by multiple juxtaposed clauses:

- (9) [*qo: əj βəti toj, u:lə βet-təγ*], [*qo: əj t̩:β taj-εs, u:lə βeltəγ*],
 someone reindeer have.PST.3SG kill-PST-SG<3SG someone horse have-PST.3SG
 kill-PST-SG<3SG someone cow have-PST.3SG kill-PST-SG<3SG
 [*qo: əj v:tʃ taj-εs, u:lə βeltəγ*] *pv:ri βer-t̩γə*.
 someone sheep have-PST.3SG kill-PST-SG<3SG feast do-INF
 'Someone had a reindeer, he killed it, someone had a horse, he killed it, someone had a
 cow, he killed it, someone had a sheep, he killed it to have a feast.' (OUDB 1313)

The comitative strategy of coordination:

- (10) *t̩u: qo: i:mi-l-n̩t n̩e:βrem-əl-n̩t tot v:məs-l-ət*.
 that man wife-3SG-COM child-3SG-COM there sit-PRS-3PL
 'That man is sitting there with his wife, with his children.' (OUDB 1313)

3.3. Co-compounding

- Co-compounding: two nouns that denote closely-related concepts combined into compound-like constructions (Wälchli 2005).

- Conditions: semantic and morphological parallelism.

- (11) a. *i:mi-γən i:ki-γən pay taj-s-əγən*.
 woman-DU man-DU son have-PST-DU
 'The woman [and] the man had a son.' (OUDB 1315)

- b. *kur-a uĉ-a kerjentīdāi-ŋen*
 foot-LAT clothes-LAT fall-PST.DU
 'They fell on feet, on clothes' (Lewy 1911: 21)

⇒ A co-compound is dominated by a single nominal functional projection.

When 3 referents that have the same function: one co-compound, two clauses:

- (12) *βοqu-γᾶν tfe:βᾶr-γᾶν ləβ jot-εł jə-s-γᾶn, kəmləγ ləβ jot-εł*
 fox-DU rabbit-DU he with-3SG come-PST-3DU wolverine he with-3SG
jə-s.
 come-PST.3SG
 'The fox [and] the rabbit came with him, the wolverine came with him.' (OUDB 1315)

3.4. Interim summary

Old Khanty: only asyndetic clausal coordination, no conjunction reduction/no phrasal coordination - except for co-compounding

4. The emergence of syndetic coordination

4.1. Maremjanin's autobiographical notes from 1936: the first conjunctions

- Still mostly juxtaposition of clauses:

- Occasionally, conjunctions borrowed from Russian (*i/ij* 'and' or *a* 'but'):

- (13) a. [*Jaj-em tɔw-ŋ-ət kīr-əs*] *ī* [*manət teśat-s-ətte wɔš-a*].
 brother-1SG horses-DU-3SG harness-PST.3SG and me prepare-PST-SG<3SG city-LAT
 'My brother harnessed his two horses, **and** he prepared me for the city'
 (Steinitz 1989: 135)
- b. [*tet-öt-na tusa tapət-s-ət*], *a* [*tumət-söχ-na änt tumpəptə-s-te*].
 food-LOC well feed-PST-SG<3SG but clothes-overcoat-LOC not dress-PST-SG>3SG
 'He fed me well with food, **but** he didn't dress me in clothes and overcoat.'
 (Steinitz 1989: 153)

Still no conjunction reduction / no coordination of subjects:

- (14) [*Tām zawod-ət fabrikaj-ət ūw-t-ət*] *ī* [*tūtəŋ-tūjt-ət ūw-t-ət*]
 this works-PL factory-PL roar-PRS-3PL and fiery-sledge-PL roar-PRS-3PL
ī [*awtomobil-ət ūw-t-ət*]
 and car-PL roar-PRS-3PL
 'These works-factories roar, and railways roar, and cars roar.' (Steinitz 1989: 145)

No coordination of objects/no conjunction reduction:

- (15) [*Jönttə tɔw-ət wer-s-əm*], [*jönttə uxt-ət wer-s-əm*],
 playing horse-PL make-PST-1SG, playing sledge-PL make-PST-1SG,
 [*jönttə sese-t wer-s-əm*], [*jönttə śorkan-ət wer-s-əm*].
 playing looptrap-PL make-PST-1SG, playing bowtrap-PL make-PST-1SG
 'I made toy horses, I made toy sledges, I made toy looptraps, I made toy bowtraps.'
 (Steinitz 1989: 133)

Sporadically, conjunctions between coordinated NPs.

