

Object order in Russian: An experimental comparison across structures

In the literature on Russian word order, there is much debate about the syntax of ditransitives. Both direct object (DO)-indirect object (IO) and IO-DO orders are possible, as in (1), and there are proposals that DO-IO is the base order while IO-DO is derived by scrambling (Bailyn, 1995, 2010; Titov, 2012); that IO-DO is base and DO-IO derived (Junghanns & Zybatow, 1997; Dyakonova, 2007, 2009; Slioussar, 2007); and that both orders can be base-generated as well as derived (Boneh & Nash 2017).

(1) a.	Ja	podarila	čašku	devočke		DO-IO
	I	presented	cup-Acc	girl-Dat		
b.	Ja	podarila	devočke	čašku.		IO-DO
	I	presented	girl-Dat	cup-Acc		
(2) a.	Ja	našla	čašku	u	devočki.	DO-PP
	I	found	cup-Acc	at	girl-Gen	
b.	Ja	našla	u	devočki	čašku.	PP-DO
	I	found	at	girl-Gen	cup-Acc	

In contrast, there is less controversy over the base order of the DO/PP adjunct structure (as in (2)), with the DO assumed to be closer to the verb. In corpus data (Bazhukov et al. 2021), the distribution of DO-IO (1a) and IO-DO (1b) orders is near even, while DO-PP order (2a) is much more frequent than PP-DO (2b). However, corpus data, unlike experimental studies, cannot fully control for such factors as information structure (IS), animacy, referentiality, or object length, which may influence the results (cf. Bazhukov et al. 2021). Building on prior experimental research on DO/IO order (Kallestinova, 2007; Mykhaylyk et al. 2013), we examine how IS influences object order, and furthermore compare DO/IO and DO/PP configurations, in order to examine how both syntactic structure and IS affect word order in the postverbal region, when other factors are fully controlled for (e.g., animacy: in our study, DO was always inanimate, while IO/PP was always animate).

Prior studies elicited different orders via *wh*-questions, so that one object is established as new (in focus) and the other as given. We attempt to unpack what it means to be ‘given’ by examining the effects of both frequency and recency of mention. In our elicited production task, each item consisted of a context followed by a prompt, which participants completed by using the words from a word bank, presented in alphabetical order and citation form (nominative for all nouns). See samples in Tables 1-2.

We conducted two separate experiments, on DO/IO (Table 1) and DO/PP (Table 2). IS was manipulated in exactly the same ways in both. Each experiment used a 2*3 design, manipulating which object is mentioned more frequently in the context (DO vs. IO/PP, henceforth grouped under the label OBL, for Oblique), as well as which is mentioned more recently. Conditions C1 and C4 are the baseline: one object is given in the context, the other is new. In C2 and C5, frequency and recency go hand-in-hand: the more frequently mentioned object is also the one most recently mentioned. C3 and C6 tease frequency and recency apart: the more frequently mentioned object is not the most recent one.

- C1: OBL is given, mentioned 4 times; DO is new, not mentioned in the context
- C2: OBL is given, mentioned 4 times; DO is given, mentioned once, less recently than OBL
- C3: OBL is given, mentioned 4 times; DO is given, mentioned once, more recently than OBL
- C4: DO is given, mentioned 4 times; OBL is new, not mentioned in the context
- C5: DO is given, mentioned 4 times; OBL is given, mentioned once, less recently than DO
- C6: DO is given, mentioned 4 times; OBL is given, mentioned once, more recently than DO

Each experiment was completed by 12 adult native Russian speakers. The descriptive results in Figure 1 show that in the DO/IO experiment, word order preferences switched between DO-IO and IO-DO based on both frequency and recency. In contrast, for the DO/PP experiment, the preferred word order was always DO-PP, even though this preference was weakened when the PP was given and DO new. Recency had a mild effect, descriptively, with a stronger preference for DO-OBL in C4-C5 relative to C6 and a stronger preference for OBL-DO in C1-C2 relative to C3.

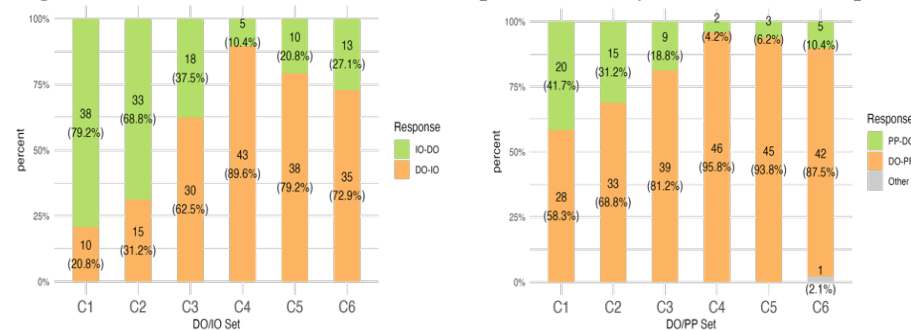
Table 1. Sample item for DO/IO experiment

sample context (English translation) for C3 (IO more frequent, DO more recent) – <i>typographical enhancement provided here, not present in the task</i>	word bank (with English translations)	possible responses
Zinaida works as a secretary in a small firm. On Thursday, she arrived at the company early and went to the office of the director . She started to clean the director's table. Her director was very busy these days. The director looked very tired. Zinaida made a fresh <u>coffee</u> . As a nice secretary, Zinaida...	direktor (director.Masc-Nom) kofe (coffee-Nom) prinesti (bring-Inf)	...prinesla kofe directoru [DO-IO] ... prinesla direktoru kofe [IO-DO]

