INDEPENDENT SOURCES OF RELATIVE CLAUSE PROCESSING DIFFICULTY: EVIDENCE FROM RUSSIAN

by

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DISSERTATION

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ABSTRACT

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The University of Texas at Arlington, 2016

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This study investigates the influence of syntactic, semantic, and frequency-of-occurrence information, as well as role of memory in the comprehension of complex sentences. This was done by examining the processing of Russian subject- and object-extracted relative clauses (SRCs and ORCs) that had the same word order configuration, but different noun phrase (NP) types (descriptive noun vs. pronoun) in the relative clause (RC). In both SRCs and ORCs, this word order was such that an NP argument preceded the RC verb, establishing equivalent linear distance between the modified noun and its integrating verb. A corpus analysis and offline acceptability rating experiment indicated different frequency profiles and preferences for this word order depending on clause type (SRC vs. ORC) and embedded-clause NP type (descriptive noun vs. pronoun). Reading patterns on these SRC/ORC sentences, as
well as on matched complement clause sentences, were examined using self-paced reading (SPR) and eye tracking. In line with structural expectation effects, both SPR and eye tracking revealed processing difficulty at the first embedded-clause NP for clauses with dispreferred word orders. Also consistent with these effects, the eye-tracking experiment revealed processing costs at and after the relativizer in ORCs, which generally occur less frequently than SRCs. Across experiments, there were also clear integration costs for RC sentences at and after the RC verb, which were comparable for both SRCs and ORCs when integration distance was held constant. Finally, late-stage comprehension difficulty was found for nominal ORCs, but not for their pronominal counterparts, suggesting that similarity-based interference also influences RC processing – particularly for nominal ORCs, in which organizing the thematic roles for NPs might be especially difficult. These findings are taken to support a hybrid model of incremental processing difficulty in RC sentences that posits core roles for structural expectations and memory-based integration (e.g., Levy, Fedorenko, & Gibson, 2013; Staub, 2010).
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I would also like to thank Inga Khelm, for her assistance in developing the experimental items, Sergey Iakovlev for his help with the corpus analysis, and all the Russian native speakers who volunteered to participate in the experiments.
DEDICATION

I am most grateful to God for helping me to successfully and joyfully go through graduate school, conduct research, and write this dissertation.

I want to thank my husband, Matthew Price, as well as my my mother, Inga Khelm, for always supporting me along the way. I would also like to thank my friend Noel Kifer, who encouraged me much at the beginning of the PhD program while we were roommates. I am also thankful for my classmate Jessica Rohr and for my labmate Ehsan Shafiee Zargar, both of whom have been great friends and supporters for me over my years at UTA. Moreover, I am grateful to my classmate Lori Pierce and her husband Mark who helped me to establish a healthy lifestyle and workout habits early in the graduate program, which brought more balance into my life and thus helped me to achieve my academic goals.

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<tr>
<td>ACC</td>
<td>Accusative (Case)</td>
</tr>
<tr>
<td>CC</td>
<td>Complement Clause</td>
</tr>
<tr>
<td>CP</td>
<td>Complementizer Phrase</td>
</tr>
<tr>
<td>DAT</td>
<td>Dative (Case)</td>
</tr>
<tr>
<td>DLT</td>
<td>Dependency Locality Theory</td>
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<td>EPP</td>
<td>Extended Projection Principle</td>
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<tr>
<td>IMP</td>
<td>Incremental Minimalist Parser</td>
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<tr>
<td>INSTR</td>
<td>Instrumental (Case)</td>
</tr>
<tr>
<td>KWIC</td>
<td>Key Word in Context</td>
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<tr>
<td>MC</td>
<td>Matrix Clause</td>
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<tr>
<td>NOM</td>
<td>Nominative (Case)</td>
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<td>NP</td>
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<td>Object</td>
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<td>OBL</td>
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<td>ORC</td>
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<td>Prepositional Phrase</td>
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<tr>
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<tr>
<td>RT</td>
<td>Reading Time</td>
</tr>
<tr>
<td>S</td>
<td>Subject</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<td>--------------</td>
<td>-------------------------------</td>
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<tr>
<td>SD</td>
<td>Standard Deviation</td>
</tr>
<tr>
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<td>Specifier</td>
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<tr>
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CHAPTER ONE:
INTRODUCTION

During language comprehension, different types of information contribute to the interpretation of sentences. These include syntactic and semantic information, as well as information about the frequency of occurrence of certain structures. One way to determine how these information types are used during real-time sentence processing is to investigate the comprehension of sentences that cause processing disruptions. An example of such sentences involves relative clauses (RCs) (1a-b). An RC is a subordinate clause that typically modifies a noun phrase (NP). Under generative syntactic analysis, RCs contain a trace of an extracted constituent that is linked with the modified NP (Heim & Kratzer, 1998). Example 1a shows a case in which the subject is the extracted constituent, or a subject-extracted RC (SRC), while 1b provides an example of an object-extracted RC (ORC).

1. a. The reporter.[that $t_1$ attacked the senator] admitted the error.

   b. The reporter.[that the senator attacked $t_1$] admitted the error.

Generally, research has shown that ORCs are more difficult to process compared to SRCs (e.g., Gibson, 1998, 2000; King & Just, 1991; Staub, 2010; Traxler, Morris, & Seely, 2002). This is the case not only in English, but also in other languages, including Chinese (Lin & Bever, 2006; Vasishth, Chen, Li, & Guo, 2013, but see Hsiao & Gibson, 2003), Dutch (Mak, Vonk, & Schriefers, 2002),
Hungarian (MacWhinney & Pleh, 1998), and Japanese (Miyamoto & Nakamura, 2003; Nakamura & Miyamoto, 2013). Given that this SRC-ORC processing difference applies across a number of languages, understanding the nature of this disparity has the potential to shed light on core properties of the language processing system, and, more specifically, on how different sources of information contribute to real-time sentence comprehension.

To date, a number of models for this phenomenon have been proposed. These accounts attribute the processing difficulty for ORCs to different sources, including subject-object structural asymmetries (Clifton & Frazier, 1989; Hawkins, 1999; Lin & Bever, 2006; MacWhinney & Pleh, 1998; O'Grady, 1997; Townsend & Bever, 2001; Traxler et al., 2002; Traxler, Williams, Blozis, & Morris, 2005), structural expectations (Hale, 2001; Levy, 2008; MacDonald & Christiansen, 2002; Reali & Christiansen, 2007), memory costs (Gibson, 1998, 2000; Gordon, Hendrick, & Johnson, 2001; Gordon, Hendrick, & Johnson, 2004; Gordon, Hendrick, Johnson, & Lee, 2006; Gordon, Hendrick & Levine, 2002; Johnson, Lowder, & Gordon, 2011; King & Just, 1991; Lewis & Vasishth, 2005; Vasishth & Drenhaus, 2011), or a combination of these factors (Levy, Fedorenko, & Gibson, 2013; Staub, 2010). One way to test among these models is to examine where processing difficulty for ORC sentences occurs during incremental sentence processing (see e.g., Gibson, 1998, 2000; Gordon et al., 2001; Grodner & Gibson, 2005; Levy et al., 2013; Staub, 2010). Indeed, these models often
predict processing costs at different points in the RC. For instance, expectation-based models predict surprisal effects at the point where the less frequent ORC construction is encountered, while memory-based accounts predict additional processing time when arguments are integrated at the RC verb – which generally occurs across greater distance and over more potentially interfering material in ORCs compared to SRCs. However, in many languages, such as English, it is difficult to test among these competing accounts because of word order differences between SRCs and ORCs (as illustrated in the examples above). These disparities make it difficult to compare the relevant regions of these clauses and to tease out the nature of observed processing time differences. The Russian language offers a potential solution to this problem because it has a relatively more flexible word order. This makes it possible for Russian SRCs and ORCs to have the same lexical material inside the RC in the same linear order (with case-marking distinguishing between the RC types), thus allowing for straightforward comparisons of the processing of these clauses.

The present study takes advantage of this property of Russian to examine potential sources of processing difficulty at specific points in RC sentences. In particular, using self-paced reading (SPR) and eye tracking, this study investigated the real-time processing of Russian SRC and ORC sentences in which an NP argument intervened between the modified noun and the RC verb in both of these sentence types. This created a configuration in which the same
number of NP arguments was available for integration at RC verb, across the same linear distance, in both SRCs and ORCs. This design thus allowed for an examination into whether RC processing difficulty relates to integration distance – in which case, there should be comparable costs for SRCs and ORCs when this distance is held constant – or to structural asymmetries – in which case, there should be particular processing difficulty for ORCs even when integration distance is controlled in this way. Furthermore, the influence of structural expectations on the processing of these sentences was investigated by using different NP types – specifically, descriptive NPs and pronouns – in the embedded clause. As indicated by a corpus analysis and an offline acceptability rating experiment, these NP types are associated with very different word order frequencies/preferences. This made it possible to investigate the role of expectation-based processing in these sentence types while again holding word order constant across experiments. In these ways, the present study attempts to assess different potential sources of processing difficulty in RC sentences and thus to test among the competing models of processing costs for these sentence types.

The remainder of this dissertation is structured as follows: Chapter 2 describes the models of RC processing that were briefly introduced above. It also discusses the predictions of these models for RC processing and the contributions of the current study. Chapter 3 discusses some theoretical assumptions about word
order in Russian RCs. Chapter 4 reports on a corpus analysis that investigated the
frequencies of different RC word orders in Russian. Chapter 5 reports on an
acceptability rating experiment that investigated preferences for different word
orders in Russian RCs. Chapter 6 discusses a SPR experiment that used nominal
RCs constructions (Experiment 1). Chapter 7 covers an investigation into the
processing of pronominal RCs in two SPR studies (Experiments 2a-b). Chapter 8
describes an eye-tracking experiment that investigated processing of nominal RCs
(Experiment 3). Finally, Chapter 9 concludes the dissertation with a General
Discussion.
CHAPTER TWO:
RC PROCESSING ACCOUNTS, THEIR PREDICTIONS FOR RC PROCESSING, AND THE CONTRIBUTIONS OF THE CURRENT STUDY

As mentioned in the Introduction, several models have been proposed to account for subject-object processing asymmetry in RCs. This chapter discusses each group of theories in more detail. These groups are (a) subject-object structure-based models (Clifton & Frazier, 1989; Hawkins, 1999; Lin & Bever, 2006; MacWhinney & Pleh, 1998; O’Grady, 1997; Townsend & Bever, 2001; Traxler et al., 2002, 2005), (b) expectation-based models (Hale, 2001; Levy, 2008; MacDonald & Christiansen, 2002; Reali & Christiansen, 2007), (c) memory-based models (Gibson, 1998, 2000; Gordon et al., 2001, 2002, 2004, 2006; Johnson et al., 2011; King & Just, 1991; Lewis & Vasishth, 2005; Vasishth, & Drenhaus, 2011), and (d) hybrid models (Levy et al., 2013; Staub, 2010). After a description of these models, their predictions for RC processing are discussed. Finally, the contributions of the current study are presented in light of these models and predictions.

Structure-based Models of RC Processing

The first models of interest are those that attribute the SRC-ORC processing asymmetry to structural differences (Clifton & Frazier, 1989; Hawkins, 1999; Lin & Bever, 2006; MacWhinney & Pleh, 1998; O’Grady, 1997; Townsend & Bever, 2001; Traxler et al., 2002, 2005). For example, the
incremental minimalist parser (IMP) theory attributes ORC processing difficulty to differences in extracting from subject and object positions in the RC. This theory posits that lexical items are incrementally incorporated into the syntactic structure by projecting specifier and complement positions that are to be filled by upcoming material (Lin & Bever, 2006). This account predicts that SRCs should be easier to comprehend than ORCs due to the higher structural position of the subject and, therefore, the shorter structural distance between the extracted constituent and its extraction site (see also Hawkins, 1999; O’Grady, 1997).

Other accounts hold that the ORC penalty is due to a preference for analyzing the modified noun, which in examples 2a and 2b (repeated from 1a-b) is the matrix clause (MC) subject the reporter, as the subject of the RC (Clifton & Frazier, 1989; Traxler et al., 2002, 2005). This results in the correct analysis for SRCs, but not for ORCs. Under such models, ORC processing difficulty relates to the structural reanalysis required for these RCs. For example, according to the active filler strategy (Clifton & Frazier, 1989) model, the parser always attempts to place an extraction position in the first possible site, which in the case of the example sentences below is after the relativizer (that) (see 2a-b).

2. a. The reporter_{1} [that \textit{t_{1}} attacked the senator] admitted the error.
   b. The reporter_{1} [that the senator attacked \textit{t_{1}}] admitted the error.
While in SRCs (2a), this is the correct extraction position, in ORCs (2b), it is not. ORC sentences therefore require reanalysis, which leads to longer processing times\(^1\).

Another structure-based model for the SRC-ORC processing asymmetry is the perspective maintenance account (MacWhinney & Pleh, 1998), which explains the processing difficulty for RC constructions in terms of the number of times the perspective of the subject shifts in the sentence. For example, in subject-modifying SRCs as in 2a, this perspective does not shift, and the grammatical role of the head NP stays the same. This is because the MC subject (*the reporter*) is also the subject of the RC. In subject-modifying ORCs as in 2b, however, because the MC subject is the object of the RC, the subject perspective changes twice – from *the reporter* (in the MC) to *the senator* (in the RC) and then back to *the reporter* (in the continuation of the MC). Under this model, this perspective shift explains the processing difficulty for ORCs. The strict parallel function account (Sheldon, 1974), on the other hand, claims that as long as sentences have an MC and RC that are parallel in structure (e.g., in subject-modifying SRCs or object-modifying ORCs), they should be easier to process compared to sentences with non-parallel clauses (e.g., in object-modifying SRCs or subject-modifying ORCs).

What is important for the current study is that both of these accounts predict that

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1 This account, however, was not supported by the results of Staub’s (2010) study that compared ORCs with and without an overt relativizer. The prediction was that if the active filler strategy is correct, the absence of the relativizer should not trigger the placement of the extraction position and therefore make the processing of the ORCs easier, but that was not the case.
subject-modifying ORCs should be more difficult to process than subject-modifying SRCs.

Finally, some models explain the SRC-ORC processing asymmetry in terms of the word order templates in the language (Holmes & O’Regan, 1981; Townsend & Bever, 2001). These accounts posit a two-stage processing mechanism, in which the first stage involves a surface mapping of the input onto a canonical word order template to assign thematic roles, while the second stage refines this initial parse with a deeper syntactic analysis. In English, the SVO word order, or agent-action-patient, is the canonical order. SRCs are predicted to be easier to process because they correspond to this canonical template, while ORCs do not.

Expectation-based Models of RC Processing

Similar to models that suggest an important role for word-order-based heuristics in ORC processing difficulty are those that attribute these costs to the frequencies of constructions in the language and the experience of language users (Hale, 2001; Levy, 2008; MacDonald & Christiansen, 2002). For instance, expectation-based theories (Hale, 2001; Levy, 2008) predict difficulty or surprisal when unexpected constructions are encountered. Generally, in nominal RCs – i.e., in RCs in which the embedded NP is descriptive (e.g., *the senator* in 2a-b) – ORCs are less frequent than SRCs (Gordon & Hendrick, 2005; Reali & Christiansen, 2007). Under expectation-based models, processing difficulty in
nominal ORCs as in 2b is due to this frequency disparity. Support for these models comes from studies showing a switch in the SRC-ORC processing asymmetry when ORC constructions occur more frequently than their SRC counterparts. In English, this is the case with pronominal RCs – that is when the NP in the RC is a pronoun (as in 3a-b) (Reali & Christiansen, 2007; Roland, Dick, & Elman, 2007).

3. a. The reporter [that attacked you] admitted the error.
   b. The reporter [that you attacked] admitted the error.

Reali and Christiansen (2007) showed that the more frequent pronominal ORCs (3b) were easier to process compared to less frequent SRCs (3a). This result was taken to indicate that expectation-based accounts make more accurate predictions than, for instance, the structural asymmetry models discussed above, which cannot easily explain these findings.