Nominals linked by *i* still observe the same restrictions as co-compounds:

- (16) *Men jāχ-s-amŋ sōta-jöχan-a ī muχtəŋ-jöχan-a χūt kăš-ta.*
 1DU go-PST-1DU Sōta-river-LAT and Muχtəŋ-river-LAT fish look.for-INF
 'We went to Sōta-river **and** to Muχtəŋ-river to catch fish.' (Steinitz 1989: 139)

Co-compounds still general:

- (17) *mõŋ tawtaw mīstaw šōras χu-na arə pūš*
 we horse-PL-1PL cow-PL-1PL merchant man-LOC many time
χorjat-ij-s-aj-ət.
 seize-FREQ-PST-PASS-3PL
 'Our horses [and] cows were many times seized by the merchantman.' (Steinitz 1989: 189)

4.2. Northern Khanty texts from 1964: spread of conjunctions, emergence of phrasal coordination

Juxtaposed clauses without an overt conjunction still common:

- (18) [*βuti sox jeməŋ taxi-ja ixət-t-a*], [*s'ata xaj-t-a*].
 reindeer skin sacred place-LAT hang-PRS-PASS.3sg there leave-PRS-PASS.3SG
 'The reindeer hide is hung up at the sacred place, it is left there.' (OUDB 878)

(19) Grammaticalization of native conjunctions:

corpus	conjunctions	disjunctions
Paasonen (1901) ≈ 4000 w.	<i>pə:nə</i> (n=4)	<i>məβə</i> (n=1)
Maremjanin (1936) ≈ 6000	<i>i</i> (n=28)	
Rédei (1964) ≈ 3700 words	<i>pa:</i> (n=56)	<i>muj</i> (n=5)

Clausal coordination with *pa:*:

- (20) [*n'ɔ:-t juβtəsət*] *pa:* [*mɔ:jpər xɔ:j-t-a*].
 arrow shoot-PRES.3SG and bear hit-PRS-PASS.3SG
 'The arrow shoots **and** the bear is hit.' (OUDB 1022)

Adversative parallel clauses linked by Russian *a*:

- (21) [*je:tn-a ji-t*], [*pasan-ən isiiti letoti xaj-t-əm*],
 evening-LAT become-PRS.3SG table-LOC same.way full-of-food leave-PRS-SG<1SG
a: [*min ant ol-t-əmən la:βət-ti pit-t-əmən*].
 but 1DU NEG lie-PRS-1DU wait-INF will-PRS.1DU
 'Evening is coming, I leave food on the table again, **but** we won't sleep, we will wait awake.' (OUDB 1117)

Disjunction with *muj* 'what', 'or':

- (22) [*pro xuβ man-əs*] *muj* [*pro βa:n man-əs*].
 long go-PST.3SG or short go- PST.3SG
 'He went for a long time, **or/perhaps** he went for a short time.' (OUDB 1117)

Phrasal coordination of NPs/DPs:

- (23) *tuβ sorm-a ji-te-t jupijən s'ar-tat [me:t a:j*
 he death-LAT become-PTCP-3SG after shaman-PL.3SG most small
pox-tat-a] pa: [*met a:j e:βi-tat-a*] *pit-t-ət.*
 son-PL.3SG-LAT and most small daughter-PL.3SG-LAT pass-PRS-3PL
 'After he dies, his shamanic skills go **to his youngest sons and to his youngest daughters.**' (OUDB 878)

Phrasal coordination of predicative APs:

- (24) *jə:xəl-lal mə:jpər βoxəltə-ti pata βerən-s-aj-ət [βə:na-fək]*
 bow-PL<3SG bear overcome-PTCP.PRES for make-PST-PASS-3PL big- COMP
pa: [ta:ka-fək].
 and fast-COMP
 'His bows for shooting a bear were made **bigger and faster**.' (OUDB 1022)

Pa: still does not occur NP-internally:

- (25) *s'i [βe:s'əŋ nɛŋ-ət], [xorasəŋ nɛŋ-ət] pila aŋk-ət a:s'ie-t*
 this pretty woman-3SG beautiful woman-3SG with mother-3SG father-3SG
xos'a joxi man-əs.
 to home go-PST.3SG
 'With this **pretty woman, this beautiful woman**, he went home to his mother and father.' (OUDB 1117)

Muj as a disjunction is often strengthened with *pa:*:

- (26) *almənti ki s'i βuli is-ət [səmsajot-ət-a] muj pa: [tə:rəm-a] man-ət.*
 as if that reindeer soul-3SG spirit-PL-LAT or otherwise god-LAT go-PRS.3SG
 'Supposedly, the reindeer's soul goes to the spirits **or else** to god' (OUDB 878)

Co-compounding still prevalent:

- (27) *jɪŋk-ət muβ-ət jaŋx-əm βurəs tə:xs-əm iki*
 water-PL land-PL go-PTCP.PRS Wures friend-1SG old_man
 'my old friend Wures, who has crossed waters [and] lands' (OUDB 1117)

4.3. Eastern Khanty texts from the 1990s:

generalization of conjunctions, spreading of phrasal coordination

- Csepregi (1998; 2002): further increase in the use of conjunctions.

