East Caucasian coordination

Pavel Rudnev, HSE (prudnev@hse.ru)

Andic Seminar | 26-10-2018

Background: Research programme on logical constants

Tradition

- logical tradition: conjunction and disjunction treated on a par
- ditto for the syntax of conjunction and disjunction:
  - coordination treated uniformly symmetrically [X and/or Y] or uniformly asymmetrically [X [and/or Y]]
  - little attention to internal structure/morphosyntactic decomposition

Recent developments

- conjunction is more basic than disjunction (Haspelmath 2004; Szabolcsi 2015; Mitrović 2014 a.o.)
- all action is performed by **quantifier particles** (Szabolcsi 2015), a.k.a. **superparticles** (Mitrović)

Superparticles

μ/**MO**

- alternative activation
- obligatory (possibly recursive) exhaustification
  - $[\![\mu]\!] = \lambda p[\mathcal{X}^R(p)] \vdash \lambda p[p \wedge \neg\mathcal{X}(p)]$
  - $\mathcal{X}^R$ is an exhaustification operator (cf. Chierchia 2013)

(1) $$\mathcal{X}(p) = \begin{cases} \text{polarity reading} & \text{if under } \neg \\ \text{FC reading} & \text{if under } \diamond \\ \text{additive reading} & \text{if } \mathcal{X} \text{ is iterative} \\ \bot & \text{otherwise} \end{cases}$$

κ/KA

- non-tautological disjunction addition
- $[\![\kappa]\!] = \lambda p[p \vee \neg p]$
- also polyfunctional:
  - disjunction
  - interrogativity
  - existential quantification

Why these particles?

- crosslinguistic argument
  - Avar forms the core of the argument for both the structure of conjunction (Mitrović & Sauerland 2014)
  - and the analysis of exclusive disjunction (Mitrović 2014)

Conjunctive coordination in the Caucasus (van den Berg 2004: §3)

(2) Dargi

a. **conjunction**

dudeš.li-ra neš.li-ra emħe b-abg-ili sa⟨b⟩i
father(ERG)-and mother(ERG)-and donkey(ABS) N-harness-GER be:HPL

'Father and mother harnessed the donkey.'

b. **additivity**

qum⟨ma⟩rt-id b-arx yağlaw-ra kas-es
forget:PROH-FUT.2 N-with frying.pan(ABS)-and take-INF

'Don't forget to take the frying pan with you as well.'

(3) Bagvalal

a. **conjunction**

žē-b-o ek'^{w}a mažit-la mimaro-la
do-N-CVB be mosque(ABS)-and minaret(ABS)-and

'A mosque and minaret were built.'

b. **additivity**

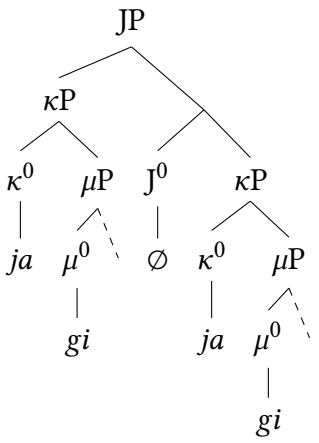
sangut-abi partal-la b-uk'a č'ihi
chest-PL(ABS) things(ABS)-and N-be on.top

'There were chests and (other) things as well on top (of the truck).'

Mitrović (2014) and his argument from Avar

Mitrović (2014) uses Avar data to support the so-called *Junction* analysis of coordination (den Dikken 2006), whereby coordination is effected by an invisible J-head. Mitrović (2014) modifies the Junction analysis as follows:

(4)



(5) a. **polysyndetic coordination**
keto gi h^{w}e gi
cat.ABS μ dog.ABS μ
'cat and dog'

b. wac gi jac gi emen gi ebel gi ∅-ana xuri-r-e
brother μ sister μ father μ mother μ PL-go.PST field.in-PL-to
'Brother and sister and father and mother went to the field.'

In both of the examples above, every conjunct carries a *-gi* morpheme, and the resulting consituent is interpreted as a conjunction, which can be seen from the plural agreement marking on the verb and the directional expression *xurire* 'into the field' in (5b) while every conjunct is inherently specified as SG.