The surprisal theory (e.g., Levy, 2008) also predicts that in English, the verb (attacked) in the ORCs (2b) should be processed faster than in SRCs (2a) because after seeing the subject (the senator) in 2b, the reader should have higher expectation to see a verb next (as there are not many other options). In SRCs (2a), however, at the time the verb appears, at least two different options could be expected in that position – the SRC verb or ORC subject NP. The surprisal account therefore predicts that as more words in the RC are encountered, the processing of upcoming elements should become easier because of the growing
probability of their appearance. However, several studies have not borne out this prediction (Gibson, 1998; Staub, 2010), which, as Levy (2008) notes, gives support for other accounts, such as memory-based, which are discussed below.

Expectations related to the animacy of the modified and the embedded-clause NPs in relation to their role assignments also appear to influence RC processing (Gennari & MacDonald, 2008, 2009; Mak et al., 2002; Traxler et al., 2002, 2005). For example, it has been shown that when an RC modifies an inanimate MC subject, there is a stronger expectation for an ORC, as the reader expects this MC subject to be a patient and not an agent of the RC. If this expectation is confirmed, this reduces ORC processing difficulty (Gennari & MacDonald, 2008). Similarly, in Dutch, no difference between the SRC and ORC processing was found when the object of the RC was inanimate (Mak et al., 2002). These effects have been attributed to higher frequencies of ORCs modifying inanimate NPs, and the expectation for inanimate NPs to be the object (the patient) and not the subject (the agent) of the action, making it easier to assign the roles in the sentence (Gennari & MacDonald, 2008, 2009; Mak et al., 2002). Related to the latter of these explanations, Traxler et al. (2002, 2005) attribute the facilitated processing for inanimate-head ORCs to the semantic reinforcement of syntactic information. Under this account, readers initially treat the modified NP as the subject of the RC, which requires reanalysis for ORCs (in line with structure-based theories discussed above). However, when the head NP
of the ORC is inanimate, it is easier to abandon this initial misanalysis due to the semantic cue that the inanimate NP is a suitable object (patient). On the other hand, when an animate NP that is more appropriate for an agent role has to be reanalyzed as the patient in the ORC, it is more difficult to adopt this new analysis, which explains difficulty for ORCs with animate heads.

Memory-based Models of RC Processing

Another class of accounts attributes the SRC-ORC asymmetry to working memory processes during sentence comprehension. Specifically, these memory-based accounts explain the processing difficulty for ORCs in terms of the distance between the NPs and the types of NPs (i.e., descriptive NPs, pronouns, proper names) that need to be encoded, stored, and retrieved for integration at the RC verb (Gibson, 1998, 2000; Gordon et al., 2001, 2002, 2004, 2006). Additional factors that have been found to relate to memory during RC processing are the semantic properties of the NPs (i.e., animacy, relatedness, and lexical frequency) (Johnson et al., 2011; Lowder & Gordon, 2014), as well as properties of the RC verbs (King & Just, 1999; Lewis & Vasishth, 2005; Lewis et al., 2006; Traxler et al., 2002; Van Dyke & Lewis, 2003; Van Dyke & McElree, 2006).

Dependency locality theory (DLT) (Gibson, 1998, 2000; Warren & Gibson, 2002) attributes processing costs during sentence comprehension to storage and structural integration. Under this account, integration is a process of connecting lexical items with the unfolding structure, where the cost of this
process is quantified by the number and type (i.e. pronoun, proper name, or descriptive NP) of discourse referents introduced before the dependency between the integrated elements is resolved. In this way, ORCs (2b) are more difficult than SRCS (2a) because an additional descriptive NP discourse referent (*the senator*) is introduced between the two elements that need to be integrated (e.g., *the reporter* and *attacked*). This means that the extracted element (*the reporter*) must be kept in working memory while processing another descriptive referent, which causes processing difficulty at the RC verb. Importantly, the amount of processing difficulty under this account depends on the accessibility of the intervening referent from the discourse. Specifically, descriptive NPs, especially in the null context, are the most costly interveners, while the first- or second-person indexical pronouns are the least as they are implicitly present in the discourse and therefore are highly accessible.

A number of studies appear to support the predictions of the DLT. Warren and Gibson (2002), for example, showed that it is easier to integrate over pronouns and proper names compared to descriptive NPs. This was attributed to the idea that it is less costly to access a referent for these NP types than for descriptive NPs. In addition, in one of their experiments, they rotated the positions of the quantifier (*everyone*) and two descriptive NP subjects in doubly-embedded RC structures (e.g., *Everyone who the journalist who the photographer met liked was at the party*). They found that the more embedded position of the
quantifier led to less processing difficulty (based on complexity ratings), which could not be accounted for by purely the degree of similarity of these subjects. Grodner and Gibson (2005), also showed increasing RTs at the RC verb that directly corresponded to the distance, and therefore the number of intervening referents, between the modified MC NP and the RC verb.

In attempt to find further support for the DLT, Fedorenko, Piantadosi, and Gibson (2012) tested the claims of the theory’s original version (Gibson, 1998, 2000) that the intervening NP caused processing difficulty because it introduced a new discourse referent. Interestingly, when they investigated if ORC difficulty in English would decrease when this intervening discourse referent was introduced in the previous context, they found that ORCs were still more difficult than SRCs. This was not fully consistent with the predictions of the DLT, and was taken to support similarity-based interference accounts of ORC processing difficulty.

Similarity-based interference accounts (Gordon et al., 2001, 2002, 2004, 2006) posit that processing difficulty for ORCs arises not because of how easy or difficult it is to access an intervening NP from the discourse, but because of its type similarity with the modified NP. In other words, when the structure of the sentence requires the reader to hold two similar NPs in working memory before integrating them with the verb, like in an ORC, similarity-based interference
hinders comprehension as these two NPs interfere with each other’s processing (Gordon et al., 2006).

Gordon et al. (2001) tested whether the degree of the ORC difficulty was in fact related to the referent type (full descriptive NP, indexical pronoun, or proper name), or whether it was due to the similarity of the NP in the RC and the modified NP. They also found reduced processing difficulty in the pronominal ORCs, and in ORCs with embedded proper name NP. They explained that one of the reasons why proper names and pronouns might make ORC processing easier is that they place a lighter semantic burden on memory since they only make a reference to an entity. Descriptive NPs presumably require accessing a full semantic representation and therefore cause a heavier processing load. The reduction in processing difficulty for ORC sentences with pronouns inside the RC observed in earlier studies (Gibson, 1998; Warren & Gibson, 2002) was also explained by the fact that it is not possible for a name or a pronoun to serve as a subject of the MC in sentences with restrictive RCs modifying the subject (e.g., *John/*You that saw the lawyer went to the parking lot.). This eases the processing of such ORC sentences as there is a high probability that a name or a pronoun inside the embedded clause is an RC subject. This also makes it easier to assign theta roles in the sentence and, therefore, reduces the SRC-ORC processing difference.
In light of these observations and to test the similarity-based interference account of ORC processing difficulty, in one of their experiments, Gordon et al. (2001) used cleft constructions in the MC. This was done in order that proper names could appear both as the modified NP and as the RC NP (as shown in 4a-b):

4.  a. It was the barber/John that saw the lawyer/Bill in the parking lot.

   b. It was the barber/John that the lawyer/Bill saw in the parking lot.

The results of this experiment showed that SRC-ORC processing difference was greater when NPs were similar regardless of their type (both descriptive NPs or both proper names) compared to when they were different (a descriptive NP and a proper name). These results were taken to indicate that it is not the referential properties of proper names or pronouns that reduce the ORC difficulty. Rather, it was suggested that SRC-ORC processing differences are due to similarity-based interference that plays role specifically when the word order configuration is such that two similar NPs have to be remembered before integration. This is the case in ORCs in which the modified NP and the RC NP are semantically similar.

In this way, the DLT and similarity-based interference accounts have different explanations as to why pronominal ORCs are not more difficult than SRCs, which, as described above, was attributed to their relative frequency by Reali and Christiansen (2007). Under the DLT account, the difficulty of pronominal ORC sentences (3b) is reduced because the referents for these
pronouns are highly activated in the discourse and therefore are easily accessible, making it easier to integrate over them (Gibson, 2000; Warren & Gibson, 2002). Similarity-based interference account, however, suggests that pronominal ORCs are easier due to the dissimilarity of the modified MC NP and the RC NP, where one is a descriptive NP and the other is a pronoun.

In addition to semantic cues and expectations related to the animacy of the RC subject and object discussed above, animacy also appears to add another dimension to memory processes during RC comprehension. For instance, Lowder and Gordon (2014) have argued that animacy can aid memory encoding and storage by providing semantic differentiation cues that, again, help distinguish which constituent should be considered for which position in the syntactic tree. However, this study found that animacy interacts with semantic similarity in an unexpected way. Specifically, it indicated that when the modified NP and the RC NP (e.g., mayor/senator or bills/senator) had a semantically meaningful relationship, the animacy of the NPs was not used as a processing aid for ORCs. Rather, animacy appeared to be used during ORC processing only in more difficult constructions that had semantically unrelated NPs (waitress/senator or recipe/senator). The authors explained this result by positing that when the comprehender is not able to establish a meaningful connection between the NPs, they must utilize resources available through animacy cues that otherwise are not necessary. This demonstrates that fine-grained processing characteristics such as
animacy and information relatedness can also make it easier or more difficult to organize elements in memory.

Memory effects in RC sentence comprehension have also been investigated by examining how lexical frequencies of the modified NP and RC NP affect SRC-ORC processing (Johnson et al., 2011). Johnson et al. (2011) found that processing difficulty for ORCs was reduced when the modified NP was of lower lexical frequency relative to the RC NP. They explained this effect by appealing to list-composition effects, in which the pattern of recall is different for high frequency and low frequency items depending on the order in which they are presented. This finding suggests that memory plays a major role in processing of RCs, and, in particular, when two NPs have to be stored in memory before they are integrated with the RC verb. Specifically, it indicates that when the first NP is more distinct (low-frequency), and therefore requires more careful encoding into the memory, it becomes easier to retrieve later when the complex ORC construction is encountered.

Finally, another class of memory-based accounts focuses on the properties of RC verbs, and therefore the stage of processing at which NPs are retrieved for integration at the verb. Cue-based retrieval accounts, for example, explain memory-based retrieval processes in terms of argument-structure requirements of the RC verb (Lewis & Vasishth, 2005; Lewis et al., 2006; Van Dyke & Lewis, 2003; Van Dyke & McElree, 2006; Vasishth, 2011). For example, a verb like
attacked (in 2a-b) requires a human agent; therefore, integration of this verb with its subject involves a search for an NP that fits this characteristic. Under this account, RC difficulty would arise when there is more than one candidate for that role. In this way, this model is somewhat similar to the similarity-based interference account presented above; however, instead of the focusing on the similarity of NP types, the main reason for interference under this model is the retrieval cues set by the verb. In line with this account, other studies have shown that there are some verbs that are pragmatically biased towards certain interpretations of the sentence (e.g., The robber that the fireman rescued stole the jewelry), which can also facilitate or inhibit RC processing (King & Just, 1999; Traxler et al., 2002).

Predictions for RC Processing Difficulty under Different Models

All of the models described above predict ORC processing difficulty in global comprehension measures. However, this is particularly the case under accounts that emphasize the difficulty of assigning thematic roles (agent and patient) in ORC constructions. Word order template accounts (Holmes & O’Regan, 1981; Townsend & Bever, 2001), for example, attribute comprehension difficulty for ORCs to the fact that these clauses do not conform to the canonical SVO order, so thematic roles cannot be assigned via an agent-action-patient template during the initial parse of the sentence. Rather, these roles must be assigned through relatively costly reanalysis during deeper syntactic processing.
Another account that predicts particular difficulty when assigning thematic roles in RCs is the similarity-based interference account (Gordon et al., 2001, 2002, 2004, 2006). As discussed above, this model attributes ORC comprehension difficulty to the similarity of the two NPs that need to be held in memory before their integration with the RC verb. Under this account, similarity-based interference affects not just early, but also late stages of processing, which could result in an incomplete or incorrect interpretation when assigning thematic roles, and therefore in low comprehension accuracy.

The models discussed above, however, make different predictions about the locus of difficulty during incremental processing. Structure-based models do not make uniform predictions about the loci of the effects, as some of them predict difficulty at the point of establishing the connection between the extracted constituent and its extraction site (e.g., Lin & Bever, 2006), which in English ORCs as in 2b is at and after the RC verb (attacked), while other accounts predict difficulty at the words that trigger structural reanalysis, which is the RC NP (the senator) (e.g., Clifton & Frazier, 1989; Traxler et al., 2002, 2005).

Expectation-based and memory-based models, however, make clear predictions about the loci of RC processing difficulty. Expectation-based theories (e.g., Hale, 2001; Levy, 2008) predict disruption at the first point where the unexpected construction is encountered – which for English nominal ORCs as in 2b is again at the RC NP (the senator). These accounts also predict that in
English, the verb *(attacked)* in the ORCs like 2b should be processed faster than in SRCs like 2a because, as mentioned above, after seeing the RC subject (*the senator*), the reader should have a strong expectation for an RC verb. That is, these models predict that as more elements in the RC are encountered, the processing of upcoming elements should become easier due to the growing probability of their appearance (Levy, 2008).

Memory-based accounts of RC processing difficulty, on the other hand, predict processing costs at the point of retrieval and integration (e.g., Gibson, 1998, 2000; Gordon et al., 2001, 2002, 2004, 2006; Van Dyke & McElree, 2006; Vasishth, 2011). This point corresponds to the verb of the RC *(attacked)*, with this difficulty relating to the types and number of NPs that have to be held in memory before integration. However, as noted by Gordon and Lowder (2012), if the memory effects are encoding-based, then this difficulty could be revealed as early as at the second similar NP in the ORC (see also Johnson et al., 2011; Vasishth, 2011).

Studies that have investigated the loci of these effects, however, have revealed processing difficulty at different points in ORC sentences – some early in the embedded clause (Forster, Guerrera, & Elliot, 2009; Gennari & MacDonald, 2008), and some at the end of the ORC (Gordon et al., 2001; Grodner & Gibson, 2005; Johnson et al., 2011). Other studies have found processing difficulty both at the beginning of the RC as well as at the RC verb
(Levy et al., 2013; Staub, 2010). These findings have been taken to indicate that no single account can sufficiently explain the ORC processing difficulty and thus serve as support for hybrid models of RC processing, which are discussed next.

**Hybrid Models of RC Processing**

Staub (2010) have argued that a complete theory of RC processing must integrate both memory- and expectation-based accounts. The SRC/ORC sentence types similar to 2a and 2b above were used in this study in a set of eye-tracking experiments. The results showed qualitative differences in processing at both the beginning of the ORC and at the point of integration, suggesting that both expectation-based and memory-based processes play key roles during RC comprehension. The disruption at ORC NP (*the senator* in 2b) took the form of an increase in regressive eye-movements and longer regression-path duration measures, but there was no increase in gaze duration. This pattern of eye-movements was interpreted to suggest a surprisal effect at the beginning of the ORC. At the RC verb (*attacked* in 2b), on the other hand, longer reading times (RTs) were found for ORCs in all three first-pass reading measures (first fixation, gaze duration, and regression-path duration) – a pattern of results that was taken to suggest a memory-based integration penalty.

Levy et al. (2013) have also argued for a hybrid model of RC processing. This study provided support for such a model based on a series of SPR
experiments examining Russian RC sentences and manipulating their word order.

Specifically, they tested SRC and ORC sentences as in 5a-d:

5. a. [SRC, canonical]
Slesar’, kotoryj udaril elektrika so vsego razmaha,
Repairman, who.NOM hit electrician.ACC with all strength,
ušel domoj s sinjakom pod glazom.
went home with bruise under eye.
‘The repairman, who hit the electrician with all his strength, went home with a bruise under his eye.’

b. [SRC, non-canonical]
Slesar’, kotoryj elektrika udaril so vsego razmaha,
Repairman, who.NOM electrician.ACC hit with all strength,
ušel domoj s sinjakom pod glazom.
went home with bruise under eye.

