

The prosody of inverse attraction constructions and externally-headed relative clauses vs. correlatives in Beserman Udmurt and Moksha Mordvin

Inverse attraction (hereafter IA) is a syntactic effect sometimes observed in relative clauses. The head of an IA construction precedes the relative clause but receives its case marking in correspondence with the relativized position, cf. (1) from Beserman Udmurt. IA is predominantly found in ancient Indo-European languages (Touratier 1980, Bianchi 1999), but also in a few modern languages, including Beserman Udmurt and Moksha Mordvin (Uralic).

- (1) BESERMAN UDMURT
pânâ-lâš' kud-iz-lâš' mon kâška-š'ko kâl'l'-e š'âres vâl-ân
 dog-GEN2 which-POSS.3SG-GEN2 I fear-PRS[1SG] lie-PRS.3SG road on-IN
 'The dog I fear is lying on the road'.

One of the key questions concerning IA is the syntactic position of the head, which can be analyzed as either external or internal to the relative clause. One possible analysis of IA suggests that the head of the relative clause with IA is external and the construction provides a powerful argument for the raising analysis (Bianchi 1999, Cinque 2015, Deal 2016), i.e. the head of the relative clause is first merged internal to the relative clause, acquires there its case and then moves to a position in the main clause. The external position of the head is though not obvious: IA is analyzed as a type of a correlative construction with the reversed order of the relative pronoun and the head in (Lehmann 1984: 185, Bhatt 2005, among others). Moksha Mordvin and Beserman Udmurt have both 'regular' externally-headed relatives (2) and internally-headed correlatives (3). Thus, the internal head analysis gets particularly plausible.

- (2) BESERMAN UDMURT
pânâ kud-iz-lâš' mon kâška-š'ko kâl'l'-e š'âres vâl-ân
 dog which-POSS.3SG-GEN2 I fear-PRS[1SG] lie-PRS.3SG road on-IN
 'The dog I fear is lying on the road.'
- (3) BESERMAN UDMURT
kud-iz-lâš' pânâ-lâš' mon kâška-š'ko kâl'l'-e š'âres vâl-ân
 which-POSS.3SG-GEN2 dog-GEN2 I fear-PRS[1SG] lie-PRS.3SG road on-IN
 'The dog I fear is lying on the road.'

The syntactic diagnostics distinguishing the external-head and the internal-head analyses are discussed by Kholodilova & Privizentseva (2015) and shown to not give a clear-cut result. Here, drawing inspiration from Lehmann (1984: 351), we suggest that intonational data can also shed some light on the syntactic position of the head in IA constructions. The crucial question here is whether IA constructions pattern prosodically together with correlatives or externally-headed relative clauses. To address this question, we conducted a reading experiment with native speakers of Beserman Udmurt and Moksha Mordvin. The data set consisted of 5 sets of texts, each of them comprising 3 minimally different sentences with externally-headed, correlative, and IA constructions. Each experimental sentence was embedded in an appropriate context of two filler sentences. During the experiment, 6 native speakers of Beserman Udmurt and 5 speakers of Moksha Mordvin were asked to read aloud the resultant 15 texts.

F₀ measurements for relative clauses were extracted using Praat (Boersma & Weenink 2016) and divided into groups according to the intonation contour; see an example of the measurements in a sentence in the Appendix. The data suggests a difference between correlatives and other relative construction types in their preferred intonational pattern at the right edge of the clause. The final intonation contour in correlative constructions strongly tends to have a rising-falling accent as

opposed to externally-headed and IA constructions. Statistically significant differences were found between correlative and IA constructions in both Beserman Udmurt and Moksha (χ^2 , $p = 0.04$ and 0.02 respectively). Externally-headed relatives did not show a statistically significant difference from either correlatives or IA constructions. Our findings contradict the internal head analysis and suggest that IA constructions and externally-headed relatives pattern together with respect to intonation.

We might further surmise that the prosodic distinction between correlatives vs. other relative constructions could be regarded as a difference between intonational (i) vs. phonological phrases (φ) respectively. All types of relative clauses, as XP's, are related to at least one φ (Truckenbrodt 1999), whereas only those φ 's that correspond to a string of XP's "in some way external to the root sentence they are associated with" (Nespor & Vogel 2007: 188) can build i 's outside the matrix clause. Such an external position is exactly what syntactic literature suggests for correlatives (Lipták 2009: 7). Still, further phonological evidence is needed to confirm these conjectures.

References

- Bhatt, Rajesh. 2005. *In search of Case Attraction*. Paper presented at LOT Summer School, Leiden.
- Bianchi, Valentina. 1999. *Consequences of Antisymmetry: Headed Relative Clauses*. Berlin: Mouton de Gruyter.
- Boersma, Paul & David Weenink. 2016. *Praat: doing phonetics by computer* [Computer program]. Version 6.0.10, retrieved from <http://www.praat.org/>.
- Cinque, Guglielmo. 2015. Three phenomena discriminating between "raising" and "matching" relative clauses. *Semantics- Syntax Interface* 2 (1), 1–27.
- Deal, Amy Rose. 2016. Cyclicity and connectivity in Nez Perce relative clauses. *Linguistic Inquiry* 47 (3), 427–470.
- Kholodilova, Maria & Maria Privizentseva. 2015. Inverse attraction in Finno-Ugric languages. Talk at 'Insufficient strength to defend its case': Case attraction and related phenomena, Wrocław, 18–19.09.15.
- Lehmann, Christian. 1984. *Der Relativsatz: Typologie seiner Strukturen; Theorie seiner Funktionen; Kompendium seiner Grammatik*. Tübingen: Gunter Narr Verlag.
- Lipták, Anikó. 2009. The landscape of correlatives: An empirical and analytical survey. *Correlatives Cross-Linguistically*, ed. by Anikó Lipták. Amsterdam: John Benjamins.
- Nespor, Marina & Irene Vogel. 2007. *Prosodic Phonology: With a New Foreword*. (Studies in Generative Grammar 28.) Berlin: Mouton de Gruyter.
- Touratier, Christian. 1980. *La relative. Essai de théorie syntaxique (à partir de faits latins, français, allemands, anglais, grecs, hébreux, etc.)*. Paris: Klincksieck.
- Truckenbrodt, Hubert. 1999. On the relation between syntactic phrases and phonological phrases. *Linguistic Inquiry* 30 (2), 219–255.

Appendix

Primary measurements conducted: (A) pitch range of the sentence, (B) pitch rises and falls on the last word of the relative clause.