(28) Continuous increase in the frequency of conjunction use:

corpus	conjunctions	disjunctions
Paasonen (1901)	<i>pɛ:nə</i> (n=4)	<i>məβə</i> (n=1)
Maremjanin (1936)	<i>i</i> (n=28)	
Rédei (1964)	<i>pa:</i> (n=56)	<i>muj</i> (n=5)
Csepregi (1998; 2002)	<i>pɛ:n(ə)</i> (n=126) <i>o:s</i> (n=58)	

Syndetic clausal coordination:

- (29) *[ət'ə su:βəm-ət məji] pɛ:nə [pɛrt pu:l-ət*
 again reel-of-thread-INS give.PST.PASS.3SG and wood piece-INS
məji], pɛ:nə [mən].
 give.PST.PASS.3SG and go-PST.3SG
 'Again he was provided with a reel of thread **and** he was provided with a piece of wood, **and** he set off.' (OUDB 736)

- (30) *tu: βe:ti-t o:s, [βe:ti-t u:lə ki:t-lə-t], o:s [jaqə*
 those reindeer-PL also reindeer-PL down catch-PRS-PASS.3PL and home
βəjə-t], qv:t təypinə [u:l tətətt-ət].
 take.PST-PASS.3PL house inside down melt.PST-PASS.3PL
 'Those reindeer, **too**, the reindeer are caught, **and** were taken home, they were melted off in the house.' (OUDB 730)

Asyndetic coordination still common:

- (31) [*tʲi su:ltə-m-əm-ə ʉlək nʲu:r mɛ:n kətʃəy-nət ɛβətəm-i*
 so slip-PTCP.PST-1SG-LAT harness tether I-LOC knife-COM cut.PST-PASS.3SG
 [*mɛ:nə βɛ:ləy qoβit u:tnəm qu:ɣt-əm*].
 I-LOC driving-pole along up.to.bank climb-PST-1SG
 'Upon my having slipped, the harness tether was cut with a knife by me, I climbed
 along the driving pole up to the bank.' (OUDB 730)

NPs conjoined by *pɛ:nə*:

- (32) *kɛ:r-nə βɛrl-i kɛ:t pəkət-ɣən nʲɛ:nʲ: [ru:tʲ nʲɛ:nʲ] pɛ:nə*
 oven-LOC do-PRS-PASS.3SG two kind-DU bread Russian bread and
 [*qantəy nʲɛ:nʲ*].
 Khanty bread
 'In the oven, two kinds of bread are made: Russian bread and Khanty bread.'
 (OUDB 1076)

Pɛ:nə has appeared as an alternative to the dual suffix:

- (33) a. *pi:tʃɨŋyali-ɣən o:pi-sɛ:-ɣən* (1901)
 little.bird- DU older.sister-ASC-DU'
 b. *pi:təŋkali pɛ:nə o:pi* (1993)
 little-bird and older.sister

Co-compounding still general:

- (34) *tʲi i:ki tɛ:s-ət βay-ət jaqə i:lt-ət.*
 this old_{man} wealth-PL money-PL home take-PST.3PL
 'They took home this old man's riches [and] money.' (OUDB 734)

Disjunctive coordination at the phrase level - by *mʉβ*, *kʉtf*: or *antɛqɛpə*.

- (35) *mɛ: paqqə βal-m-əm-nə [je:ŋ ʉrəkka qo:-ləm v:t-nə] mʉβ*
 I little.boy-TRNS live-PTCP.PST-1SG-LOC thirteen year-LOC or
 [*je:ŋ ʉrəkka nʲələ v:t-nə*] *βal-m-əm-ə*
 fourteen year-LOC live-PTCP.PST-1ST-LAT
 'Me being a little boy, thirteen years old **or** fourteen years old, ...' (OUDB 730)

Still no conjunction reduction in many cases:

- (36) *sɛ:pət tɔβ u:lə kərəy-m-ɛt tɛ:t-nə, [sɛ:pət tɔβ-ət tət rək-kən],*
 neck bone off fall-PTCP.PST-3SG time-LOC neck bone-3SG here fly.PST-3DU
 [*sɛ:pət tɔβ o:s noq tɑqqən-təy*].
 neck bone also up sit.back.PST-3DU
 'When the neck bone [cut into two] fell off, his neck bone flew up, and the neck bone
 sat back to its place.' (OUDB 737)

Gapping appears:

- (37) [*pɛ: v:ntəp jəmsi qv:t pɛlək-ə qatəltə-t-tɛt*], [*pɛ: v:ntəp pəyi*
 some cradle right house side-LAT carry-PRES-PL<3PL other cradle left
qv:t pɛlək-ə].
 house side-LAT
 'They carried some of the cradles to the right side of the house, the other cradles to the
 left side of the house.' (OUDB 735)

4.4. Interim summary

1936: sporadic occurrences of the Russian conjunctions *i* and *a*;
 1964: recurring use of conjunctions and disjunctions grammaticalized from native words;
 1990s: systematic use of conjunctions and disjunctions; but juxtaposition still common.

1936: the first examples of phrasal coordination;
 1964–1990s: growing number of coordinated constituents;
 no phrasal coordination and no conjunction reduction in the DP/NP
 1990s: first signs of the replacement of co-compounding by syndetic coordination.

5. Coordinated constructions in 21st century Khanty

- In today's Eastern (Surgut) Khanty, overt conjunctions are ubiquitous.
- Overt conjunctions are strongly preferred with both clausal and phrasal conjuncts.
- Phrasal coordination in contemporary Khanty overwhelmingly results from coordination of individual phrases (as opposed to clausal coordination + conjunction reduction).
 - Ellipsis is quite restricted ⇒ genuine phrasal coordination prevalent.
- An alternative to coordination, co-compounding, is still in use (not discussed here).

5.1. Syndetic clausal coordination

Examples without overt conjunctions, according to the speakers, sound incomplete (though not strictly ungrammatical).