As illustrated in these examples, Russian permits different word orders inside the RC – the canonical order (5a and 5c) as well as non-canonical word orders (5b and 5d). This allows for SRCs and ORCs to involve local or non-local integration of NPs with the RC verb. Specifically, in the SRC and ORC sentences involving
local integration (5a and 5d), the modified noun (slesar 'repairman') is immediately followed by the RC verb (udaril 'hit') and then by the second argument in the clause (elektrik(a) ‘electrician’). In the SRC and ORC sentences involving non-local integration (5b and 5c), however, this second argument intervenes between the modified noun and the RC verb. A corpus analysis also indicated that these non-local SRC and ORC sentences occur less frequently than their local counterparts. Inflated RTs were revealed at both the intervening NP and the immediately following RC verb in non-local SRC and ORC sentences, with no difference between these RC types. This pattern was interpreted as inconsistent with subject-object structural asymmetry models of RC processing difficulty. Rather, the results at the intervening NP were taken to indicate expectation-based processing difficulty for RCs with dispreferred word orders, while the findings at the verb were taken to index memory-based integration that was comparable for SRCs and ORCs.

Although these results offer intriguing support for the combined influence of expectation- and memory-based effects in the processing difficulty associated with RCs, questions remain about the nature of the processing costs at these regions. Specifically, because the non-local SRCs and ORCs also involved dispreferred word orders, it is unclear whether the effect at RC verb reflects the spillover of expectation effects from the immediately preceding NP region. Alternatively, the effect at the intervening NP in these sentences might be
attributed to memory-based encoding effort when the construction requires two NPs to be held in memory before integrating them at the verb (see also Gordon & Lowder, 2012; Johnson et al., 2011).

The Contribution of the Current Study

In light of the conflicting accounts of RC processing difficulty discussed above, the current study builds on and extends research into Russian RCs to determine the loci and sources of comprehension difficulty in these complex sentences. The roles of both structural expectations and memory in the processing of RC sentences was investigated by again exploiting the flexible word order in Russian, but in ways that differ from previous work. The reading patterns on Russian SRC and ORC sentences in which an NP argument intervened between the modified noun and the RC verb were of particular interest. In Experiments 1 and 3, this intervening argument was a descriptive NP, while in Experiment 2, it was a pronominal NP. These manipulations had several crucial implications. First, holding the word order configuration in these sentences constant decoupled RC type from integration distance, allowing for a clear examination into whether RC processing difficulty relates to SRC/ORC structural asymmetries or integration distance. Furthermore, using these different NP types in the embedded clause permitted an investigation into structural expectations without comparing across sentences with different word order configurations. The association of these NP types with very different word order frequencies/preferences was indicated by a
corpus analysis and an offline acceptability rating experiment, which are presented below. This NP type manipulation was also designed to evaluate similarity-based interference effects by creating a dissimilar NP condition in pronominal RCs.

It is also important to emphasize several methodological features that were included in order to clarify the nature of processing costs in Russian RCs. First, processing difficulty in these SRCs and ORCs was assessed by comparing these sentence types against each other, as well as against matched complement clause (CC) sentences. These CC sentences provide a crucial baseline because they are associated with different patterns of word order preferences (see below) and, perhaps more importantly, because they do not involve extraction out of the embedded clause. Moreover, in order to minimize the potential influence of spillover effects on adjacent regions of interest – and thus to provide a clearer indication of incremental processing differences – the items in all experiments included buffer material between critical regions. With respect to online measures, it is important to point out that while Experiments 1-2 used SPR, Experiment 3 employed eye tracking – a reading methodology that has the potential to reveal qualitative differences in processing SRCs and ORCs at different points in the clause. Finally, in addition to these measures, comprehension questions related to the embedded-clause material were also
included in order to evaluate the influence the experimental manipulations on overall comprehension.

Before talking about the results of the corpus analysis and experiments conducted in the current study, and, particularly, before presenting the sentences of interest, it is important to discuss these structures of interest in terms of their word order and syntactic structure. Therefore, the following chapter discusses some of the word order properties of Russian sentences in general and of RCs in particular, as well as issues related to word order flexibility and theoretical assumptions about the syntax of Russian RCs and their word order derivations.
CHAPTER THREE:
RUSSIAN WORD ORDER

It is important to establish the syntactic structure and the assumptions about the word order derivations for the RCs of interest in the corpus analysis and in the experimental studies described in subsequent chapters. This is particularly relevant in light of predictions of the structure-based accounts of RC processing described above and in terms of considerations about how information structure might relate to expectations for certain word orders. Therefore, this chapter first discusses assumptions about word order and functional information structure in Russian sentences in general, and RCs in particular. In the second section, this chapter provides theoretical assumptions about the syntax of the Russian RCs, their hierarchical structure, as well as about possible ways in which the non-canonical word orders of interest are derived.

Functional Sentence Structure

There are a number of indications that SVO is the unmarked, canonical, underlying word order in Russian. These include the following: (a) pragmatically neutral or null-theme context sentences preserve SVO word order (Bailyn, 2003; Bivon 1971; Krupp, 1983); (b) SVO word order is statistically most frequent (Bivon, 1971); (c) SVO order is adopted when no inflectional cues are available to indicate the grammatical function of NPs (e.g., Mat’ lubit doč’ ‘Mother loves daughter’, but could also mean ‘Daughter loves mother’) (Bivon, 1971). There are
also syntactic indications, such as subjects c-command objects, and, finally, gerundive and participial phrases have a fixed VO order (Bailyn, 2003).

The underlying SVO order nevertheless allows all other possible surface word orders (Bailyn, 1995, 2003; Bivon 1971; Kallestinova, 2007; Krupp, 1983; Svedova, 1980; *inter alia*). This relatively ‘free word order’ property is the primary reason why Russian was chosen for the present study. Specifically, since Russian sentences are mainly joined together by means of morphologically marked word forms, it allows different sentence structures to be created by keeping the lexical material in the same linear order and changing only its morphological marking. It has been shown, however, that Russian word order is not completely free, in that it is limited by specific conditions and that word order changes can influence meaning of the sentence (Kallestinova, 2007; Kovtunova, 1976; Krylova & Khavronina, 1988; Sirotina, 1965).

Functional approaches to the investigation of word order patterns emphasize the role of the context. Under these approaches, contextually given and new information in the conveyed message determines the appropriate word order of the sentence (Firbas, 1992; Kovtunova, 1976; Krylova & Khavronina, 1998; Svedova, 1980; Yokoyama, 1986). According to Krylova and Khavronina’s (1998) account, for example, the word order in the utterance depends on the
purpose of the speaker (writer) to communicate new information\(^2\). The sentence, therefore, is divided into two parts: the first part, called theme, presents the known information, while the second part, called rheme, conveys new information, or the message being communicated.

Different lexical categories can form the theme and the rheme, as these assignments are based only on the information structure (i.e., known vs. new) of the sentence. Since the new message (the rheme) is positioned after the theme, the two word orders (in 6a, 6b) will be answers to two different questions (the rheme is underlined; the word order in the English translations corresponds to the Russian):

   ‘Who is walking towards us?’ Towards us is walking Anna.

   b. Čto delaet Anna? Anna idet nam na vstrechu.
   ‘What is Anna doing?’ Anna is walking towards us.

(from Krylova & Khavronina, 1998)

Importantly, even inside the theme, certain orders can be preferred or dispreferred depending on what information is the center of the interlocutors’ attention. For example, if the object in the sentence is given primary attention, it is positioned before the verb. The preferred answer to question 7a is 7b and not 7c, as the action is mentioned as a matter of fact (Krylova & Khavronina, 1998).

\(^2\) The use of scrambled or inverted word orders can also depend on the style of the narration (Kozlik, 1965; Krylova & Khavronina, 1998), as well as emotive stress and intonation (Kallestinova, 2007; Koptunova, 1976), which is beyond the scope of this discussion as only written sentence comprehension is under investigation in the current study.
7. a. Kto napisal kartinu “Burlaki”?  
‘Who made the painting “Burlaki”? 

‘The painting “Burlaki” made Repin.’

‘Made the painting “Burlaki” Repin.’

(from Krylova & Khavronina, 1998)

Although these functional word order accounts deal mainly with simple one-clause sentences, some of them briefly mention compound and other complex structures, which are under investigation in the current study. Krylova and Khavronina (1998), for example, talk about complex sentences in the endnotes. They mention that the division into theme and rheme in complex sentences has multiple stages: first, the whole sentence is divided into the theme and rheme according to its function, and then the subordinate clause is also divided in the same manner as a regular simple sentence. The example of the RC construction in 8 (with the rheme underlined) shows these stages.

8. Stage 1: Samolet, kotoryj toliko čto przemlilsja, - marki TU-144.  
The plane, which just landed, - is TU-144 brand.

Stage 2: [kotoryj toliko čto przemlilsja]  
[which just landed]

(from Krylova & Khavronina, 1998)

In sum, with regard to the present study, it is important (a) that the default word order in a Russian clause is SVO, (b) that all word orders are possible, (c) that the word order in a Russian sentence depends on its theme-rheme functional
structure, and (d) that the embedded clause in a complex sentence can have a theme-rheme structure analogous to that of an independent, single-clause sentence.

Theoretical Assumptions about the Syntax of Russian RCs

The previous section provided an overview of the functional structure of Russian clauses. In light of evidence indicating that SVO is the underlying canonical Russian word order, the following section takes up the question of how all other surface word orders are derived. This section therefore provides a brief overview of the Russian RC syntactic structure that is assumed in this study, as well as of the syntax of the non-canonical word order derivations that are relevant for this project. The positions of arguments inside the verb phrase (VP) are also shown in this section, which is important with regard to structure-based accounts of RC processing described in the previous chapter. This overview largely follows the analyses presented by Bailyn (1995, 2004, 2012).

Russian RCs can be formed with the case-marked relative pronoun kotoryj ‘which/who’ or the case-unmarked pronoun čto/kto ‘what/who’, as well as by other means that are not relevant here. RCs with the case-marked relative pronoun are of particular interest in this review, as they are used in the experiments reported in subsequent chapters. Specifically, the sentences of interest in the present study are non-canonical SRCs like in 10 below and canonical ORCs like in 9b. However, before looking at the non-canonical version of the SRC, it is
important to establish what the canonical structures are (as in examples 9a and 9b). As can be seen from these examples, the relative pronoun agrees in gender and number with the RC head it modifies, and its case is determined by its syntactic role in the embedded clause.

9.  
   a. SRC (canonical)
      Hozjajka.F.SG,  [CP kotoraja.F.SG.NOM  [TP rasstroila starušku.ACC
      Housewife.F.SG,  [CP who.F.SG. NOM [TP upset old_lady.ACC
      rasskazom.INSTR,]  legla...
      story.INSTR,]  lay...
      ‘The housewife, who upset the old lady with her story, lay….’

   b. ORC (canonical)
      Hozjajka.F.SG,  [CP kotorujo.F.SG.ACC [TP staruška.NOM rasstroila __
      Housewife.F.SG,  [CP whom.F.SG.ACC [TP old_lady.NOM upset__
      rasskazom.INSTR,]  legla…
      story.INSTR,]  lay...
      ‘The housewife, whom the old lady upset with her story, lay….’

Under generative syntactic analyses, RCs are formed by movement of the relative pronoun (kotoraja(-uju)) from the position in which it is integrated with the predicate (indicated by __ in 9a-b) to the Spec of CP position in the RC. Even though many other analyses exist, following Bailyn (2012), the structure of 9b as shown in Figure 1 is assumed in this study. (The structure for 9a can be found in Appendix A.)
In this structure, the RC CP is an adjunct to the NP it modifies, which is not essential for the purposes of this project. Szczegielniak (2005) showed convincing evidence that kotoryj-RCs in Russian are the matching type of RC, which means that the head NP of the RC does not originate in and raise out of the embedded clause. However, under a matching analysis it could be assumed that
the RC has an unpronounced copy of the head NP inside the RC (e.g., *kotoruju hozjajku* ‘which housewife’) that gets deleted in the underlying form (Sauerland, 2003). For this project, it is not crucial whether a matching or raising analysis is adopted, mainly because the experimental comparisons are done between RCs of the same structural type. The main point is that the *wh*-operator (*kotoraja*-*uju*) ‘who/whom’) is moving out of its base position, and is co-indexed with the RC head.

The structure in Figure 1 also illustrates several assumptions adopted in this study about the VP-internal hierarchical positions of the arguments in Russian. Following Bailyn’s (1995, 2012) analysis, the VP structure in Russian includes three underlying argument positions (subject, object, and indirect/oblique object). There is also a functional category in between the TP and VP that is marked here as *vP. VP does not include the subject of transitive verbs, which is generated instead in Spec of *vP. There is also a VP internal asymmetry, in which the accusative object c-commands the oblique object that is generated lower.\(^3\) The

\(^3\) The internal argument position of the INSTR case NP (*raszkazom* ‘with_story’) as a complement inside the VP is presented here following Bailyn’s (2012) analysis and is open for debate. One might argue that since this NP is not part of the verb argument structure < rasstroila *upset* > [NP\(_1\) ___ NP\(_2\)] and is not required by the verb, it has to be in an adjunct position. However, the binding relationship between the ACC and the INSTR indicate that the latter has to be lower in the structure to be c-commanded by the antecedent and not violate Principle A (as shown below):

\[
\begin{align*}
a. & \quad \text{Mama} \quad \text{napugala} \quad \text{Petrovi} \quad \text{drug drugom} \\
& \quad \text{Mother.NOM} \quad \text{scared} \quad \text{Petrovs.ACC} \quad \text{each other.INSTR} \\
& \quad \text{‘Mother scared the Petrovs by each other.’} \\
\text{b.} & \quad \ast \text{Mama} \quad \text{napugala} \quad \text{drug druga} \quad \text{Petrovimi} \\
& \quad \ast \text{Mother.NOM} \quad \text{scared} \quad \text{each other.ACC} \quad \text{Petrovimi. INSTR}
\end{align*}
\]
verb inside of the vP undergoes a ‘Short’ Verb Movement up (Bailyn, 1995), and this is how the canonical word order is proposed to surface. The details of the VP internal structure are not essential for the present project, but it is nevertheless important to see the higher structural position of the subject in relation to object, as well as to be consistent regarding the base positions of the arguments when discussing word order scrambling.

As was mentioned above, the experiments in the current study use non-canonical or scrambled embedded clause word order in SRCs as well as in one of the CC controls (the syntactic structure of which can be found in Appendix A). It is important to see how these non-canonical word orders are generated syntactically and what motivates the movement of the elements. While there are many different accounts and explanations for scrambling (for review, see Bailyn, 2012), an account that provides both a mechanism and a motivation for movement from the base-generated structure is presented below.

Bailyn (2004, 2012) offers explanations for all possible word orders in Russian and shows how different surface orders can be achieved in slightly different ways. Under this analysis, there are two kinds of movement involved in Russian scrambling, the evidence for which comes from the effects of movement on binding: A-movement (where binding is affected) and A’-movement (where binding is not affected). There are also different motivations for these two distinct movement types. A-movement (also called inversion) is motivated by the
necessity to satisfy the Extended Projection Principle (EPP) feature, which can be checked by any NP, prepositional phrase (PP), and other constituent moved to the Spec of TP. Movement-to-the-far-left (A’-movement) is driven by functional form, and is connected with the discourse and information structure of the sentence. The theme comes on the left side through topicalization, and the rheme on the right through extraposition. The theme/topic interpretation, however, can be assigned to the inverted A-movement constituent as well (Bailyn, 2012). This account thus provides formal explanations for movements that allow for the creation of the functionally-motivated surface structure discussed in the previous section.