Conjunction can also be effected via the *wa*-coordinator, a loanword from the Turkic languages, which is positioned in between the conjuncts, as shown in (6) below.

(6) keto wa h^{w}e
cat.ABS and dog.ABS
'cat and dog'

(7) **problematic for symmetrical accounts**:

keto gi wa h^{w}e gi
cat.ABS μ and dog.ABS μ

'cat and dog'

(8) **additivity**

dida gi heb łala
1SG.LOC μ this.ABS know.PRS

'Even/also I know this.'

-nigi marking: two empirical claims

- complex disjunction markers containing an additive particle are obligatorily strong/exclusive (Mitrović 2014)
- *-nigi*-marked pronouns are *negative* (Alekseev & Ataev 1997 a.o.)

Aims for today

- show both claims to be false
- outline a methodological flaw in determining particle status
- sketch a path towards dispelling the confusion

Additivity, exhaustification and XOR

- Mitrović (2014) proposes the following structure for exclusive disjunction, where J is Den Dikken's (2006) **Junction** head:

(9) $\underbrace{\Big[_{\text{JP}}\,[_{\kappa\text{P}}\,\kappa^0\,\overbrace{[_{\mu\text{P}}\;\;\mu^0\;\;\text{XP}\;]}^{\textit{NPI/additive}}]\Big[\text{J}^0\,[_{\kappa\text{P}}\,\kappa^0\,\overbrace{[_{\mu\text{P}}\;\;\mu^0\;\;\text{YP}\;]}^{\textit{NPI/additive}}]\Big]\Big]}_{\textit{coordination}}$

- how does (9) give rise to exclusive disjunction?

Conjunction and disjunction in Avar

Avar: key facts

- Northeast Caucasian
- over 700,000 speakers
- morphologically ergative, largely agglutinative
- extensive *pro*-drop
- **extensive use of multifunctional particles** (cf. Forker 2013)

Avar conjunction

XP=gi YP=gi (Uslar 1889: p. 241)

(10) wac=gi, jac=gi, emen=gi, ebel=gi ana xurire
brother=GI sister=GI father=GI mother=GI go.PST field
'Brother and sister and father and mother went to the field.'

Avar disjunction strategies (Uslar 1889: p. 241)

(11) ja wacas ja jacał hab-ila heb
κ brother.ERG κ sister.ERG do.N-FUT that

(12) ja=gi wacas ja=gi jacał hab-ila heb
κ=μ brother.ERG κ=μ sister.ERG do.N-FUT that
'Either brother or sister will do it.'

(13) wacas=nigi jacał=nigi hab-ila heb
brother.ERG=NIGI sister.ERG=NIGI do.N-FUT that
'Either brother or sister will do it.'

jagi disjunction is exclusive

The interpretational differences between the three disjunction types are best seen in their interaction with sentential negation.

(14) ja=gi wacas ja=gi jacał habila-ro heb
κ=μ brother.ERG κ=μ sister.ERG will.do-NEG that.ABS
'Either brother won't do it or sister won't do it.'

- predicted by Mitrović (2014)

-nigi disjunction isn't exclusive

Both the *=ni=gi* and the *ja* strategies display proper De Morganic readings when embedded under negation, being obligatorily interpreted as a conjunction of negations (15).

(15) a. ja wacas ja jacał habila-ro heb
κ brother.ERG κ sister.ERG will.do-NEG that.ABS

b. wacas=ni=gi jacał=ni=gi habila-ro heb
brother.ERG=?=μ sister.ERG=?=μ will.do-NEG that.ABS
'Neither brother nor sister will do it.'

- **not predicted by Mitrović (2014)**

Is *ni* actually a κ-particle?

