Collocation of prefixes and prepositional phrases in Russian verbs of motion

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Quantitative corpus analysis is an important way of discovering patterns, evaluating theoretical generalizations and predictions over various linguistic phenomena. In this article I report on a corpus study of patterns of collocation between prefixes and prepositions expressing GOAL motion events.

Motion events in Russian are encoded by a series of prefixed motion verbs and prepositional phrases expressing a variety of spatial configurations and perspectives. In determinate motion verb stems, prefixes significantly contribute to the spatial set-up of a motion event (Titelbaum, 1990) by accentuating its SOURCE, PATH, or GOAL; prepositional phrases also express SOURCE, PATH, or GOAL to facilitate a more detailed spatial configuration (Ferm, 1990; Shull, 2003).

- (1) Саш-а про-бежа-л мимо школ-ы. Sasha-NOM along-runD-PAST.MASC.SG beside school-GEN.SG. 'Sasha ran past_{Pref} the school.' (про-PATH_{Pref} + мимо PATH_{Prep})
- (2) Саш-а в-бежал в школ-у.
 Sasha-NOM in-runD-PAST.MASC.SG in school-ACC.SG.
 'Sasha ran into_{Pref} the school (building).' (в-GOAL_{Pref} + в GOAL_{Prep})
- (3) Саш-а от-бежал в тень. Sasha-NOM away-runD-PAST.MASC.SG in shade-ACC.SG. 'Sasha ran away $_{Pref}$ into $_{Prep}$ the shade.' (от-SOURCE $_{Pref}$ + в GOAL $_{Prep}$)

Russian motion verb stems can combine with five different prefixes denoting GOAL; prepositional phrases expressing GOAL also show variability. Any GOAL prefix can seemingly appear in the sentence with any GOAL preposition. Are there any restrictions on what prefix can coordinate with what preposition?

Many GOAL prefixes have cognate prepositions, which share similarities in meaning (Gribanova, 2008; Tabakowska, 2003). The collocation patterns between prefixes and prepositions have been described either as **doubling of cognates** (e.g., (1), (2)), where cognate prefixes and prepositions collocate in the expression of an event (Zolotova, 1973), or a more complex **multiple valency** (e.g., (3)), where prefix-preposition collocation patterns are not limited to cognate pairs (Ferm, 1990; Shull, 2003). To evaluate these models, I quantify the patterns of prefix-preposition collocation on the basis of a 3,500-sentence corpus study of naturally occurring discourse from the Russian National Corpus for GOAL-oriented motion events. I address two questions:

- 1. Among five GOAL prefixes, are patterns of prefix-preposition collocation generally random?
- 2. For prefixes and prepositions denoting GOAL, is there any evidence for the doubling of cognates?

Employing X²-test and Cramér's V, I find that the pattern of prefix-preposition distribution is not random: the association of distribution between the two classes is very strong. Furthermore, while it is not the case that prefixes collocate exclusively with cognate prepositions, Pearson's residuals show that the strongest preference of collocation is characteristic of cognate pairs. This suggests that doubling of cognates reflects a strong tendency in the prefix-preposition collocation, but is does not bar the coöccurrence of non-cognate prefix-preposition pairs (multiple valency). In effect, the two models capture important patterns of prefix-preposition collocations: prefixes can generally collocate with a wide variety of prepositions but show strongest preference for cognate prepositions.

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