Considering the two movement types described above, the scrambling process assumed for the non-canonical word order in an SRC (as in 10) is schematized in Figure 2. This is one of the sentence types of interest in the reading experiments reported below. In this structure, the object (starušku ‘old_lady.ACC’) moves to Spec of TP to satisfy the EPP feature (inversion type A-movement)4.

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4 It is also possible that the movement in this sentence is of A’ type and is caused by topicalization. In this case, the NP starušku ‘old_lady.ACC’ could adjoin to TP as Topic, building another layer of structure above the TP. Both approaches though result in the same surface position and, as stated before, can be both interpreted as a topic.
In conclusion, it is important to point out that when comparing these two structures in Russian – ORC (in Figure 1) and SRC (in Figure 2) – the place of theta role assignment for the extracted *wh*-element (the base-generated extraction
site) in ORC constructions is more deeply embedded than in SRCs, and the
distance between that wh-element’s extraction site and its antecedent is longer in
ORCs compared to SRCs. This is important with regard to the structure-based
accounts of SRC-ORC processing asymmetry presented above in Chapter 2.
Another interesting observation is that it appears that under this analysis, the
number of movements and the number of extractions are the same in the ORC
canonical structure (Figure 1) and SRC non-canonical structure (Figure 2), which
are the constructions used in the reading experiments below.

In light of the structural properties of Russian RCs, and specifically their
non-canonical word order possibilities motivated by the functional information
structure, it is important to know how frequent these different word orders are in
the naturalistic data produced by the language users. In order to look at different
word order frequencies in SRCs and ORCs, a sample of RCs from Russian
National Corpus was analyzed, which is described in the next chapter.
CHAPTER FOUR:  
INVESTIGATION OF RUSSIAN WORD ORDER FREQUENCIES:  
CORPUS ANALYSIS

Introduction

In order to make clear predictions for the reading experiments reported below in terms of expectations, it is important to establish the frequency of occurrence for the constructions in this study. This chapter therefore details an investigation of word order (canonical or non-canonical) frequencies in Russian RC constructions based on the sample taken from Russian National Corpus.

In a previous attempt to establish such frequencies by Levy and colleagues (2013), corpus counts were calculated for each RC word order. This study found that in RCs with the cased-marked relative pronoun kotoryj/kotorogo and descriptive NPs inside the RC, the canonical (VO) word order was more frequent than the non-canonical (OV) order for SRCs (VO: 147 vs. OV: 4), whereas for ORCs, the non-canonical (VS) order was more frequent than the canonical (SV) order (SV: 29 vs. VS: 41). Levy et al.’s results also showed that word order preferences in RCs, and particularly in ORCs, seemed to depend on the RC NP type. Specifically, when all ORCs (including those with descriptive NPs and pronouns) were considered, the canonical (SV) word order was found to be more frequent. The higher frequency of occurrence for the non-canonical (VS) order emerged only when ORCs with descriptive NPs were analyzed separately.
The present study extends Levy et al.'s (2013) analysis by examining word orders in SRCs/ORCs with descriptive NPs and pronouns with a larger sample of sentences (928 compared to their 279 sentences with case-marked relative pronouns). Furthermore, because previous studies have indicated that animacy can influence RC processing (e.g., Mak et al., 2002; Traxler et al., 2005), the present study also examined frequencies related to the animacy of the RC head and RC NP. Finally, the pronoun types inside pronominal RCs were analyzed in order to better assess frequency differences relevant to the first- and third-person pronouns used below in Experiments 2a and 2b, respectively.

Method

The Russian National Corpus (http://ruscorpora.ru/en/) was used for this analysis. This corpus includes fiction, non-fiction, and oral presentations from the middle of the 18th to the early 21st centuries. When the data sample was retrieved, it contained 335,076 texts consisting of 364,881,378 tokens.

The sample for this analysis was obtained using a Key Word in Context (KWIC) search with the relative pronoun kotor* (‘which’). This yielded 4,340 sentences in the Main corpus (1,042,827 sentences out of total 59,643 documents) with constructions that included plural and singular (feminine, neuter, and masculine) relative pronouns in six different cases. Each sentence was manually annotated. If the sentence was not an SRC or ORC, if the relative pronoun did not appear clause-initially, or if there was no direct object or subject inside the RC, it
was excluded from the analysis. Constructions with a pronoun or a proper name as the RC head, or a proper name inside the RC were also excluded, so that the sentences under investigation would closely resemble the items used in the reading experiments. For the sake of simplicity, verb complexes (such as modal + verb) were classified as verbs. This resulted in a sample of 928 SRCs/ORCs with descriptive NP heads and complete structures inside the RC (i.e., a relative pronoun followed by a verb and direct object in the case of SRCs and by a subject and verb in the case of ORCs). These RCs were then classified according to the following factors (also shown in Table 1): RC type (SRC, ORC), RC NP type (noun, pronoun (pronoun type)), RC word order (canonical: VO/SV, non-canonical: OV/VS), and RC head/RC NP animacy (animate, inanimate). (For details related to the tagging system, along with examples and explanations, see Appendix B.) All the constructions of interest were counted, and Pearson's chi-square test with Yates' continuity correction was conducted to compare the differences and to evaluate distributions unless the cell size was too small for some of the factors.

Table 1. Corpus Analysis Tagging System

<table>
<thead>
<tr>
<th>Tag class</th>
<th>RC type</th>
<th>RC NP type</th>
<th>RC word order</th>
<th>RC head animacy</th>
<th>RC NP animacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tag type</td>
<td>SRC</td>
<td>ORC</td>
<td>noun</td>
<td>canonical: VO/SV</td>
<td>animate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>pronoun</td>
<td>non-canonical: OV/VS</td>
<td>inanimate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(type: person, number, etc.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results and Discussion

*Overall RC Type Frequency*

All nominal and pronominal SRC and ORC counts are shown in Table 2. Figure 3 presents the percentages of ORCs and SRCs in nominal and pronominal RCs, respectively. Out of the 928 SRCs/ORCs with descriptive NP heads and complete structures inside the RC, SRCs were more frequent than ORCs (657 vs. 271, $\chi^2 = 160.56; df = 1; p < .001$). Since the current analysis only included sentences in which there was a direct object inside the SRCs, all RC verbs in the sample were transitive, so this result was not skewed by the fact that SRCs can be formed with both transitive and intransitive verbs, while ORCs can only be formed with transitive verbs (for more on this criticism of previous corpus analyses of SRCs/ORCs, see Gordon & Lowder, 2012). The pattern for RCs with descriptive NPs inside the RC was the same as for the complete set of RC sentences. That is, nominal SRCs were more frequent than nominal ORCs (589 vs. 149, $\chi^2 = 262.33; df = 1; p < .001$). However, this pattern was reversed when there was a pronoun inside the RCs – pronominal SRCs were less frequent than pronominal ORCs (68 vs. 122, $\chi^2 = 15.35; df = 1; p < .001$). This result corresponds to similar findings from corpus analyses in English, and might be attributed to the fact that NPs inside ORCs more often refer to information already given in the context (Fox & Thompson, 1990; Gordon & Hendrick, 2005; Gordon & Lowder, 2012; Reali & Christiansen, 2007).
Table 2. RC Type Counts for Nominal and Pronominal RCs

<table>
<thead>
<tr>
<th>RC Type</th>
<th>Nominal</th>
<th>Pronominal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRC</td>
<td>589</td>
<td>68</td>
<td>657</td>
</tr>
<tr>
<td>ORC</td>
<td>149</td>
<td>122</td>
<td>271</td>
</tr>
<tr>
<td>Total</td>
<td>738</td>
<td>190</td>
<td>928</td>
</tr>
</tbody>
</table>

Figure 3. Percentage of SRCs and ORCs in nominal and pronominal RCs.

**Frequencies of Different Word Orders Inside the RCs**

Table 3 presents the counts for nominal and pronominal SRCs and ORCs with different word orders in the embedded clause. Figure 4 shows the percentages of these RC types with different word orders. Out of the 738 nominal
RCs, SRCs with the canonical (VO) word order occurred most frequently (581), while SRCs with the non-canonical (OV) word order were the least frequent, occurring only 8 times ($\chi^2 = 557.43; df = 1; p < .001$). Nominal ORCs appeared relatively frequently with both the canonical (SV) (58) and non-canonical (VS) word orders (91), but were more frequent with the non-canonical order ($\chi^2 = 7.31; df = 1; p < .01$). Thus, there appears to be a strong preference for the canonical word order in nominal SRCs, but a preference in the opposite direction – i.e., for the non-canonical word order – in nominal ORCs. According to the chi-square test for independence, this correlation is highly significant ($\chi^2 = 359.96; df = 1; p < .001$). This preference for a noun to follow the verb inside nominal RCs regardless of whether it is an object or a subject (VS/VO) corresponds to the findings of Levy at al. (2013) discussed earlier.

Table 3. Counts for Nominal and Pronominal SRCs and ORCs with Different Embedded-Clause Word Orders

<table>
<thead>
<tr>
<th>RC word order / RC embedded NP type</th>
<th>Descriptive NP</th>
<th>Pronoun</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRC canonical (VO)</td>
<td>581</td>
<td>35</td>
<td>616</td>
</tr>
<tr>
<td>SRC non-canonical (OV)</td>
<td>8</td>
<td>33</td>
<td>41</td>
</tr>
<tr>
<td>ORC canonical (SV)</td>
<td>58</td>
<td>116</td>
<td>174</td>
</tr>
<tr>
<td>ORC non-canonical (VS)</td>
<td>91</td>
<td>6</td>
<td>97</td>
</tr>
</tbody>
</table>
Figure 4. Percentages of SRCs and ORCs with different word orders depending on the embedded NP type.

One explanation for the non-canonical (VS) word order preference in nominal ORCs might appeal to functional information structure – or to the idea that word order depends on the purpose of the speaker (writer) to communicate new information (Bailyn, 2012; Firbas, 1992; Kovtunova, 1976; Krylova & Khavronina, 1998; Svedova, 1980; Yokoyama, 1986). As detailed in Chapter 3, under such approaches, known or given information, i.e., the theme, usually appears first, while new information, i.e., the rheme, is aligned to the right in the clause. Again, as mentioned earlier, most studies on word order and information structure discuss simple one-clause sentences, but Krylova and Khavronina (1998) briefly mention that the division into theme and rheme in a complex
sentence has multiple stages. That is, after the whole sentence is divided into the theme and rheme, the embedded clause is also divided in the same manner. In nominal RCs, the head NP is the theme. This NP is co-indexed with the extracted element, which is represented by the relative pronoun. The other descriptive NP in the RC (subject or object of the RC) is the rheme. Since nouns are more likely to be the focus of attention than verbs, in the null context, it is natural for this descriptive NP to occur toward the right edge in the clause. This might explain why the non-canonical (VS) word order is preferred over the canonical (SV) in nominal ORCs (see Levy et al., 2013, for a comparable explanation of this preference).

The word order pattern in pronominal RCs is the opposite of that of nominal RCs. Out of the 190 sentences with pronouns inside the RC, ORCs with canonical (SV) word order occurred most frequently (116), while ORCs with non-canonical (VS) word order were the least frequent, appearing in only 6 instances ($\chi^2 = 99.18; df = 1; p < .001$). SRCs with canonical (VO) and non-canonical (OV) word orders had relatively the same frequencies (35 and 33, respectively; $\chi^2 = 0.06; df = 1; p = 0.81$). Thus, there appears to be a strong preference for the canonical word order for pronominal ORCs, but no preference for either order for pronominal SRCs. According to the chi-square test for independence, this correlation is highly significant ($\chi^2 = 48.27; df = 1; p < .001$).
Functional information structure might again account for why in pronominal RCs, the embedded subject or object tend to appear more frequently before the verb, and not clause-finally. As mentioned earlier, personal pronouns refer to something already established in the discourse and, therefore, do not convey the new information. Thus, while descriptive NPs act as the rHEME in the null context and tend to appear at the right edge of the RC, pronouns are less likely to appear in this rHEME position. Another possible explanation for the preverbal pronoun placement in the RCs might appeal to stress patterns in Russian. Personal pronouns cannot bear primary word stress unless they are focused and also bear sentence-level stress; therefore, to form a natural utterance, they have to be attached to the verb to form a prosodic word. Even though they can be attached before or after the verb, it appears that they are less likely to appear clause or sentence finally, unless they bear independent focus stress (Rappaport, 1988).

In sum, consistent with Levy et al. (2013), these analyses indicate different word order frequencies in Russian SRCs and ORCs depending on RC type (nominal vs. pronominal). For nominal SRCs, the canonical (VO) order is preferred over the non-canonical (OV) order; while for nominal ORCs, the non-canonical (VS) order is preferred over the canonical (SV) order. Pronominal RCs have a very different distribution. In sharp contrast to the strong preference for the canonical order in nominal SRCs, there is no clear word order preference in
pronominal SRCs. This finding is important in that it suggests that the non-canonical (OV) word order in SRCs is more likely to occur in pronominal versions of these clauses. Finally, for pronominal ORCs, the canonical (SV) order occurs more frequently than the non-canonical (VS) order – which is essentially the opposite of the distribution for their nominal counterparts.

*Animacy of the RC Head NP and the NP Inside the RC*

Table 4 shows the counts of RC head and RC NP animacy combinations (animate RC head + animate RC NP; animate RC head + inanimate RC NP; inanimate RC head + animate RC NP; inanimate RC head + inanimate RC NP) for nominal RCs, as well as detailed counts for sentences with different word orders inside the RCs. Figure 5 shows the percentages of the frequencies for each animacy combination with different word orders inside each RC type. Table 5 and Figure 6 provide the same information for sentences with pronominal RCs. First, this section discusses if there is an influence of animacy on the RC word order frequencies. Then, it details relative frequencies of animacy combinations in ORCs and SRCs. And finally, it concludes with findings that are most relevant to the RC sentence types used in the experiments of the current study.

With regard to the first issue, it appears that word order frequencies inside each RC type with different animacy types were roughly proportional to the overall frequency of occurrence for each construction with that word order and did not depend on the animacy of the NPs. In other words, the counts were higher
for more frequent constructions (e.g., nominal canonical SRCs or pronominal canonical ORCs) compared to less frequent (e.g., nominal non-canonical SRCs).

However, these conclusions are tentative in light of small cell sizes for some of the combinations of these factors.

Table 4. Counts of SRCs and ORCs Based on the Animacy of the RC Head and of the RC NP

<table>
<thead>
<tr>
<th></th>
<th>Animate Head</th>
<th>Inanimate Head</th>
<th>Animate Head</th>
<th>Inanimate Head</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRC canonical</td>
<td>15</td>
<td>159</td>
<td>25</td>
<td>382</td>
</tr>
<tr>
<td>SRC non-canonical</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Total SRCs</td>
<td>17</td>
<td>161</td>
<td>25</td>
<td>386</td>
</tr>
<tr>
<td>ORC canonical</td>
<td>6</td>
<td>6</td>
<td>28</td>
<td>18</td>
</tr>
<tr>
<td>ORC non-canonical</td>
<td>6</td>
<td>1</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Total ORCs</td>
<td>12</td>
<td>7</td>
<td>70</td>
<td>60</td>
</tr>
</tbody>
</table>

Figure 5. Percentages of SRCs (sums up to 100%) and ORCs (sums up to 100%) based on the animacy of the RC head and of the RC NP.
Table 5. Counts of SRCs and ORCs Based on the Animacy of the RC Head and of the RC Pronoun

<table>
<thead>
<tr>
<th></th>
<th>Animate Head</th>
<th>Inanimate Head</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Animate NP inside the RC</td>
<td>Inanimate NP inside the RC</td>
</tr>
<tr>
<td>SRC canonical</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>SRC non-canonical</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Total SRCs</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>ORC canonical</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>ORC non-canonical</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total ORCs</td>
<td>12</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 6. Percentages of SRCs (sums up to 100%) and ORCs (sums up to 100%) based on the animacy of the head NP and of the RC pronoun.