- no robust diagnostics of κ-hood
- rule of thumb: wherever there are alternatives, κs must be at play
- if that's right, then *ni* is definitely a κ-particle

Yes

- then Mitrović is wrong:
  - *-nigi* disjunction is clearly discontinuous
  - *-nigi* disjunction contains the additive particle *=gi*

No

(16) $\underbrace{\Big[_{\text{JP}}\,\big[_{\kappa\text{P}}\,\kappa^0\,\overbrace{\big[_{\mu\text{P}}\;\;\mu^0\;\;\text{XP}\;\big]}^{\textit{NPI/additive}}\big]\Big[\text{J}^0\,\big[_{\kappa\text{P}}\,\kappa^0\,\overbrace{\big[_{\mu\text{P}}\;\;\mu^0\;\;\text{YP}\;\big]}^{\textit{NPI/additive}}\big]\Big]\Big]}_{\textit{coordination}}$

- then something else is responsible for the disjunction-like reading triggered by *-nigi*
- still problematic for Mitrović (2014), which undergenerates

-nigi marking: other uses

- polarity marking
- concessives/unconditionals
- free choice

Polarity

(17) ask'osa 'ebede **šiw=nigi** w–uk'-in-č'o
nearby who=NIGI M–be-MSD-NEG
'There was no one around.'

- **Chierchia**: NPI effects obtain from $\mathscr{X}(p)$ under $\neg$

Concessives/unconditionals

- morphosyntactically decomposable into *also/even* + *if* (Haspelmath & König 1998):

(18) kije hej a=nigi dica kida=nigi hej tola-ro.
where she go-COND.μ I.ERG ever she.ABS leave.FUT-NEG
'Wherever she goes, I will never leave her.'

- unconditionals involve conjunction of alternatives
- they exhaust the relevant alternatives
- alternatives are mutually exclusive

FCIs (Uslar 1889:109)

(19) łie=nigi ł'e
who.DAT=NIGI give.IMP
'Give it to anyone.'

(20) kinaw=nigi čijasda božula mun
which.M=NIGI man.LOC believe.PRS 2SG.ABS
'You believe whichever man.'

- **Chierchia**: FC effects obtain from $\mathscr{X}(p)$ under possibility modals

Summary

- *-nigi* disjunction seems problematic for exhaustification-based analysis of exclusive disjunction (Mitrović 2014)
- unless *=ni* isn't a κ particle but is e.g. a topic marker
- parallels with unconditionals should be explored further

References

Alekseev, Mikhail E. & Boris M. Ataev. 1997. *Avarskiĭ yazȳk* [The Avar language]. Moscow: Academia.

Chierchia, Gennaro. 2013. *Logic in grammar: Polarity, free choice, and intervention.* Oxford University Press. doi:10.1093/acprof:oso/9780199697977.001.0001.

den Dikken, Marcel. 2006. Either-float and the syntax of co-*or*-dination. *Natural Language*

and Linguistic Theory 24(3). Springer Science + Business Media. 689–749. doi:10.1007/s11049-005-2503-0.

Forker, Diana. 2013. Conjunction particles in Nakh-Daghestanian — topic, focus or something else? ms.

Haspelmath, Martin. 2004. Coordinating constructions: An overview. In Martin Haspelmath (ed.), *Coordinating constructions*, 3–39. John Benjamins.

Haspelmath, Martin & Ekkehard König. 1998. Concessive conditional constructions in the languages of europe.

Mitrović, Moreno. 2014. Morphosyntactic atoms of propositional logic. University of Cambridge PhD thesis.

Mitrović, Moreno & Uli Sauerland. 2014. Decomposing coordination. (Ed.) Jyoti Iyer & Leland Kusmer. *Proceedings of NELS* 44(2). 39–52.

Szabolcsi, Anna. 2015. What do quantifier particles do? *Linguistics and Philosophy* 38(2). 159–204. https://doi.org/10.1007/s10988-015-9166-z.

Uslar, Petr K. 1889. *Avarskiĭ yazȳk [The Avar language]*. Tiflis: Izdanie Upravleniya Kavkazskago Uchebnago Okruga [The Caucasian Academic District Office Printing House].

van den Berg, Helma. 2004. Coordinating constructions in Daghestanian languages. In Martin Haspelmath (ed.), *Coordinating constructions*, 197–226. John Benjamins.