The choice of conjunction corresponds to the relative order of events:

- *pɛ:nə* ('otherwise', 'also') is used for consecutive events;
- *o:s* ('also') is used for contemporaneous ones.

(38) *I:t i:ttən. Mɛ:fɐ nɛ:j ɯl-əl, ⁽ⁱ⁾o:s/ ⁽ⁱⁱ⁾pɛ:nə Mi:fɐ jəŋk tu:-l.*
 now evening Masha fire light-PRS.3SG and Misha water bring-PRS.3SG
⁽ⁱ⁾ 'It is evening now. Masha is making a fire, and Misha is bringing water.'
⁽ⁱⁱ⁾ 'It is evening now. Masha makes a fire, and (then) Misha brings water.'

5.2. Phrasal coordination

Phrasal coordination is equally ubiquitous.

Arguments are overtly coordinated:

(39) *Mɛ:fɐ(*-yən) pɛ:nə Mi:fɐ(*-yən) i:rək-kən.* subjects
 Masha-DU and Misha-DU sing-PST.3DU
 'Masha and Misha sang/were singing.'

(40) *Mɛ: sɔ:rt pɛ:nə jaβ qv:təmt-əm.* direct objects
 1SG pike and perch catch/get-PST.1SG
 'I caught a pike and a perch.'

(41) *v:tʲi Mi:fɐ-yɐ pɛ:nə Pɛ:tʲɐ-yɐ βat tʲarəs məj.* indirect objects
 father Misha-LAT and Petja-LAT five thousand give.PST.3SG
 'Father gave Misha and Petja 5000 rubles.'

Adjectives (attributive and predicative) are overtly coordinated:

(42) a. *Qaβ pɛ:nə norəq ju:γ noβ ajɐyʲtə-tɐyə ru:pək.*
 long and straight wood branch find-INF difficult
 'It is difficult to find a long and straight stick.'

- b. *I:ttən li:tot ke:βrəm pɛ:nə apləŋ βv:l.*
 evening meal hot and tasty be.PST.3SG
 ‘The dinner was hot and tasty.’

Adverbs that describe different dimensions of an action are overtly coordinated:

- (43) *Ke:fkə ju:γ-e pasteyə pɛ:nə suj-ləγ qu:ŋət.*
 cat tree-LAT quickly and sound-ABESS climb.PST.3SG
 ‘A cat quickly and quietly climbed up a tree.’

Using clausal coordination instead of phrasal coordination, as in earlier Khanty, sounds cumbersome/redundant and may have a different interpretation.

Conjoining two VP with the same verb is interpreted as referring to two distinct events (one possibly being more important than the other):

- (44) *Mɛ: sv:rt qv:ləmt-əm pɛ:nə jaβ qv:ləmt-əm.*
 1SG pike catch-PST.1SG and perch catch/get-PST.1SG
 ‘I caught a pike and caught a perch.’

Similarly, conjoining two NPs that differ only in the identity of an adjective is interpreted as describing two different referents:

- (45) *Qaβ ju:γ noβ ru:pək ajɛγlə-tɛγə pɛ:nə norəq ju:γ noβ ru:pək*
 long wood branch difficult find-INF and straight wood branch difficult
ajɛγlə-tɛγə.
 find-INF
 ‘It is difficult to find a long stick and it is difficult to find a straight stick.’

5.3. Conjunction reduction or phrasal coordination?

5.3.1 Coordination of adjacent phrases

What syntax does phrasal coordination have?

- Phrasal coordination = coordination of two individual phrasal constituents
 - a dedicated projection, &P (Munn 1987; Kayne 1994; Johannessen 1996)
 - phrasal adjunction (Munn 1992; 1993)
- Phrasal coordination = two full clauses, but certain parts are rendered unpronounced
 - coordination of two full clauses + ellipsis (Gleitman 1965; Wilder 1994; Schwarz 1999).
 - parallel structures: the two clauses undergo Union, whereby the identical constituents (e.g., all other than the conjuncts) are fused and only spelled out once (Goodall 1987).

In today’s Khanty, coordination of individual phrasal constituents is readily attested, while ellipsis is restricted.

Agreement facts:

- (46) a. [S and S] V.PL/DU
 b. [S ~~V.SG~~] and [S V.SG]

Both agreement patterns are available in today’s Khanty:

- (47) a. *Sv:rt, jäβ pɛ:nə v:γərnə pi:ryi ji:ŋk-a ne:βrəm-ət.*
 pike perch and ide back(?) water-LAT jump-PST.3PL
 ‘A pike, a perch, and an ide jumped back into the water.’

- b. *Pu:pi, oβar kærəp ot, βoqu, tʃe:βar pɛ:nə kəmləy mɛ: jɔ:tam*
 bear wolf fox hare and wolverine 1SG with-1SG
janqəʔ.
 go.PRS.3SG.
 ‘The bear, wolf, fox, hare and wolverine go with me.’