With regard to relative frequencies of these animacy combinations in nominal and pronominal ORCs, it was found that the most frequent combination
was inanimate head and animate RC NP (70 for nominal RCs; 105 for pronominal). Similar findings have been obtained in other languages (e.g., Mak et al., 2002; Roland et al., 2007). However, in Russian, for nominal ORCs, the frequency of the inanimate head and inanimate RC NPs was also high (60), whereas it was not as high for sentences with pronominal ORCs (4). This could be due to the fact that all collective nouns (e.g., state, group, company) were classified as inanimate because of their grammatical properties, while their role in the sentence is agentive and more animate in nature. This was obviously not an issue with pronoun tagging. The least frequent combination for ORCs was animate head and inanimate RC NP/pronoun for both nominal ORCs (7) and pronominal ORCs (1), which corresponds to the idea that it is unlikely to have a clause with an inanimate agent (subject) acting upon an animate patient (object).

For nominal SRCs, on the other hand, the combination of animate head and inanimate RC NP was found to be quite frequent (161). The most frequent combination for nominal SRCs, however, was inanimate head and inanimate RC NP (386). The animacy frequencies of pronominal SRCs with both animate and inanimate heads slightly shift, where animate embedded pronouns were more frequent than inanimate (16 vs. 9 for animate heads; 25 vs. 18 for inanimate heads). This could be due to high number of first-person pronouns inside the RCs, which were always classified as animate as they refer back to the speaker.
What is important for the current study is that the sentences of interest in the reading experiments reported below had animate RC heads and animate RC NPs. Among the nominal RCs, there were 17 SRCs and 12 ORCs with both animate RC heads and animate RC NPs; for pronominal RCs, the counts were 16 for SRCs and 12 for ORCs. Even though this combination does not appear frequently, these numbers indicate that the animacy combination used in the current study was not especially odd for one RC type (see Mak et al., 2002, for discussion of this issue).

**Pronoun Types Inside the Pronominal RCs**

As shown in Table 6, out of the 190 sentences with pronominal RCs, the most frequent pronoun types inside both ORCs and SRCs were first- and third-person pronouns (ORCs: 122 total, 52 first-person, 51 third-person; SRCs: 68 total, 16 first-person, 27 third-person). These most frequent pronoun types were used in the experiments reported in the current study.

**Table 6. Counts of Pronoun Types Inside the ORCs and SRCs with Different Word Orders**

<table>
<thead>
<tr>
<th>RC embedded pronoun</th>
<th>ORC canonical</th>
<th>ORC non-canonical</th>
<th>SRC canonical</th>
<th>SRC non-canonical</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>51</td>
<td>1</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>2nd</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>3rd</td>
<td>50</td>
<td>1</td>
<td>19</td>
<td>8</td>
</tr>
<tr>
<td>Demonstrative</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Nominal (Indefinite)</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Reflexive</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>116</td>
<td>6</td>
<td>35</td>
<td>33</td>
</tr>
</tbody>
</table>
Conclusion

The main purpose of this corpus analysis was to determine Russian SRC and ORC frequencies depending on their word orders and embedded NP types (descriptive NP vs. pronoun). The results showed that while nominal SRCs and pronominal ORCs were more frequent with canonical word order, nominal ORCs were more frequent with non-canonical, and there was no difference in frequency for canonical and non-canonical pronominal SRCs.

To confirm the results of this corpus analysis, versions of the RC items used in the reading experiments – which had both canonical and non-canonical word orders in the embedded clauses – were also examined in an acceptability rating task presented in the following chapter. Moreover, since the experimental items in the experiments of the current study were compared against baseline CC controls, which also appeared both with canonical and non-canonical word orders of the embedded clause, it is important to justify claims about word order preferences in CC sentences as well. Therefore, both RCs and CCs of interest were examined in the acceptability rating experiment described in the next chapter.
CHAPTER FIVE:
INVESTIGATION OF RUSSIAN WORD ORDER
PREFERENCES: ACCEPTABILITY RATING EXPERIMENT

Introduction

An acceptability rating experiment was conducted to examine Russian native speakers’ word order preferences for the complete set of sentence types tested in the reading experiments, including the CC sentences. This experiment thus aimed (a) to confirm the word order preferences found for Russian RCs in the corpus analysis and (b) to verify that the canonical SVO word order is preferred over non-canonical OVS in Russian CCs, regardless of whether these clauses contain descriptive NPs or pronouns.

Method

Participants

Fifty-four native Russian speakers participated in the experiment for monetary compensation.

Materials and Design

The item sets from the reading experiments provided the basis for the sentences in this experiment (a sample item set for this study is presented in Appendix C). This created a set of 48 items that appeared in conditions defined by four factors: (a) embedded clause type (RC, CC); (b) embedded NP type (descriptive NP, as in Experiments 1 and 3; first-person pronoun, as in
Experiment 2a; third-person pronoun, as in Experiment 2b); (c) sentence type (SRC, ORC, which for CCs meant that the embedded word order up to the verb was the same as in the corresponding RC sentence type); and (d) word order (canonical: VO/SV for RCs, SVO for CCs; non-canonical: OV/VS for RCs, and OVS for CCs). These items were simplified versions of the sentences from the reading experiments, in which adverbial and PP spillover regions (see the example items for each of the experiments in the chapters to follow) were removed wherever possible (see Appendix C for details). Sentences with a third-person pronoun in the embedded clause were presented along a context sentence. These were the same context sentences that were used in Experiment 2b. Eight counterbalanced lists were created, in which each item appeared three times, but each time in a different condition and with a different embedded NP type. Thirty-two filler sentences were also created (which can also be found in Appendix C) – 16 clearly ungrammatical sentences (e.g., *Prepodavatel’ proverjat’ ekzamenacionnyje raboty. ‘*The instructor to grade exams.’), and 16 perfectly grammatical sentences with canonical word order (e.g., *Frontoviki polučili materialnuju pomošč. ‘The veterans received welfare.’) 

Procedure

The experiment was run using the web-based implementation of the DMDX software package (Forster & Forster, 2003; Witzel, Cornelius, Witzel, Forster, & Forster, 2013; Witzel, Witzel, & Forster, 2012). This made it possible
for native Russian speakers to participate in the experiment online. Language
background screening questions as well as written instructions in Russian were
given at the beginning of the experiment. Each target sentence was presented on
the participant’s computer screen on a single line, in the center of the screen.
Context sentences for items with third-person pronouns in the embedded clause
were presented above the target sentence and were always clearly marked as
контекст ‘context’. For these items, participants were instructed to read both the
correct and target sentences, but to rate only the target. The rating scale – 1
(completely unacceptable) - 2 (not fully acceptable) -3 (somewhat acceptable) - 4
(acceptable) - 5 (completely acceptable) – was presented for each trial just below
the target sentence in Russian: 1 (абсолютно неприемлемо) - 2 (не очень
приемлемо) - 3 (допустимо) - 4 (приемлемо) - 5 (совершенно приемлемо).
Participants rated the sentences using the 1-5 keys on the keyboard. Each list of
176 items was divided into 8 sets of 22, with a break after each set. The order of
item presentation was randomized for each participant. There were 4 practice
items at the beginning of the task.

Data Analysis

Each dataset that contributed to the analysis met three inclusion criteria.
First, as an indication of reliability in the ratings, mean scores for duplicate
conditions could differ by no more than 1 point. These duplicate conditions were
created as follows: The CC controls for ORC sentences in Experiments 1 and 3
had the canonical SVO word order (e.g., ... *that the old lady*.NOM upset the
*aunty*.ACC...), but appeared in both the canonical and non-canonical (OVS) order
(e.g., ... *that the aunty*.ACC upset the *old lady*.NOM...) in this experiment.

Comparably, the CC controls for SRC sentences in Experiments 1 and 3 had the
non-canonical OVS word order (e.g., ... *that the old lady*.ACC upset the
*aunty*.NOM...), but appeared in both the non-canonical order and canonical (SVO)
order (e.g., ... *that the aunty*.NOM upset the *old lady*.ACC...) in this
experiment. Since the embedded subject and object NPs in these clauses were
both descriptive, it created two sets of structurally identical conditions that only
differed in lexical material (e.g., *aunty* vs. *old lady*) in these positions. The other
two criteria related to ratings on the filler items. If the mean rating on the
grammatical filler items was lower than 4 or if the mean score on the
ungrammatical filler items was higher than 2, the dataset was excluded. The
datasets from six participants did not meet one or more of these criteria and were
excluded from the analysis. In addition, there was a 30-second timeout for each
item. If the participant did not make a judgment within that timeframe, the trial
was discarded. This resulted in the loss of 0.91% of the trials.

The data for RCs and CCs were analyzed separately. ANOVAs were
conducted over mean rating scores by subjects ($F_1$) and by items ($F_2$) with
embedded NP type (descriptive NP, first-person pronoun, third-person pronoun),
sentence type (SRC, ORC), and word order (canonical, non-canonical) as repeated measures and list/item group as a grouping factor.

Results and Discussion

RC Clause Type

For RCs, the mean rating scores and standard deviations for each condition are presented in Table 7 and Figure 7. The main analysis revealed a significant three-way interaction of NP type, sentence type, and word order ($F_1$ (2, 80) = 123.92, $p < .001$; $F_2$ (2, 80) = 188.89, $p < .001$), indicating differences in word order preferences in SRCs and ORCs depending on the NP type inside the RC. In order to shed light on nature of this interaction, separate analyses were conducted for RC sentences with each embedded NP type.

Table 7. Mean Rating Scores for RCs with Different Word Orders Inside the Embedded Clause

<table>
<thead>
<tr>
<th>Sentence type</th>
<th>SRC</th>
<th>ORC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nominal</td>
<td>Pronominal (1st person)</td>
</tr>
<tr>
<td>Word order/ embedded NP type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canonical (VO/SV)</td>
<td>4.33 (0.67)</td>
<td>4.42 (0.54)</td>
</tr>
<tr>
<td>Non-canonical (OV/VS)</td>
<td>3.14 (0.89)</td>
<td>4.38 (0.56)</td>
</tr>
<tr>
<td>Canonical Preference Effect</td>
<td>1.19***</td>
<td>0.04</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.
Figure 7. Mean rating scores for RCs with different word orders inside the embedded clause.

For nominal RCs, there were main effects of sentence type ($F_1 (1, 40) = 26.66, p < .001; F_2 (1, 40) = 51.71, p < .001$) and word order ($F_1 (1, 40) = 17.23, p < .001; F_2 (1, 40) = 27.26, p < .001$). More importantly, there was a highly significant interaction of word order and sentence type ($F_1 (1, 40) = 123.51, p < .001; F_2 (1, 40) = 285.23, p < .001$), indicating that the preference for one word order over the other depended on the sentence type (SRC vs. ORC). Pairwise comparisons indicated that for SRCs, the canonical (VO) word order inside the embedded clause was preferred ($F_1 (1, 40) = 96.55, p < .001; F_2 (1, 40) = 290.94$,
The opposite preference was shown for ORCs – with the non-canonical (VS) word order rated higher than canonical (SV) order ($F_1 (1, 40) = 59.18, p < .001; F_2 (1, 40) = 65.41, p < .001$).

Pronominal RCs revealed a very different pattern. For RC sentences with the first-person embedded pronoun, there were main effects of sentence type ($F_1 (1, 40) = 32.52, p < .001; F_2 (1, 40) = 29.81, p < .001$) and word order ($F_1 (1, 40) = 83.60, p < .001; F_2 (1, 40) = 172.84, p < .001$) as well as a significant interaction of these factors ($F_1 (1, 40) = 46.89, p < .001; F_2 (1, 40) = 67.78, p < .001$). Unlike in their nominal RC counterparts, first-person pronominal ORCs had higher ratings for the canonical (SV) order than for the non-canonical (VS) order ($F_1 (1, 40) = 86.98, p < .001; F_2 (1, 40) = 170.94, p < .001$). Also, in contrast to the canonical word order preference in nominal SRCs, there was no reliable difference between the ratings for the canonical (VO) and non-canonical (OV) orders in first-person pronominal SRCs (both $F$’s < 1).

A very similar pattern was obtained for RC sentences with the third-person embedded pronoun. There were significant main effects of sentence type ($F_1 (1, 40) = 17.30, p < .001; F_2 (1, 40) = 38.46, p < .001$) and word order ($F_1 (1, 40) = 37.86, p < .001; F_2 (1, 40) = 80.46, p < .001$) as well as a significant interaction of word order and sentence type ($F_1 (1, 40) = 29.21, p < .001; F_2 (1, 40) = 34.46, p < .001$). This interaction again indicated that ORC canonical sentences were rated higher than ORC non-canonical sentences ($F_1 (1, 40) = $
41.76, $p < .001$; $F2 (1, 40) = 99.00, p < .001$), while there was no difference in the ratings for canonical and non-canonical SRCs (both $F$'s < 1).

In sum, this rating task revealed that for nominal RCs, the preferred word orders were canonical (VO) for SRCs and non-canonical (VS) for ORCs. The pattern was largely reversed for pronominal RCs with both first- and third-person pronouns. For ORCs, the canonical (SV) order was preferred, while for SRCs, there was no clear word order preference. These results match well with the findings of the corpus analysis presented earlier.

**CC Clause Type**

The mean rating scores and standard deviations for all CC conditions are shown in Table 8 and in Figure 8. The main analysis revealed a significant three-way interaction of NP type, sentence type and word order ($F1 (2, 80) = 31.24, p < .001$; $F2 (2, 80) = 18.26, p < .001$). In contrast to the RC sentences, however, this interaction was not due to differences in the direction of these preferences. Rather, for each CC sentence type (ORC control CC, SRC control CC) with each embedded NP type (descriptive NP, first-person pronoun, third-person pronoun), sentences with the canonical word order were rated higher than their non-canonical counterparts (for all pairwise comparisons that are presented in detail below: both $F$'s > 22, all $p$'s < .001). This complex interaction reported above appears to be due to a particular dispreference for the non-canonical word order in CC sentences that involved scrambled first- and third-person pronouns in
nominative case (i.e., for the pronominal versions of the ORC control CC sentences). Thus, as predicted, the results indicated that there was a dispreference for the non-canonical (OVS) word order in the embedded clause of CC sentences, regardless of the embedded NP type.

Table 8. Mean Rating Scores for CCs with Different Word Orders Inside the Embedded Clause

<table>
<thead>
<tr>
<th>Sentence type</th>
<th>SRC Control CC</th>
<th>ORC Control CC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word order/ embedded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NP type</td>
<td>Nominal</td>
<td>Pronominal (1st person)</td>
</tr>
<tr>
<td>Canonical (SVO)</td>
<td>4.36 (0.56)</td>
<td>4.48 (0.55)</td>
</tr>
<tr>
<td>Non-canonical (OVS)</td>
<td>3.65 (0.85)</td>
<td>3.89 (0.79)</td>
</tr>
<tr>
<td>Canonical Preference Effect</td>
<td>0.71***</td>
<td>0.59***</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.

Figure 8. Mean rating scores for CCs with different word orders inside the embedded clause.
For CCs with two descriptive NPs inside the embedded clause (nominal CCs), the only significant main effect was of word order, where the canonical word order was preferred over the non-canonical order ($F_1 (1, 40) = 46.70, p < .001$; $F_2 (1, 40) = 113.36, p < .001$). The absence of the ORC control vs. SRC control sentence type effect ($F'$s < 1) for these nominal CCs was expected as the structures of the SRC and ORC control canonical conditions and of the SRC and ORC control non-canonical conditions were one of reliability tests described in detail above.

