

When More is Less: Greater Syntactic Integration Decreases Discourse-Level Prominence of Clauses in Non-Literary Prose and Poetry in Russian

The primary distinction between syntactic coordination and subordination is that a subordinate clause is syntactically dependent on a main clause, while in coordination, both clauses are syntactically independent. This distinction seemingly has an effect at the discourse level: as shown in previous empirical studies, main clauses differ from subordinate in respect to referential coherence (Cooreman & Sanford, 1996; Holler & Suckow, 2016) and truthfulness evaluation (Baker & Wagner, 1987). The likely underlying mechanism might be discourse-level prominence (von Heusinger & Schumacher, 2019).

In our view, discourse-level prominence is linked to syntactic properties that differentiate main and subordinate clauses. These properties can be associated with the degree of syntactic integration. The degree to which a subordinate clause is integrated is defined with its position in the syntactic tree: relatively low positions (at vP) entail a greater degree of integration compared to higher positions (at CP).

To find out whether degrees of integration affect discourse-level prominence, we manipulated coordinating and subordinating connectors in five online experiments. Using syntactic tests (Pekelis, 2022), we grouped Russian connectors that introduce clauses with lower and higher degrees of integration, as well as non-integrated coordinated clauses. To measure discourse-level prominence, we implemented a delayed retrieval task assessing memory accessibility speed (Experiments 1–3) and subjective importance ratings immediately after reading (Experiments 4–5). Throughout all experiments, our main hypothesis was that the more syntactically integrated a clause is, the less prominent it becomes in discourse. That is, it becomes less accessible and subjectively important.

The final experiment also tested whether discourse-level prominence effects are conditional on the discourse genre. For that purpose, we provided similar manipulations with connectors in poetic texts that drastically differ in terms of genre-specific features and processing effects from non-literary discourses.

In four experiments with the sentence-by-sentence self-paced reading task, participants read three-sentence discourses that contained a two-clause target sentence with a connector. Participation in all experiments was paid, and participants filled out an informed consent before proceeding.

In Experiments 1–2, we first compared two conditions – coordination and subordination of both lower and higher degrees of integration. After reading all 40 texts, participants performed a retrieval task – choosing correct adjectives that appeared in target sentence clauses (foil adjectives did not appear in texts at all). Target sentences were probed in a random order, different from the order of the stimuli.

Experiment 1. 75 Russian speakers (41 females, aged 18–57) participated in Experiment 1. During the retrieval task, a first clause from a target sentence was probed first, the second was probed right after the first (and then another sentence was probed). In this and further experiments, linear and generalized linear models with mixed-effects were used for statistical inference (Bates et al., 2015; Kuznetsova et al., 2017). The observed access facilitation did not allow making clear conclusions about the influence of main-subordinate clause distinction: the access was facilitated in subordination, i.e. both main and subordinate clauses were accessed faster than clauses in coordination ($\beta = 0.00053$, $SE = 0.00016$, $t = 3.281$, $p < .01$).

Experiment 2. 71 Russian speakers (34 females, aged 18–71) participated in Experiment 2. The procedure and materials were the same, but the order of retrieval probes was reversed: clauses with connectors (subordinate clauses in subordination) were probed first, while clauses that preceded

(main clauses in subordination) were probed second. In respect to accessibility effects, no significant results were obtained. Meanwhile, the significant probe order effect was observed in both experiments: the second probe was always faster than the first one irrespective of syntactic connection type ($\beta = -0.0028$, $SE = 0.00026$, $t = -10.647$, $p < .0001$).

In Experiments 3–4, we compared three conditions corresponding to degrees of integration. We did not create new stimuli, but rather modified 36 texts from previous experiments.

Experiment 3. 101 Russian speakers (53 females, aged 16–66) participated in Experiment 3. The procedure was the same as in Experiment 1. The facilitated access to main clauses compared to subordinate was significant in the comparison between coordination and subordination with a higher degree of integration ($\beta = 0.00058$, $SE = 0.00025$, $t = -2.368$, $p = .036$). Connectors associated with a lower degree of integration did not differ significantly from coordination.

Experiment 4. 105 Russian speakers (57 females, aged 18–63) participated in Experiment 4. This time, participants were asked to choose the least important clause in texts from Experiment 3. Clauses were chosen right after reading each text. In importance ratings, the difference between the first and the second clause was significant only in subordination with a higher degree of integration ($\beta = .46$, $SE = .11$, $z = 4.193$, $p < .001$).

Experiment 5. 167 Russian speakers (84 females, aged 18–74) participated in the last experiment. This time, we manipulated three types of connection: coordination, subordination, and the intermediate connection type in both syntactic and semantic terms. More specifically, the study included Russian concomitant connectors (Weiss, 1991) of a rather unclear status: they establish semantic symmetry between propositions in clauses, but differ in respect to degrees of integration. In total, 28 connector triplets were inserted in 12 poems written by contemporary Russian poets. In the beginning of the experiment, participants read a poem (presented all at once) and answered a question about a rhyme after reading (i.e. they were choosing between a foil and the correct rhyme to another line). Then each stanza appeared on the screen one by one, and participants were to choose the most beautiful and the most important line (in respect to its meaning). After reading all poems in that manner, participants again retrieved rhymes, one from each stanza with an inserted connector. Statistical tests revealed a significant linear effect in importance ratings: the frequency of line choices increased linearly from coordination to subordination ($\beta = -.123$, $SE = .052$, $z = -2.357$, $p = .0184$), most plausibly marking the prominence of main clauses.

The results of all experiments demonstrate that syntactic integration of clauses affects discourse representations, i.e. the speed of access to discourse entities and subjective importance of clauses. In our view, discourse-level prominence underlies this effect: main clauses become more prominent than subordinate clauses. Hence, entities mentioned in main clauses are more accessible in memory, and main clauses themselves are more important to text meaning. The observed modulation of importance ratings in poetry leads us to the conclusion that this mechanism is likely to influence discourse representations in all discourse genres substantiating the role of discourse-level prominence.

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