Collective/symmetrical predicates:

Coordination with so-called collective/symmetrical predicates cannot result from ellipsis (Curme 1931; Peters 1966; Lakoff & Peters 1966; Wilder 2019):

- (48) a. *John and Mary are alike.*
 b. **John is alike and Mary is/are alike.*

These constructions are available in today’s Khanty:

- (49) a. [*Mɛ:fɛ pɛ:nə Pe:tʃɛ*] *ki:tyə mən-γən.*
 Masha and Petja in_two_halves go-PST.3DU
 ‘Masha and Petja got divorced.’
- b. [*Mɛ:fɛ pɛ:nə Pe:tʃɛ*] *əj qorɛsəp-γən.*
 Masha and Petja one alike-DU
 ‘Masha and Petja are alike.’
- c. *Mɛ: (əj) ɛ:nəγ-ɛ [qu:t mɛ:rən pɛ:nə qu:t βoj] nʲu:tɛ ruβt-əm.*
 1SG one bowl-LAT fish caviar and fish oil together mix-PST.1SG
 ‘I mixed caviar and fish oil together in a bowl.’

Postpositions like *between* work in a similar way:

- (50) *Pu:γəʔ qarə [pɛ:qɔ:t pɛ:nə jaβən ku:təp-nə] βat-ət.*
 village space house and river middle-LOC lie-PRS.3SG
 ‘The yard lies between the house and the river.’

Focus particle *only*:

When a single focus particle *only* applies to coordinated nominals, an underlying structure with ellipsis would be infelicitous.

- (51) a. *Only Masha and Katja saw a fox.*
 b. **Only Masha saw a fox and only Katja saw a fox.*
 c. **Only Masha saw a fox and Katja saw a fox.*

- (52) *Tap Mɛ:fɛ pɛ:nə Kɛ:tʃɛ βaqi βu:j-γən.*
 Only Masha and Katja fox see-PST.3DU
 ‘Only Masha and Katja saw a fox.’

Ellipsis within nominal phrases: categorically disallowed.

Possessive constructions:

Nominal possessors in Khanty elicit no overt marking on the possessor or possessum (except in the context of non-verbal predication; Csepregi 2017).

- (53) [_{DP} *I:βɛn* [_{NP} *ruʈ*]]
 Ivan boat
 ‘Ivan’s boat’

Possessive constructions may be coordinated, (54a). If one of the possessums is omitted, (54b), the only available interpretation is that of joint possession. This speaks against the availability of ellipsis.

- (54) a. [DP *I:βen* [NP *rut*]] *pɛ:nə* [DP *Mɛ:fɛ* [NP *rut*]]
 Ivan boat and Masha boat
 ‘Ivan’s boat and Masha’s boat (=two boats)’
- b. [DP *I:βen* *pɛ:nə* *Mɛ:fɛ* [NP *rut*]]
 Ivan and Masha boat
 ‘Ivan and Masha’s boat’
 (= a single boat that belongs to both; NOT: two boats)’

Nominal modifiers:

In a coordination, one of the nouns cannot be elided in the presence of nominal modifiers:

- (55) *Mi:fɛ* [DP *te:m ne:βi* [NP **(βe:ti)*]] *muβə* [DP *tom pəytə* [NP **(βe:ti)*]]
 Misha this white deer or that black deer
βeł-təy.
 kill-PST.3SG<SG
 ‘Misha killed this black deer or that white one.’

To recap:

- Phrasal coordination in Khanty overwhelmingly results from coordination of smaller phrasal constituents (PPs, DPs, and APs), which does not involve ellipsis.
- This aligns well with the fact that ellipsis within DPs and PPs is banned.

5.3.2 Other kinds of coordination

Gapping

- a kind of ellipsis in coordinated clauses that targets the iterated verb (Ross 1968);
- remaining lexical material is contrasted with its correlates in the preceding clause;
- one of the remaining constituents is typically the subject, while the other one may be an object or an adjunct (Johnson 1996; Winkler 2005).

Forward gapping: the ‘gapped’ verb is found in the second conjunct.

- (56) *John likes ice-cream, and Mary ~~likes~~ chocolate cake.*

In Khanty, felicity of **forward gapping** varies by speaker age. Older speakers do not accept forward gapping, younger speakers do (though they prefer the non-gapped counterpart).

- (57) % *Mi:fɛ sv:rt qv:təl, o:s Pe:tʃv – jaβ.*
 Misha pike catch.PST.3SG and Petja perch
 ‘Misha caught a pike, and Petja [caught] a perch.’
 ‘Misha caught a pike, and Petja [is] a perch.’
- (58) % *Sɛ:fɛ kənəkkə sɛ:p ɯ:ti ne:βrəm-əy, o:s Pe:tʃv – ru:pəkkə.*
 Sasha easily creak across jump-PST.3SG and Petja with_effort
 ‘Sasha easily jumped over the creak and Petja did so with effort.’

Many verb-final languages also allow for **backward gapping**, where the ellipsis site is in the first clause. In Khanty, backward gapping is marginally possible, but the non-gapped counterpart is preferred.

- (59) ? *Mi:fɛ sv:rt, Sɛ:fɛ jaβ qv:təl.*
 Misha pike, Sasha perch catch.PST.3SG
 ‘Misha caught a pike, and Sasha caught a perch.’

Stripping

- all constituents in the second clause are deleted, under identity with those in the first clause, except for one, which may be accompanied by an adverb (*perhaps, as well, too*) or negation (Ross 1969; Hankamer & Sag 1976):

- (60) a. *John left yesterday, and Mary too.*
 b. *John drank whisky last night, or maybe tequila.*

Stripping is not felicitous in Khanty.