Table 2. Sample item for DO/PP experiment

sample context (English translation) for C3 (PP more frequent, DO more recent) – <i>typographical enhancement provided here, not present in the task</i>	word bank (with English translations)	possible responses
One day Ivan visited a local farm. He was a good friend with the farmer there. The farmer was always nice and greeting to Ivan. Ivan trusted the farmer and the products very much. That day, the farmer offered a very good price for a bottle of <u>preserves</u> . When leaving, Ivan ...	varen'je (preserves.Neut-NOM) kupit' (buy-Inf) u (at) fermer (farmer.Masc-NOM)	...kupil varen'je u fermera [DO-PP] ...kupil u fermera varen'je [PP-DO]

Figure 1. % of DO-OBL and OBL-DO production, by condition and experiment



The data were analyzed using generalized linear mixed effects models with OBL-DO order coded as 0 and DO-OBL order as 1. The best-fitting model (lowest AIC and BIC scores) included the interacting factors of Experiment and Frequency; adding Recency did not improve the model. The best-fitting model yielded a significant effect of Experiment:DO/PP ($z=2.18$, $p<.05$), indicating that DO-OBL order was significantly more common (and OBL-DO order less common) in the DO/PP than the DO/IO experiment. There was a significant effect of Frequency:OBL ($z=-4.01$, $p<.001$): OBL-DO order was more likely when OBL was more frequent than when DO was more frequent (and vice-versa for DO-OBL order). Experiment and Frequency did not interact ($z=.78$, $p=.44$).

Our findings confirm that IS affects Russian word order in the postverbal region, and furthermore show that (i) IS affects both DO/IO and DO/PP structures in similar ways; and (ii) frequency of mention seems to matter more for givenness than recency of mention. The much greater prevalence of DO-OBL order in the DO/PP than the DO/IO structure confirms prior corpus findings (Bazhukov et al. 2021), while controlling for all extraneous factors. Our findings are most consistent with the possibility that both DO-IO and IO-DO can be base-generated (Boneh & Nash 2017), and the preference for one over the other is due to IS. In contrast, for DO/PP, the base-generated order is DO-PP, and this order prevails even when IS favors PP-DO order. This is tentative conclusion, given that our study did not test syntactic properties of the two word orders (such as binding and WCO; cf. Bailyn 2010, among others). At the same time, this study highlights the importance of separately testing the effects of IS and syntactic structure, while controlling for other possible effects on word order preferences.

References

- Bailyn, J. F. (1995). *A configurational approach to Russian "free" word order*. Doctoral dissertation, Cornell University. ProQuest.
- _____. (2010). What's inside VP? New (and old) evidence from Russian. In Wayles Browne, Adam Cooper, Alison Fisher, Esra Kesici, Nikola Predolac & Draga Zec (Eds.) *FASL: The Second Cornell Meeting 2009* (pp. 21-37). Ahn Arbor: Michigan Slavic Publications.
- Bazhukov, M., Chubarova, L., Slioussar, N., & Toldova, S. (2021). The order of objects in Russian: A corpus study. *Computational Linguistics and Intellectual Technologies: Papers from the Annual International Conference "Dialogue"*, 20, 68-78. <http://dx.doi.org/10.28995/2075-7182-2021-20-68-78>.
- Boneh, N. & Nash, L. (2017). The syntax and semantics of dative DPs in Russian ditransitives. *Natural Language & Linguistic Theory*, 35(4), 899-953. <http://dx.doi.org/10.1007/s11049-017-9360-5>.
- Dyakonova, M. (2007). Russian double object constructions. *ACL Working Papers*, 2(1), 3-30.
- _____. (2009). *A phase-based approach to Russian free word order*. Doctoral dissertation, Universiteit van Amsterdam. LOT.
- Junghanns, U. & Zybatow, G. (1997). Syntax and information structure of Russian clauses. Browne, W., Dornisch, E., Kondrashova, N., and Zec, D. (Eds.), *FASL: The Cornell Meeting 1995* (pp. 289-319). Ahn Arbor: Michigan Slavic Publications.
- Kallestinova, E. (2007). *Aspects of word order in Russian*. Doctoral dissertation, University of Iowa. <https://iro.uiowa.edu>.
- Mykhaylyk, R., Rodina, Y. & Anderssen, M. (2013). Ditransitive constructions in Russian and Ukrainian: Effect of givenness on word order. *Lingua*, 137, 271–289. <https://doi.org/10.1016/j.lingua.2013.10.001>.
- Slioussar, N. (2007). *Grammar and information structure: A study with reference to Russian*. Doctoral dissertation, Utrecht Institute of Linguistics. LOT Publications.
- Titov, E. (2012). *Information structure of argument order alternations*. Doctoral Dissertation, UCL. UCL Discovery.