For pronominal CCs (in which one of the embedded NPs was a pronoun), the patterns were comparable in that canonical structures were also always preferred over non-canonical structures. For CCs with first-person embedded pronouns, therefore, there was a main effect of word order ($F_1 (1, 40) = 123.81, p < .001$; $F_2 (1, 40) = 291.10, p < .001$). There was also a main effect of sentence type, where CCs with accusative pronouns (SRC controls) overall were rated higher than those that had nominative pronouns (ORC controls) ($F_1 (1, 40) = 73.28, p < .001$; $F_2 (1, 40) = 55.19, p < .001$). A significant interaction of word order and sentence type ($F_1 (1, 40) = 53.23, p < .001$; $F_2 (1, 40) = 42.72, p < .001$) also indicated that the difference between non-canonical and canonical word order ratings for CCs with accusative embedded pronouns (SRC control CC canonical: 4.48, SRC control CC non-canonical: 3.89; $F_1 (1, 40) = 57.36, p < .001$; $F_2 (1, 40) = 49.10, p < .001$) was smaller than that for CCs with nominative
pronouns (ORC control CC canonical: 4.40, ORC control CC non-canonical: 3.13; $F_1 (1, 40) = 131.12, p < .001; F_2 (1, 40) = 323.98, p < .001$), even though both differences were significant. In other words, the scrambling of the nominative pronoun inside the CC appears to be especially marked. Another indication of this is that the difference between canonical CCs with accusative embedded pronouns (SRC control) and canonical CCs with nominative embedded pronouns (ORC control) was not significant ($F_1 (1, 40) = 2.01, p = 0.16; F_2 (1, 40) = 0.86, p = 0.36$), whereas the difference between these sentence types in the non-canonical conditions was highly significant ($F_1 (1, 40) = 97.07, p < .001; F_2 (1, 40) = 86.74, p < .001$).

A very similar pattern of results was obtained for CCs with third-person embedded pronoun. There were again main effects of word order ($F_1 (1, 40) = 96.79, p < .001; F_2 (1, 40) = 224.27, p < .001$) and sentence type ($F_1 (1, 40) = 24.85, p < .001; F_2 (1, 40) = 35.49, p < .001$). The interaction of word order and sentence type ($F_1 (1, 40) = 52.00, p < .001; F_2 (1, 40) = 44.72, p < .001$) again indicated that there was a pronounced dispreference for nominative pronouns being scrambled to the position after the verb. The pairwise comparisons showed that both differences between canonical and non-canonical conditions were significant (SRC control CC canonical: 4.26, SRC control CC non-canonical: 3.84; $F_1 (1, 40) = 27.06, p < .001; F_2 (1, 40) = 22.02, p < .001$; ORC control CC canonical: 4.37, ORC control CC non-canonical: 3.12; $F_1 (1, 40) = 108.81, p <$
.001; $F_2(1, 40) = 225.84, p < .001$). These comparisons also showed that the
difference between canonical CCs with accusative embedded pronouns (SRCs
control) and canonical CCs with nominative embedded pronouns (ORC control)
was not significant ($F_1(1, 40) = 2.09, p = 0.16; F_2(1, 40) = 1.89, p = 0.18$),
while the difference between the non-canonical conditions with these embedded
pronouns was highly significant ($F_1(1, 40) = 57.35, p < .001; F_2(1, 40) = 70.91,
p < .001$).

In conclusion, as anticipated, the results indicated that there was an overall
dispreference for non-canonical (OVS) word order inside CCs, as the rating
scores for the non-canonical condition were significantly lower than for canonical
condition in every sentence type regardless of the embedded NP type. However,
as was mentioned earlier, for pronominal CCs, the extent of this dispreference for
the non-canonical word order differed depending on the case of the scrambled
pronoun, where it appeared that scrambling of the embedded nominative pronoun
was more dispreferred compared to scrambling of the accusative pronoun.
CHAPTER SIX:
PROCESSING OF NOMINAL RUSSIAN RCS (SPR): EXPERIMENT 1

Introduction

Experiment 1 tested Russian SRC and ORC sentences, as in 11a and 11c, in an SPR task. These sentences were compared with corresponding CC sentences, as in 11b and 11d. The CC sentences do not involve extraction out of the embedded clause and were included to provide a baseline for integration costs at the RC verb.

11. a. SRC [embedded-clause word order: OV (non-canonical, dispreferred)]

<table>
<thead>
<tr>
<th>MC Subj</th>
<th>Rel. Pro</th>
<th>Spill R1</th>
<th>RC NP</th>
<th>Spill R2</th>
</tr>
</thead>
</table>
| Hozjajka, [kotoraja.NOM posle progulki starušku.ACC sil'no 
Housewife, [who.NOM after walk old_lady.ACC really |
| RC Verb | Spill R3 | MC Verb |
| rasstroila novostjami.] legla... |
| upset with_news,] lay... |

‘The housewife, who after the walk really upset the old lady with the news, lay on the couch in the living room.’

b. control CC for SRC [embedded-clause word order: OVS (non-canonical, dispreferred)]

<table>
<thead>
<tr>
<th>MC Subj</th>
<th>MC Verb</th>
<th>Comp</th>
<th>Spill R1</th>
<th>CC NP1</th>
<th>Spill R2</th>
</tr>
</thead>
</table>
| Hozjajka skazala,[čto posle progulki starušku.ACC sil'no 
Housewife said,[that after walk old_lady.ACC really |
| CC Verb | Spill R3 | CC NP2 |
| rasstroila novostjami tetuška.NOM.] |
| upset with_news aunty.NOM.] |

‘The housewife said that after the walk the aunty really upset the old lady with the news.’
c. ORC [embedded-clause word order: SV (canonical, dispreferred)]

<table>
<thead>
<tr>
<th>MC Subj</th>
<th>Rel. Pro</th>
<th>Spill R1</th>
<th>RC NP</th>
<th>Spill R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hozjajka,</td>
<td>[kotoruju.ACC</td>
<td>posle progulki</td>
<td>staruška.NOM</td>
<td>sil'no</td>
</tr>
<tr>
<td>Housewife,</td>
<td>[whom.ACC</td>
<td>after walk</td>
<td>old_lady.NOM</td>
<td>really</td>
</tr>
</tbody>
</table>

‘The housewife, whom after the walk the old lady really upset with the news, lay on the couch in the living room.’

<table>
<thead>
<tr>
<th>RC Verb</th>
<th>Spill R3</th>
<th>MC Verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>rasstroila</td>
<td>novostjami,</td>
<td>legla...</td>
</tr>
</tbody>
</table>

upset | with_news, | lay... |

d. control CC for ORC [embedded-clause word order: SVO (canonical, preferred)]

<table>
<thead>
<tr>
<th>MC Subj</th>
<th>MC Verb</th>
<th>Comp</th>
<th>Spill R1</th>
<th>CC NP1</th>
<th>Spill R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hozjajka</td>
<td>skazala,</td>
<td>[čto</td>
<td>posle progulki</td>
<td>staruška.NOM</td>
<td>sil'no</td>
</tr>
<tr>
<td>Housewife</td>
<td>said,</td>
<td>[that</td>
<td>after walk</td>
<td>old_lady.NOM</td>
<td>really</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CC Verb</th>
<th>Spill R3</th>
<th>CC NP2</th>
</tr>
</thead>
<tbody>
<tr>
<td>rasstroila</td>
<td>novostjami</td>
<td>tetušku.ACC.</td>
</tr>
</tbody>
</table>

upset | with_news | aunty.ACC. |

‘The housewife said that after the walk the old lady really upset the aunty with the news.’

As shown in these examples, the linear word order configuration in the embedded clause (RC or CC) was held constant across conditions. According to the corpus analysis and acceptability rating experiment described above, this was the dispreferred word order in all but the ORC control CC condition (11d). The presentation regions for these sentences are indicated in 11a-d above.

It was predicted that both nominative- and accusative-case relativizers should be read slower than CC complementizers due to their length, referential nature, as well as being the point of introduction to the RC. Moreover,
expectation-based theories predict particular processing costs for ORC sentences at this point due to readers' sensitivity to the overall lower frequency of ORCs in Russian.

Expectation-based theories also predict processing difficulty at the first region where the unexpected word order is encountered. Specifically, inflated RTs should be observed at the embedded-clause NP (staruška(-u), ‘old_lady’) in all sentences with less frequent or dispreferred word orders – that is, in SRCs (11a), SRC control CCs (11b), and in ORCs (11c). Longer RTs should be obtained at this NP compared to the same region in ORC control CC sentences (11d), which conform to the preferred word order. It is important to emphasize that if RC processing difficulty is attributable solely to expectation effects, it should be largely confined to these early regions of the embedded clause.

Memory-based accounts of RC comprehension difficulty, however, predict a different locus of processing costs – the point of integration of the NP arguments with the embedded-clause verb. That is, these costs should be revealed at the SRC and ORC verbs (rasstroila, ‘upset’) (11a, 11c) relative to their respective controls (11b, 11d). A crucial feature of these test sentences is that in both SRCs and ORCs, two NPs had to be held in the working memory before either one of them could be integrated at the verb. This configuration allows effects related to memory-based integration to be teased apart from those related to structure. Under memory-based theories – whether DLT or similarity-based
interference – if the processing costs at this verb relate only to the number of integrated elements, their type, and the distance between these elements and their integration site, these costs should be comparable in both SRCs and ORCs. However, in line with structure-based theories, if other factors such as NP sequence or position in the syntactic structure play role in RC processing, ORC processing costs should be larger even when integration distance and the number of similar NPs available for integration at the RC verb are held constant.

Finally, hybrid accounts – and in particular those put forth by Levy and colleagues (2013) and Staub (2010) – would predict independent processing costs related to both expectation-based and memory-based sources. That is, effects related to frequency/experience-based expectations should be obtained early in the embedded clause, while integration costs should be observed later in the clause, at the RC verb.

In this way, the regions of theoretical interest in this study were the relative pronoun/complementizer, embedded-clause NP, and embedded-clause verb. As illustrated by the example item set, buffer regions were added after each of these regions to determine the precise locus of observed effects and to distinguish them from possible spillover effects. In addition, as a measure of overall comprehension, each experimental item was followed by a comprehension question related to its embedded clause.
Method

Participants

Forty-three adult native Russian speakers participated in the experiment.

Materials and Design

The experimental items consisted of 48 sets of sentences as in 11a-d. As can be seen from these examples, each RC sentence involved one pair of interchangeable animate NPs (e.g., *hozjajka* ‘housewife’, *staruška* ‘old_lady’), so that both the SRC and ORC could be constructed with the same lexical items, in the same order, by changing only case-marking (from nominative to accusative, and vice versa). Half of the sentences had feminine NPs and half masculine, and the form of the case-marked relative pronoun was marked by feminine or masculine inflection accordingly. The NPs and embedded-clause verbs were selected such that both NPs were plausible agents and patients of the verb. In CCs, a third NP (e.g., *tetuška* ‘aunty’) was used as a subject or object of the embedded clause and appeared at the end of this clause. The items did not have any internal ambiguity caused by the homonymy of different case forms in Russian. The buffer regions between the critical regions were adverbials, instrumental-case nouns, or PPs. Four counterbalanced lists were constructed such that each item appeared under each combination of the sentence type (SRC, ORC) and embedded clause type (RC, control CC) factors across lists.
There were 12 practice items and 48 fillers that were comparable in length with the experimental items (filler: $M = 96.42$ characters; experimental: $M = 96.15$ characters). The filler items were made up of a variety of sentence types. As in the experimental items, half of them started with masculine animate NPs, and half with feminine animate NPs.

The YES/NO comprehension questions were created for each item such that there were equal numbers of YES and NO responses. The questions for experimental items were all based on the information expressed in the embedded clause. The same comprehension question was used for both the RC and the control CC sentences in both SRC and ORC conditions.

**Procedure**

The experiment used a self-paced, moving-window reading task (Just, Carpenter, & Woolley, 1982) and was run using the web-based implementation of the DMDX software package. Again, this made it possible for native Russian speakers to participate in the experiment online. Language background screening questions as well as written instructions in Russian were given at the beginning of the experiment, followed by the 12 practice items. Each trial began with a line of dashes displayed on the computer screen in place of the words in the sentence. The first word of the sentence was displayed when the participant pressed right CTRL key, and each subsequent key press revealed the next word or phrase in the sentence and masked the previous word. The time between the presentation of
each word/phrase and the subsequent key press was recorded to the nearest millisecond. The order of sentence presentation was randomized for each participant. Due to the length of the sentences, each sentence was presented on two lines, where the line split was at the same word in all conditions – after spillover region 3. Each sentence was followed by a YES/NO comprehension question, which the participant answered using the right and left CTRL keys. Feedback was provided on the screen in Russian after each answer. Participants were instructed to read at a natural pace and answer the questions as accurately as possible.

**Data Analysis**

The data from 11 participants with overall comprehension question error rates (ERs) of 20% or higher were eliminated from the analysis (overall ERs: $M = 25.18\%$, $SD = 5.34$; SRC: 33.33%, SRC control CC: 42.42%, ORC: 53.03%, ORC control CC: 31.82%). The data for the remaining 32 participants (overall ER: $M = 11.28\%$, $SD = 4.35$) were analyzed as follows: RTs below 100 ms or above 4000 ms were discarded (0.24% of the data). Outlier data points were adjusted to two $SD$ units above and below the participant’s mean for each region. These trimming procedures affected 4.86% of the data. The primary analyses of the RT data consisted of 2x2x4 ANOVAs for both subjects ($F1$) and items ($F2$), with sentence type (SRC, ORC) and clause type (RC, control CC) as repeated measure and list/item group as a grouping factor. Data from both correctly
answered and incorrectly answered trials were included in the RT analyses.

Because the ER measure was categorical, these data were analyzed using logistic mixed-effects models (Jaeger, 2008). These models included random intercepts and slopes for the fixed effects (sentence type, clause type) and their interaction for both subjects and items. The results reported below are from the model with the maximal random effects structure justified by the data leading to convergence.

The RT analyses were conducted over the six regions of the embedded clauses – which were of primary theoretical interest and allowed for straightforward comparisons across conditions. The mean RTs for each region of interest are shown in Table 9 and Figure 9. The ANOVA results for each region of interest and each condition are shown in Table 10.