- (61) a. ??? *Mi:fɛ sv:rt qv:təl, Sɛ:fɛ əʃə.*
 Misha pike catch.PST.3SG, Sasha too
 ‘Misha caught a pike, Sasha too.’
- b. **Mi:fɛ sv:rt qv:təl pɛ:nə jaβ əʃə.*
 Misha pike catch.PST.3SG and perch too
 ‘Misha caught a pike and a perch, too.’

Overall conclusions:

- The oldest attested varieties of Khanty show no evidence of overt coordinators or of phrasal coordination. Clauses were juxtaposed instead of coordinated.
- Coordination of smaller constituents was achieved either via coordinated clauses (without conjunction reduction) or co-compounding.
- Overt coordinators emerged in the 20th century, first in larger projections, then in smaller ones.
- Today’s Khanty uses overt coordinators with all constituent sizes.
- Agreement facts, collective predicates, restrictions on ellipsis ⇒ evidence against widespread conjunction reduction and in favor of coordination of individual phrases as underlying phrasal coordination.

➤ **Emergence of phrasal coordination follows the emergence of overt coordinators**

6. Analysis

The attested data suggests an intrinsic correlation between overt conjunctions and phrasal coordination. What is the reason for the correlation?

Traditional Khanty: plenty of repeated material. This is a seeming violation of the Principle of Economy (Haiman 1983; 1985; Chomsky 1995; Hawkins 2004), unless repetitiveness pays off elsewhere.

Claim: lack of asyndetic phrasal coordination facilitates processing.

In the language type represented by oldest attested Khanty, phrasal coordination would result in shorter derivations but much more costly processing, with garden-path situations requiring (rounds of) backtracking.

General syntactic properties of Khanty:

- SOV;
- subject and object pro-drop;
- no NOM/ACC marking on subjects and objects
- no possessor/possesum morphology on nouns

⇒ an $DP_1 DP_2 V$ string is multiply structurally ambiguous, until the verb and its suffixes are processed.

(62) $DP_1 DP_2 V+AGR$:

- (i) DP_1 = subject, DP_2 = object;
- (ii) DP_1 = possessor, DP_2 = subject;
- (iii) DP_1 = possessor, DP_2 = object (subject = *pro*).

If traditional Khanty had asyndetic phrasal coordination, then further possibilities would arise:

- (iv) DP_1 = subject₁, DP_2 = subject₂;
- (v) DP_1 = object₁, DP_2 = object₂.

In the case of $DP_1 DP_2 DP_3 V+AGR$, possibilities multiply, resulting in garden-path situations: initial misinterpretations necessitating the backtracking and reanalysis of the string.

(63) $DP_1 DP_2 DP_3 V+AGR$:

- (i) [DP_1 = subject₁, DP_2 = subject₂, DP_3 = subject₃]
- (ii) *pro* [DP_1 = object₁, DP_2 = object₂, DP_3 = object₃]
- (iii) [DP_1 = subject₁, DP_2 = subject₂], [DP_3 = object]
- (iv) [DP_1 = subject], [DP_2 = object₁, DP_3 = object₂]
- (v) [DP_1 = possessor, DP_2 = subject₁, DP_3 = subject₂]
- (vi) [DP_1 = possessor, DP_2 = subject], [DP_3 = object]
- (vii) [DP_1 = subject], [DP_2 = possessor, DP_3 = object]
- (viii) *pro* [DP_1 = possessor, DP_2 = object₁, DP_3 = object₂]
- (ix) [DP_1 = possessor, DP_2 = subject₁, DP_3 = subject₂]
- (x) *pro* [DP_1 = possessor₁, DP_2 = possessor₂, DP_3 = object]

⇒ In oldest attested Khanty, asyndetic phrasal coordination must have been blocked for the sake of **processing efficiency**.

This is consistent with the known principles of processing:

(64) *Maximize On-line Processing* (Hawkins 2004; paraphrased)

The human processor prefers to maximize the set of properties (e.g., grammatical functions, theta-roles) that can be assigned to each word in real time, as the processing

of an utterance progresses. Orders with all properties assigned upon encounter are preferred to orders with some properties misassigned or unassigned.

(65) *Principle of Economy* (building on Haiman 1983; 1985; Chomsky 1995; Hawkins 2004)
A structure with higher processing cost is avoided in favor of a structure with lower processing cost.

⇒ Redundancy is preferred over linearly shorter and structurally simpler asyndetic phrasal coordination, which would lead to pervasive ambiguity.

Supporting evidence from processing:

- While ambiguity-avoidance as a general processing factor has been hard to establish, ambiguity with respect to argument structure seems to be consistently avoided in natural language (Wasow 2015)
- Not all redundancy is bad: structural parallelism has been shown to facilitate both comprehension and production (Frazier et al. 2000). Lexical parallelisms must have the same effect.

Oldest attested Khanty: lack of phrasal coordination reduces the chance of garden-path situations.

20th-century Khanty: emergence of overt conjunctions; a conjunction linking two DPs indicates that the DPs share the same grammatical function and thereby facilitates processing. As a result, phrasal coordination became possible.