Table 9. RT Means (SDs) for ORCs and SRCs and their CC Controls (Experiment 1)

<table>
<thead>
<tr>
<th>Region</th>
<th>Rel. Pro/Comp</th>
<th>Spill R1</th>
<th>RC/CC NP</th>
<th>Spill R2</th>
<th>RC/CC Verb</th>
<th>Spill R3</th>
</tr>
</thead>
</table>
| SRC    | ... kotoraja.NOM posle progulki | starušku.ACC | sil'no | rasstroila | novostjami, ...
| ... who. NOM after walk | old_lady.ACC | really | upset | with news, ...
| SRC control CC | ... čto posle progulki | starušku.ACC | sil'no | rasstroila | novostjami ...
| ... that after walk | old_lady.ACC | really | upset | with news ...
| CORC | ... kotoruju.ACC posle progulki | staruška.NOM | sil'no | rasstroila | novostjami, ...
| ... who.ACC after walk | old_lady.NOM | really | upset | with news, ...
| ORC control CC | ... čto posle progulki | staruška.NOM | sil'no | rasstroila | novostjami ...
| ... that after walk | old_lady.NOM | really | upset | with news, ...
| SRC | 536 (121) | 706 (229) | 846 (261) | 689 (152) | 807 (257) | 1044 (315)
| SRC control CC | 486 (129) | 725 (206) | 839 (275) | 685 (149) | 699 (152) | 840 (242)
| ORC | 531 (113) | 705 (213) | 804 (278) | 657 (157) | 783 (239) | 1027 (316)
| ORC control CC | 481 (119) | 750 (225) | 742 (197) | 676 (140) | 682 (146) | 839 (210)
Table 10. Analysis of Variance Results for Sentence Type and Embedded Clause Type Conditions and their Interaction (Experiment 1)

<table>
<thead>
<tr>
<th></th>
<th>Sentence Type (SRC + control CC vs. ORC + control CC)</th>
<th>Emb. Clause Type (RCs vs. control CCs)</th>
<th>Sent. Type X Clause Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F1 (1,28)</td>
<td>F2 (1,44)</td>
<td>F1 (1,28)</td>
</tr>
<tr>
<td>Rel. Pro/Comp Region</td>
<td>&lt; 1</td>
<td>&lt; 1</td>
<td>15.05***</td>
</tr>
<tr>
<td>Spill R1 Region</td>
<td>1.30</td>
<td>&lt; 1</td>
<td>4.71*</td>
</tr>
<tr>
<td>RC/CC NP Region</td>
<td>7.32*</td>
<td>10.21**</td>
<td>2.98</td>
</tr>
<tr>
<td>Spill R2 Region</td>
<td>1.72</td>
<td>2.00</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>RC/CC Verb Region</td>
<td>1.21</td>
<td>&lt; 1</td>
<td>18.74***</td>
</tr>
<tr>
<td>Spill R3 Region</td>
<td>&lt; 1</td>
<td>&lt; 1</td>
<td>28.91***</td>
</tr>
<tr>
<td></td>
<td>F2 (1,44)</td>
<td>F1 (1,28)</td>
<td>F2 (1,44)</td>
</tr>
<tr>
<td>Rel. Pro/Comp Region</td>
<td>&lt; 1</td>
<td>29.50***</td>
<td></td>
</tr>
<tr>
<td>Spill R1 Region</td>
<td>&lt; 1</td>
<td>3.62</td>
<td></td>
</tr>
<tr>
<td>RC/CC NP Region</td>
<td>1.47</td>
<td>1.76</td>
<td></td>
</tr>
<tr>
<td>Spill R2 Region</td>
<td>&lt; 1</td>
<td>1.47</td>
<td></td>
</tr>
<tr>
<td>RC/CC Verb Region</td>
<td>&lt; 1</td>
<td>1.76</td>
<td></td>
</tr>
<tr>
<td>Spill R3 Region</td>
<td>&lt; 1</td>
<td>1.76</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.
Results

Comprehension Accuracy

The comprehension question ERs for each condition were as follows: SRC: 15.63% (SD: 11.15), ORC: 28.13% (SD: 16.77), SRC control CC: 19.01% (SD: 13.92), ORC control CC: 13.54% (SD: 10.32). There was a main effect of clause type ($|z| = 3.00, p < .01$), but not of sentence type ($|z| = 1.19, p = .23$), as well as there was a significant interaction between the sentence type and clause type ($|z| = 3.58, p < .001$). This interaction was driven by the fact that ORCs had the highest ERs out of all conditions. Pairwise comparisons showed significant difference between ORCs and every other sentence type (ORC vs. ORC control CC: $|z| = 4.43, p < .001$; ORC vs. SRC control CC: $|z| = 3.00, p < .01$; ORC vs. SRC: $|z| = 3.74, p < .001$). The significant difference between the SRCs and ORCs ERs is especially interesting because this SRC/ORC difference was not reflected in the RT data.

Reading Times

In the first region of interest (Rel. Pro/Comp), the relative pronoun in the RC condition (regardless of case) was read more slowly than the CC complementizer (RCs: 534 ms, CCs: 484 ms; $F_1 (1, 28) = 15.05, p < .001$, $F_2 (1, 44) = 29.50, p < .001$). This result was expected, as relative pronouns have more characters, introduce the RC, and are co-indexed with the modified NP. However,
there was no difference between nominative- and accusative-case relativizers (both $F$’s $< 1$).

At the embedded NP (RC NP/CC NP1), the RTs were in direct correspondence with the frequencies/preferences associated with the sentence types under investigation. Specifically, SRCs and their CC controls – both of which had infrequent/dispreferred embedded-clause word orders – were read the slowest (main effect of sentence type: SRC and SRC control CC: 843 ms, ORC and ORC control CC: 773 ms; $F_1 (1, 28) = 7.32, p < .05, F_2 (1, 44) = 10.21, p < .01$). The nominative NP before the verb inside ORCs was also infrequent/dispreferred. As noted above, the only preferred sentence type (based on the acceptability rating study results) was the ORC control CC, which had the canonical word order in the embedded CC. Pairwise comparisons showed that the NP in these sentences was read faster than in all other conditions (ORC control CC vs. ORC: $F_1 (1, 28) = 5.91, p < .05, F_2 (1, 44) = 5.17, p < .05$; ORC control CC vs. SRC: $F_1 (1, 28) = 7.64, p < .05, F_2 (1, 44) = 13.72, p < .001$; ORC control CC vs. SRC control CC: $F_1 (1, 28) = 10.83, p < .01, F_2 (1, 44) = 16.65, p < .001$).

At the embedded-clause verb (RC Verb/CC Verb), there was a significant main effect of clause type, indicating that RC verbs took longer to read than CC verbs (RCs: 795 ms, CCs: 691 ms; $F_1 (1, 28) = 18.74, p < .001, F_2 (1, 44) = 23.22, p < .001$). There was however no interaction between the sentence type and clause type (both $F$’s $< 1$), and there was no difference between SRCs and ORCs
at this verb \( (F's < 1) \). This pattern of results indicated that when the number of NPs and the linear distance between them and the integration site were held constant, SRC and ORC verbs yielded comparable integration costs. In the immediately following spillover region (Spill R3), there was similar pattern of results (main effect of sentence type: RCs: 1036 ms, CCs: 867 ms; \( F_1 (1, 28) = 28.91, p < .001, F_2 (1, 44) = 63.94, p < .001 \), with longer RTs in the RC conditions, and no interaction of sentence type and clause type (both \( F's < 1 \)). This could be attributed to a spillover effect from the verb region.

Discussion

The pattern of RT results indicated that RC processing difficulty was triggered independently at two different points in the embedded clause – at the unexpected NP and at the verb that allows for integration of the extracted element. Furthermore, the integration costs at this verb were comparable for both RC types when the number of integrated elements, their type, and the distance between these elements and their integration site were held constant. The absence of particular difficulty for ORC sentences under this online processing time measure is of course inconsistent with structure-based accounts of RC processing. Rather, the pattern of results early in the clause is consistent with expectation-based accounts, while later in the sentence, it is consistent with memory-based accounts. Thus, in line with hybrid accounts, both expectations and memory processes
appear to play core roles during the incremental processing of Russian RC sentences.

The pattern of results early in the embedded clause was as follows: First, as predicted, relativizers took longer to process compared to complementizers. As mentioned previously, this could be due to their length, referential nature, and/or being the point of introduction to the RC. However, there was no difference in the RTs for ORC accusative- and SRC nominative-case relativizers. As detailed above, expectation-based accounts predict this difficulty due to readers' sensitivity to the overall lower frequency of ORCs in Russian. There are several possibilities for why these predictions were not borne out. One possibility is that the SPR methodology is not sensitive enough to detect these effects. Indeed, Levy et al.'s (2013) SPR experiments on comparable Russian RC sentences also showed no reliable difference between ORCs and SRCs at the relativizer. Another possibility is that the expectation for an SRC might not be particularly strong in Russian. As noted by Levy et al. (2013), the overall difference in SRC vs. ORC frequencies in Russian does not appear to be as large as, for instance, in English.

Clear indications of expectation-based effects were however found at the first embedded-clause NP – the region where the unexpected word order was first encountered. At this point in the sentence, RTs were longer in sentences with dispreferred word orders compared to the preferred order in the ORC control CC condition. It is important to note that since only RCs with case-marked
relativizers were used in this study, there was no extraction-type ambiguity at the RC onset – as in English at the relativizer *that*, where the RC could be either an SRC or ORC. Therefore, the processing difficulty at this NP for RC sentences – and for ORCs, in particular – cannot be attributed to reanalysis, as predicted under some structural accounts of RC processing difficulty based on English (e.g., Clifton & Frazier, 1989; Traxler et al., 2002, 2005). This further supports the idea that this effect at the RC NP reflects expectation processes.

A different pattern of results was obtained at and after the embedded-clause verb. In line with the memory-based accounts, there were comparable processing costs for SRC and ORC sentences at this verb when the number of integrated elements, their type, and the linear distance between the extracted element and its integrating verb were held constant. Specifically, RTs at this verb were longer in both SRC and ORC sentences than in their respective CC controls, and there was no reliable difference between these RC types. While this pattern of results does not adjudicate between different memory-based models of RC processing difficulty – e.g., the DLT and similarity-based interference models – it clearly shows that memory-based integration processes contribute to this difficulty.

In these ways, this experiment revealed a pattern of RT results similar to those found in Levy et al. (2013), which used the same method and similar sentence types. However, in the present study, the comparison of RCs with CC
control sentences and the inclusion of intervening material between the regions of interest allowed for a clearer picture of the loci and nature of processing difficulty in Russian RC sentences – and at the RC verb in particular. As discussed above, the CC controls provided a clear baseline for integration costs at this verb, while the intervening regions allowed these costs to be distinguished from the possible spillover of processing difficulty at the RC NP. In terms of spillover, it is interesting to note that such effects were evident only in the region after the RC verb. This pattern of results might be taken to indicate a qualitative difference in the effects at the RC NP and the RC verb. That is, while expectation-based effects at the RC NP might lead to longer processing time at that point, followed by quick recovery, memory retrieval and integration at the RC verb might trigger longer lasting processing difficulty.

The present study also used comprehension questions that specifically targeted the interpretation of the embedded clause, which provided additional insight into the processing of RCs. Interestingly, while there were no differences between the RC types under RT measures, there were higher ERs on comprehension questions for ORCs compared to all of the other sentence types. This might suggest that after the sentence is read, it is more difficult to remember, distinguish, and/or organize the roles of participants (the agent and patient) in ORCs than in SRCs. Since the number of the integrated NPs, their types, and the
distance between them were held constant, the only difference between the SRCs and ORCs was their structure.

Under structure-based accounts of RC comprehension, this late-stage comprehension difficulty for ORCs could be explained in several different ways. The perspective shift account (MacWhinney & Pleh, 1998), for instance, would explain this difficulty with reference to the fact that in ORCs, the perspective shifts twice – from *hozjajka* ‘housewife’ to *staruška* ‘old_lady’ and then back to *hozjajka* ‘housewife’ – while in SRCs, it remains on *hozjajka* ‘housewife’ throughout the main and embedded clauses. Alternatively, according to IMP (Lin & Bever, 2006), this late-stage ORC difficulty might be attributed to the greater hierarchical structural distance between the object *hozjajka* ‘housewife’ and its extraction site, which might make it more difficult to establish a connection between them. These results could also be explained in part according to the word order template models (Holmes & O’Regan, 1981; Townsend & Bever, 2001), although it is not entirely clear how this would work in a language with overt morphological markers. The reason why this analysis might be problematic is that it appears that morphological markers in Russian are processed as the structure unfolds. This is demonstrated for instance by the fact that readers had clear expectations for certain embedded-clause word orders based on the RC type, which was indicated by the morphology on the relativizer. While this morphology should allow for subject (agent)/object (patient) roles to be preassigned during the
initial processing stage, it is possible that there was a competition between the template word order and the preassigned roles of the arguments. In this way, when the order of the arguments did not correspond to the canonical template, such as in ORCs, the sentence could be prone to role misinterpretation.

It is also important to note that this apparent effect of structure on overall comprehension might also interact with NP similarity-based interference. Recall that in the Russian SRCs and ORCs tested in this experiment, it was necessary to hold two similar descriptive NPs in memory until their integration site, the RC verb. It is possible that this similarity is particularly disruptive to overall comprehension when assigning roles to participants and/or slotting them into their appropriate syntactic positions in ORCs.

To summarize, in line with hybrid accounts of RC processing, there were two independent points of difficulty during incremental processing, which appeared to have different sources. Expectation-based effects were revealed at the first unexpected word – the first embedded NP – in dispreferred constructions, while memory-based effects were revealed at and after RC verbs. These memory-based integration costs were comparable in SRC and ORC at the verb when the number of integrated elements, their type, and the distance between these elements and their integration site were held constant. Finally, late comprehension difficulty was revealed for ORCs only, which could be attributed to their
structural properties or to these properties in combination with similarity-based interference.

These findings can be investigated further in several ways: First, the nature of the incremental processing costs early and late in these Russian RCs could be examined by testing RC constructions with different frequency/preference profiles. If the effects observed in the present study are due to expectation-based processes at the RC NP and memory-based processes at the RC verb, the processing time pattern at the RC NP should change in accordance with the frequency/preference profiles of the RC constructions, while integration costs that the RC verb should be relatively uninfluenced by these profiles. Furthermore, the suggestion that NP similarity-based interference might trigger particular difficulty for ORC sentences in overall comprehension can be tested by examining the processing of RCs with dissimilar NPs. These issues are addressed in Experiment 2, which tested pronominal Russian RCs.
CHAPTER SEVEN:

PROCESSING OF PRONOMINAL RUSSIAN RCS (SPR): EXPERIMENT 2

Introduction

Consistent with hybrid accounts of RC processing difficulty, Experiment 1 indicated that both structural expectations and memory-based integration play key roles in the incremental processing of Russian sentences with nominal RCs. These sentence types were also characterized by late-stage comprehension difficulty for ORC sentences in particular, suggesting an influence of RC structure on their overall interpretation. Experiment 2 investigated these effects further by examining Russian sentences with pronominal RCs. Experiment 2a tested RCs with first-person pronouns, while Experiment 2b tested RCs with third-person pronouns. The linear word order in these sentences was the same as in Experiment 1, in which an NP intervened between the modified head and the embedded verb in both SRCs and ORCs. As indicated in the corpus analysis and acceptability ratings, while this was the dispreferred word order in nominal RCs, it was the preferred word order in pronominal RCs.

The use of personal pronouns in these sentences instead of descriptive NPs was important for several reasons. First, as indicated above, this change meant that the test sentences had very different frequency/preference profiles from those in Experiment 1. This is important because if RC processing costs at the RC NP are due to expectation-based processes, in this experiment, they should
correspond to the frequency/preference profiles for sentences with pronouns in the embedded clause – and thus should differ from those observed in the previous experiment. Furthermore, to the extent that processing costs at the RC verb reflect memory-based processes that are independent of expectation effects earlier in the clause, these costs should be largely uninfluenced by the frequency/preference profiles of the sentences, but should instead correspond to the predictions of memory-based models for pronominal RCs. Finally, using pronominal RCs also created SRC and ORC sentences in which the modified noun and the RC NP were dissimilar. This made it possible to examine the extent to which late-stage comprehension difficulty specifically for ORCs depends on similarity-based interference.