References:

- Beavers, John & Ivan A. Sag. 2004. Coordinate ellipsis and apparent non-constituent coordination. In *The Proceedings of the 11th International Conference on Head-Driven Phrase Structure Grammar*, 48–69.
- Biberauer, Theresa 2018. Probing the nature of the final-over-final condition: The perspective from adpositions. In Laura R. Bailey & Michelle Sheehan (eds.), *Order and structure in syntax I: Word order and syntactic structure*, 177–216. Berlin: Language Science Press.
- Bogoras, Waldemar 1922. Chukchee. In *Handbook of American Indian Languages*, Part 2. *Bureau of American Ethnology Bulletin* 40: 631–903.
- Chafe, Wallace 1985. Linguistic differences produced by differences between speaking and writing. In David R. Olson, Nancy Torrance, and Angela Hildyard (eds.) *Literacy, Language, and Learning*, 105–123. Cambridge: Cambridge University Press.
- Chaves, Rui P. 2006. Coordination of unlikes without unlike categories. In *Proceedings of the 13th International Conference on Head-driven Phrase Structure Grammar*, 102–122. CSLI Publications Stanford, CA.
- Chomsky, Noam. 1957. *Syntactic structures*. the Hague: Mouton.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge MA: MIT Press.
- Cole, Peter 1982. *Imbabura Quechua*. *Lingua Descriptive Studies*. Amsterdam: North Holland.
- Craig, Colette Grinevald 1977. *The Structure of Jacalteco*. Austin: University of Texas Press.
- Curme, G. 1931. *Syntax*. Boston, Mass: Heath.
- Csepregi, Márta 1998. Szurguti osztják chrestomatia. Szeged: JATE.
- Csepregi, Márta 2002. Texte in chantischer Sprache vom Fluss Agan. In: E. Helimski – A. Widmer (eds.): *Sei gegrüsst! Beiträge zur Finnougristik zu Ehren von Gert Sauer dargebracht zu seinem siebzigsten Geburtstag. Veröffentlichungen der Societas Uralo-Altaica* 57, 85–93. Wiesbaden: Harrassowitz Verlag.
- DEWOS = Steinitz, Wolfgang (ed.) 1966–1993.
- Drellishak, Scott 2005. Coordination and processing. *University of Washington Working Papers in Linguistics* 24.
- É. Kiss Katalin, Orsolya Tánzos 2018. From possessor agreement to object marking in the evolution of the Udmurt *-jez* suffix: A grammaticalization approach to morpheme syncretism. *Language* 94 :733-757.
- Frazier, Lynn, Alan Munn, Charles Clifton, Jr. 2000. Processing coordinate structures. *Journal of Psycholinguistic Research* 29(4): 343–370.
- Gleitman, Lila R. 1965. Coordinating conjunctions in English. *Language*. 41(2). 260–293.
- Goodall, G. 1987. *Parallel Structures in Syntax*. Cambridge: Cambridge University Press.
- Haiman, John. 1983. Iconic and Economic Motivation. *Language* 59(4). 781.
- Haiman, John. 1985. *Natural syntax. Iconicity and erosion* (Cambridge Studies in Linguistics). Vol. 44.
- Hankamer, Jorge & Ivan Sag. 1976. Deep and surface anaphora. *Linguistic inquiry* 7(3). 391–428.
- Hawkins, John A. 2004. *Efficiency and complexity in grammars*. Oxford: Oxford University Press.
- Johannessen, J.B. 1996. Partial agreement and coordination. *Linguistic Inquiry* 27. 661–676.
- Johnson, Kyle. 1996. In search of the middle field. University of Massachusetts, Amherst, ms. http://people.umass.edu/kbj/homepage/index_johnson.htm.
- Kálmán, Béla 1976. *Chrestomathia Vogulica*. Budapest: Tankönyvkiadó.
- Kayne, Richard S. 1994. *The antisymmetry of syntax*. Vol. 25. Cambridge MA: MIT Press.
- Lakoff, George & Stanley Peters. 1966. Phrasal conjunction and symmetric predicates.

- Levine, Robert. 2011. Linearization and its discontents. In *The Proceedings of the 18th International Conference on Head-Driven Phrase Structure Grammar*, 126–146. Citeseer.
- Lewy, Ernst 1911. *Zur finno-ugrischen Wort- und Satzverbindung*. Vandenhoeck, Göttingen.
- Maslova, Elena. 2003. *A grammar of Kolyma Yukaghir*. Vol. 27. Walter de Gruyter.
- Mikola, Tibor 1973–74. Ugor ikerszavak. *Néprajz és Nyelvtudomány* 17-18: 54–62.
- Mikola, Tibor 1985. Ikerszők és parallelizmusok az obi-ugor nyelvekben. *Néprajz és Nyelvtudomány* 29-30: 143–149.
- Mithun, Marianne 1988. The grammaticalization of coordination. In: John Haiman and Sandra A. Thompson (eds.) *Clause Combining in Grammar and Discourse*, 331–359. Amsterdam: John Benjamins.
- Munn, Alan Boag. 1987. Coordinate structure and X-bar theory. *McGill Working Papers in Linguistics* 4(1). 121–140.
- Munn, Alan Boag. 1993. *Topics in the syntax and semantics of coordinate structures*. University of Maryland at College Park PhD Thesis.
- Munn, Alan. 1992. A null operator analysis of ATB gaps. *The Linguistic Review*. Walter de Gruyter, Berlin/New York 9(1). 1–26.
- Nikolaeva, Irina 1999. *Ostyak*. München: Lincom Europa.
- Nikolaeva, Irina 2003. Possessive affixes in the pragmatic structuring of the utterance: evidence from Uralic. In: Pirkko Suihkonen, and Bernard Comrie (eds.) *International symposium on deictic systems and quantification in languages spoken in Europe and North and Central Asia. Collection of papers*, 130–145. Izhevsk and Leipzig: Udmurt State University and Max Planck Institute for Evolutionary Anthropology.
- Ohuri, Toshio 2004. Coordination in Mentalese. In: Martin Haspelmath (ed.) *Coordinating Constructions*, 41–66. Amsterdam/Philadelphia: John Benjamins.
- OUDB EM Obi-Ugric Database Eastern Mansi Corpus http://www.babel.gwi.uni-muenchen.de/index.php?abfrage=EM_corpus&subnavi=corpus_pub
- Peters, Stanley. 1966. *Coordinate Conjunction in English*. Massachusetts Institute of Technology Doctoral dissertation.
- Ravila, Paavo 1986. Über die Verwendung der Numeruszeichen in den uralischen Sprachen. *Finnisch-Ugrische Forschungen* 27: 1-136.
- Rédei, Károly 1968. *Nord-ostjakische Texte (Kazym-Dialekt) mit Skizze der Grammatik*. Göttingen: Vandenhoeck & Ruprecht.
- Ross, John Robert. 1968. *Constraints on Variables in Syntax*. Massachusetts Institute of Technology Doctoral dissertation.
- Ross, John Robert. 1969. Guess who? In *Proceedings of the fifth regional meeting of the Chicago Linguistic Society*. Chicago: University of Chicago Press.
- Schwarz, B. 1999. On the syntax of either... or. *Natural Language and Linguistic Theory* 17(2). 339–370.
- Sipos, Mária 2015. Időhatározói összetett mondatok serkáli hanti szövegekben *Nyelvtudományi Közlemények* 111: 131–149.
- Sosa, Sachiko 2017. Functions of morphosyntactic alternations, and information flow in Surgut Khanty discourse. PhD dissertation, University of Helsinki.
- Stassen, Leon 2003 Noun phrase conjunction: The coordinative and the comitative strategy, In: Frans Plank (ed.) *Noun Phrase Structure in the Languages of Europe*, 761–819. Berlin: Mouton de Gruyter.
- Steinitz, Wolfgang (ed.) 1966–1993. *Dialektologisches und etymologisches Wörterbuch der ostjakischen Sprache*. Berlin: Akademie-Verlag.
- Steinitz, Wolfgang 1941. *Ostjakische Volksdichtung und Erzählungen aus zwei Dialekten II*. Stockholm.

- Suárez, Jorge A. 1983. *The Mesoamerican Indian Languages*. Cambridge Language Surveys. Cambridge: Cambridge University Press.
- Szabolcsi, Anna 1990. Osztják parallelizmusok és mellérendelő összetételek. *Nyelvtudományi Közlemények* 91: 221–225.
- Terjoshkin, N. I. 1959. *Bukvar*. Leningrad: Gosudarstvennoje Uchebno-Pedagogicheskoye Izdatelstvo.
- Terrill, Angela 2004. Coordination in Lavukaleve. In: Martin Haspelmath (ed.) *Coordinating Constructions*, 427–444. Amsterdam/Philadelphia: John Benjamins.
- Vértes, Edit 2001. *H. Paasonens surgutostjakische Textsammlungen am Jugan*. Neu transkribiert, bearbeitet, übersetzt und mit Kommentaren versehen von Edith Vértes. *Mémoires de la Société Finno-Ougrienne* 240.
- Wasow, Thomas. 2015. Ambiguity Avoidance is Overrated. In Susanne Winkler (ed.), *Ambiguity*. Berlin, München, Boston: De Gruyter.
- Wälchli, Bernhard 2005. *Co-Compounds and Natural Coordination*. Oxford: Oxford University Press.
- Welmers, William E. 1973. *African Language Structures*. Berkeley: University of California Press.
- Wilder, Chris. 1994. Coordination, ATB and ellipsis. In C. Jan-Wouter Zwart (ed.), *Minimalism and Kayne's Antisymmetry Hypothesis* (Groningen Arbeiten Zur Germanistischen Linguistik 37), 291–331.
- Wilder, Christopher 2018. Conjunction Reduction and Right-Node Raising. In: Jeroen van Craenenbroeck and Tanja Temmerman (eds.) *The Oxford Handbook of Ellipsis*. DOI: 10.1093/oxfordhb/9780198712398.013.2
- Winkler, Susanne. 2005. *Ellipsis and Focus in Generative Grammar*. Berlin ; New York: Mouton de Gruyter.
- Worth, Dean Stoddard 1961. *Kamchadal Texts Collected by W. Jochelson*. The Hague: Mouton.
- Zwart, Jan Wouter. 2005. Some notes on coordination in head-final languages. *The Linguistics in The Netherlands* 232–241.