Experiment 2a

Introduction

Experiment 2a examined Russian sentences with first-person pronominal RCs, along with corresponding CC sentences, as in 12a-d:

12. a. SRC [embedded-clause word order: OV (non-canonical, preferred)]

<table>
<thead>
<tr>
<th>MC Subj</th>
<th>Rel. Pro</th>
<th>Spill R1</th>
<th>RC NP</th>
<th>Spill R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hozjajka, [kotoraja.NOM</td>
<td>posle progulki</td>
<td>nas.ACC</td>
<td>sil'no</td>
<td></td>
</tr>
<tr>
<td>Housewife, [who.NOM</td>
<td>after walk</td>
<td>us.ACC</td>
<td>really</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RC Verb</th>
<th>Spill R3</th>
<th>MC Verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>rasstroila</td>
<td>novostjami,</td>
<td>legla...</td>
</tr>
<tr>
<td>upset</td>
<td>with_news,</td>
<td>lay...</td>
</tr>
</tbody>
</table>

‘The housewife, who after the walk really upset us with the news, lay on the couch in the living room.’
b. control CC for SRC [embedded-clause word order: OVS (non-canonical, dispreferred)]


<table>
<thead>
<tr>
<th>MC Subj</th>
<th>MC Verb</th>
<th>Comp</th>
<th>Spill R1</th>
<th>CC NP1</th>
<th>Spill R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hozjajka</td>
<td>skazala,</td>
<td>čto</td>
<td>posle progulki</td>
<td>nas.ACC</td>
<td>sil'no</td>
</tr>
<tr>
<td>Housewife</td>
<td>said,</td>
<td>[that</td>
<td>after walk</td>
<td>us.ACC</td>
<td>really</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CC Verb</th>
<th>Spill R3</th>
<th>CC NP2</th>
</tr>
</thead>
<tbody>
<tr>
<td>rasstroila</td>
<td>novostjami</td>
<td>tetuška.NOM.</td>
</tr>
<tr>
<td>upset</td>
<td>with_news</td>
<td>aunty.NOM.</td>
</tr>
</tbody>
</table>

‘The housewife said that after the walk the aunty really upset us with the news.’

c. ORC [embedded-clause word order: SV (canonical, preferred)]


<table>
<thead>
<tr>
<th>MC Subj</th>
<th>Rel. Pro</th>
<th>Spill R1</th>
<th>RC NP</th>
<th>Spill R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hozjajka,</td>
<td>[kotoruju.ACC</td>
<td>posle progulki</td>
<td>my.NOM</td>
<td>sil'no</td>
</tr>
<tr>
<td>Housewife,</td>
<td>[whom.ACC</td>
<td>after walk</td>
<td>we.NOM</td>
<td>really</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RC Verb</th>
<th>Spill R3</th>
<th>MC Verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>rasstroila</td>
<td>novostjami.</td>
<td></td>
</tr>
<tr>
<td>upset</td>
<td>with_news</td>
<td>lay...</td>
</tr>
</tbody>
</table>

‘The housewife, whom after the walk we really upset with the news, lay on the couch in the living room.’

d. control CC for ORC [embedded-clause word order: SVO (canonical, preferred)]


<table>
<thead>
<tr>
<th>MC Subj</th>
<th>MC Verb</th>
<th>Comp</th>
<th>Spill R1</th>
<th>CC NP1</th>
<th>Spill R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hozjajka</td>
<td>skazala,</td>
<td>čto</td>
<td>posle progulki</td>
<td>my.NOM</td>
<td>sil'no</td>
</tr>
<tr>
<td>Housewife</td>
<td>said,</td>
<td>[that</td>
<td>after walk</td>
<td>we.NOM</td>
<td>really</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CC Verb</th>
<th>Spill R3</th>
<th>CC NP2</th>
</tr>
</thead>
<tbody>
<tr>
<td>rasstroila</td>
<td>novostjami</td>
<td>tetušku.ACC.</td>
</tr>
<tr>
<td>upset</td>
<td>with_news</td>
<td>aunty.ACC.</td>
</tr>
</tbody>
</table>

‘The housewife said that after the walk we really upset the aunty with the news.’

(Index: MC Subj – Matrix-clause Subject; MC Verb – Matrix-clause Verb; Rel. Pro – Relative Pronoun; Comp – Complementizer; Spill R (1, 2, 3) – Spillover Region 1, 2, 3; RC NP – Noun Phrase inside the RC; RC Verb – Verb inside the RC; CC NP – Noun Phrase inside the CC; CC Verb – Verb inside the CC)

As illustrated in the examples above, these sentences were the same as in

Experiment 1, but first-person pronouns were used in the embedded clause instead of descriptive NPs. The lexical material again appeared in the same linear order in
the embedded clause (RC or CC) across conditions. According to the corpus
analysis and acceptability ratings presented above, this was the preferred word
order in all but the SRC control CC condition in 12b.

The regions of theoretical interest were the same as in Experiment 1 – the
relative pronoun/complementizer, embedded-clause NP, and embedded-clause
verb. As in Experiment 1, buffer regions were used between these regions in order
to provide clearer indications of incremental processing differences related to the
effects of interest. The specific predictions were as follows: As in Experiment 1,
relative pronouns should be read slower than complementizers due to their length,
referential nature, and being the point of introduction to the RC. Particular
difficulty should also be revealed for the ORC accusative-case relative pronoun
compared to the SRC nominative-case relativizer, which could be attributed to
expectation due to the overall lower frequency of ORCs vs. SRCs. Note that this
latter effect was not observed in Experiment 1.

More important, however, are predictions at the first embedded NP. In line
with expectation-based theories, the processing times in this region should
correspond to the frequency/preference profiles of the pronominal RC and CC
sentences in this experiment. Specifically, there should be inflated RTs in this
region only for sentences in which the embedded clause had the dispreferred word
order – SRC control CC (12b) – compared to the other three conditions, in which
the word orders were now preferred.
The effects at the RC verb should be independent of these expectation-based effects, and should correspond to the predictions of the memory-based accounts of RC processing difficulty (Gibson, 2000; Gordon et al., 2001; Warren & Gibson, 2002). Processing costs should be comparable for SRCs and ORCs at the verb if they relate only to the number of integrated elements, their types, and the distance between them and their integration site. However, these costs might be attenuated in this experiment relative to Experiment 1 because this integration takes place over a pronoun/dissimilar word.

Finally, in order to examine late-stage comprehension, each item was followed by a question targeting information expressed in its embedded clause. It was predicted that if the comprehension difficulty for ORCs in Experiment 1 was due only to their structure, then this difficulty should persist in the present experiment. However, if this difficulty relates to both the structure of ORCs and similarity-based interference, it should be attenuated (or eliminated) in this experiment due to dissimilarity of the modified descriptive NP and RC pronoun.

Method

Participants

Forty-four adult native Russian speakers participated in the experiment.

Materials and Design

The experimental items consisted of 48 sets of sentences as in examples 12a-d. The sentences were adjusted from those used in Experiment 1 by replacing
the embedded-clause descriptive NP with a first-person pronoun (half singular, half plural). The first-person pronouns were considered implicitly present in the discourse (referring to the narrator(s)), so they did not require additional context. The sentences were otherwise the same as those in Experiment 1. The counterbalancing procedures also followed those of the previous experiment. Also as in Experiment 1, there were 12 practice items and 48 fillers that were comparable in structure and length with the experimental items (filler: $M = 90.62$ characters; experimental: $M = 90.12$ characters). Each of these filler items included a singular or plural first-person pronoun.

The YES/NO comprehension questions again targeted information expressed in the embedded clause for each item, and there were equal numbers of YES and NO responses. The same comprehension question was used for both the RC and control CC sentences in both SRC and ORC conditions. Half of the questions used passive voice, so that the correct response was unrelated to whether the pronouns in the sentence and question had the same case marking.

Procedure

The procedure was the same as in Experiment 1.

Data analysis

The data from four participants with overall comprehension question ERs of 20% or higher were eliminated from the analysis. The data for the remaining 40 participants (overall ERs: $M = 5.63\%, \ SD = 4.95$) were trimmed and analyzed
using the same procedures as in Experiment 1. RTs below 100 ms or above 4000 ms were discarded (0.34% of the data), and outlier data points were adjusted to two SD units above and below the participant’s mean for each region, affecting 5.06% of the data. As in Experiment 1, the RT analyses were conducted over the six regions of the embedded clauses. The mean RTs for each region of interest are shown in Table 11 and in Figure 10. The ANOVA results for each region of interest and each condition are shown in Table 12.

Table 11. RT Means (SDs) for ORCs and SRCs and their CC Controls (Experiment 2a)

<table>
<thead>
<tr>
<th>Region</th>
<th>Rel. Pro/Comp</th>
<th>Spill R1</th>
<th>RC/CC NP</th>
<th>Spill R2</th>
<th>RC/CC Verb</th>
<th>Spill R3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SRC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... kotoraja.NOM</td>
<td>posle progulki</td>
<td>nas.ACC</td>
<td>sil'no</td>
<td>rasstroila</td>
<td>novostjami,</td>
<td>...</td>
</tr>
<tr>
<td>... who. NOM</td>
<td>after walk</td>
<td>us.ACC</td>
<td>really</td>
<td>upset</td>
<td>with_news,</td>
<td>...</td>
</tr>
<tr>
<td><strong>SRC control CC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... čto</td>
<td>posle progulki</td>
<td>nas.ACC</td>
<td>sil'no</td>
<td>rasstroila</td>
<td>novostjami</td>
<td>...</td>
</tr>
<tr>
<td>... that</td>
<td>after walk</td>
<td>us.ACC</td>
<td>really</td>
<td>upset</td>
<td>with_news,</td>
<td>...</td>
</tr>
<tr>
<td><strong>ORC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... kotoruju.ACC</td>
<td>posle progulki</td>
<td>my.NOM</td>
<td>sil'no</td>
<td>rasstroili</td>
<td>novostjami</td>
<td>...</td>
</tr>
<tr>
<td>... who. ACC</td>
<td>after walk</td>
<td>we.NOM</td>
<td>really</td>
<td>upset</td>
<td>with_news,</td>
<td>...</td>
</tr>
<tr>
<td><strong>ORC control CC</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... čto</td>
<td>posle progulki</td>
<td>my.NOM</td>
<td>sil'no</td>
<td>rasstroili</td>
<td>novostjami</td>
<td>...</td>
</tr>
<tr>
<td>... that</td>
<td>after walk</td>
<td>we.NOM</td>
<td>really</td>
<td>upset</td>
<td>with_news,</td>
<td>...</td>
</tr>
<tr>
<td>SRC</td>
<td>562 (150)</td>
<td>801 (320)</td>
<td>555 (122)</td>
<td>588 (180)</td>
<td>725 (272)</td>
<td>942 (321)</td>
</tr>
<tr>
<td>SRC control CC</td>
<td>507 (118)</td>
<td>770 (263)</td>
<td>577 (149)</td>
<td>593 (187)</td>
<td>699 (247)</td>
<td>818 (260)</td>
</tr>
<tr>
<td>ORC</td>
<td>585 (178)</td>
<td>816 (331)</td>
<td>557 (126)</td>
<td>576 (172)</td>
<td>732 (290)</td>
<td>919 (337)</td>
</tr>
<tr>
<td>ORC control CC</td>
<td>519 (105)</td>
<td>799 (306)</td>
<td>528 (97)</td>
<td>590 (178)</td>
<td>739 (277)</td>
<td>885 (320)</td>
</tr>
</tbody>
</table>
Table 12. Analysis of Variance Results for Sentence Type and Embedded Clause Type Conditions and their Interaction (Experiment 2a)

<table>
<thead>
<tr>
<th>Sentence Type (SRC+control CC vs. ORC+control CC)</th>
<th>Emb. Clause Type (RCs vs. control CCs)</th>
<th>Sent. Type X Clause Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1 (1,36)</td>
<td>F2 (1,44)</td>
<td>F1 (1,36)</td>
</tr>
<tr>
<td>Rel. Pro/Comp Region</td>
<td>4.39*</td>
<td>5.95*</td>
</tr>
<tr>
<td>Spill R1 Region</td>
<td>3.03</td>
<td>2.04</td>
</tr>
<tr>
<td>RC/CC NP Region</td>
<td>6.82*</td>
<td>15.43***</td>
</tr>
<tr>
<td>Spill R2 Region</td>
<td>1.20</td>
<td>1.39</td>
</tr>
<tr>
<td>RC/CC Verb Region</td>
<td>2.73</td>
<td>5.33*</td>
</tr>
<tr>
<td>Spill R3 Region</td>
<td>1.73</td>
<td>2.67</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.

Figure 10. RT means for ORCs and SRCs and their CC controls (Experiment 2a).
Results

Comprehension Accuracy

The comprehension question ERs for each condition were as follows:
SRC: 11.88% (SD: 13.33), ORC: 8.96% (SD: 10.05), SRC control CC: 5.83% (SD: 8.05), ORC control CC: 6.25% (SD: 9.00). There was a main effect of clause type, indicating that RCs were generally more difficult to comprehend than CCs (RCs: 10.42%, CCs: 6.04%; |z| = 2.76, p < .01), but there was no effect of sentence type (|z| = 0.23, p = .82), and no interaction (|z| = 0.48, p = .63).

Reading Times

At the onset of the embedded clause (Rel. Pro/Comp), as in Experiment 1, relativizers took longer to process compared to complementizers (main effect of clause type: RCs: 574 ms, CCs: 513 ms; F1 (1, 36) = 19.52, p < .001, F2 (1, 44) = 42.35, p < .001). In this region, there was also a reliable effect of sentence type (SRC and SRC control CC: 535 ms, ORC and ORC control CC: 552 ms; F1 (1, 36) = 4.39, p < .05, F2 (1, 44) = 5.95, p < .05), indicating that ORCs and their controls were read slower than SRCs and their controls. This difference was largely driven by the ORC accusative-case relative pronoun taking longer to process compared to the relativizer/complementizer in the other conditions. Indeed, pairwise comparisons showed that ORCs were read reliably slower than ORC control CCs (F1 (1, 36) = 14.10, p < .001, F2 (1, 44) = 51.27, p < .001) and SRC control CCs (F1 (1, 36) = 19.85, p < .001, F2 (1, 44) = 48.60, p < .001), and
marginally significantly slower than SRCs ($F_1 (1, 36) = 3.62, p = .07, F_2 (1, 44) = 6.68, p < .05$).

At the embedded-clause pronominal NP (RC NP/CC NP1), there was particular processing difficulty for SRC control CC sentences, the only condition for which this region indicated an unexpected embedded-clause word order. Specifically, in this region, there was a main effect of sentence type (SRC and SRC control CC: 566 ms, ORC and ORC control CC: 543 ms; $F_1 (1, 36) = 6.82, p < .05, F_2 (1, 44) = 15.43, p < .001$), indicating generally longer RTs for SRCs and their controls. There was also a significant interaction of sentence type and clause type ($F_1 (1, 36) = 6.80, p < .05, F_2 (1, 44) = 10.28, p < .01$) that reflected the fact that SRC control CC sentences had longer processing times than SRCs, while the difference was in the opposite direction for ORCs and their controls. Pairwise comparisons also indicated that SRC control CCs had significantly longer RTs compared to ORC control CCs ($F_1 (1, 36) = 11.52, p < .01, F_2 (1, 44) = 21.67, p < .001$) and marginally significantly longer RTs compared to SRCs ($F_1 (1, 36) = 3.22, p = .08, F_2 (1, 44) = 3.18, p = .08$) and ORCs ($F_1 (1, 36) = 2.81, p = .10, F_2 (1, 44) = 4.04, p = .05$).

At the embedded-clause verb (RC Verb/CC Verb), there were no indications of integration costs for SRC/ORC sentences. There was only a main effect of sentence type that was significant by items but not by subjects ($F_1 (1, 36) = 2.73, p = .11, F_2 (1, 44) = 5.33, p < .05$), suggesting generally longer
processing times for ORCs and their controls. There were however reliable integration costs for RCs – and for SRCs in particular – in the immediately following region (Spill R3). In this region, there was a main effect of clause type (RCs: 931 ms, CCs: 852 ms; $F_1 (1, 36) = 8.95, p < .01, F_2 (1, 44) = 26.57, p < .001$), with RCs taking longer than CCs, as well as a significant interaction ($F_1 (1, 36) = 14.57, p < .001, F_2 (1, 44) = 6.48, p < .05$), indicating that this effect was particularly strong for SRCs (SRC vs. SRC control CC: $F_1 (1, 36) = 19.42, p < .001, F_2 (1, 44) = 42.73, p < .001$; ORC vs. ORC control CC: $F_1 (1, 36) = 1.27, p = .27, F_2 (1, 44) = 1.80, p = .19$). Importantly, there were no differences between the RC types at or after the verb (all $F$’s < 1.20).

**Discussion**

This experiment investigated Russian first-person pronominal RCs in order to further examine the effects of expectations and memory on the incremental processing of RC sentences, as well as the possible influence of similarity-based interference on the late-stage comprehension of these sentences. The online processing results again indicated two independent sources of difficulty in the incremental processing of RCs – effects early in the clause that are associated with structural expectations as well as effects later in the clause that appear to be related to memory-based integration costs. Furthermore, the comprehension question results revealed comparable late-stage interpretive difficulties for SRC and ORC sentences. This result suggests that the particular
comprehension difficulty for nominal ORCs in Russian (as shown in Experiment 1) depends in part on similarity-based interference.

Consider first the results from the online processing task. At the first region of the embedded clause, in addition to relative pronouns taking longer to process than complementizers due to their length and other properties discussed above, ORC accusative-case relativizers appeared to yield especially long RTs. This ORC effect could be attributed to expectations due to the overall lower frequencies for ORCs vs. SRCs.

Clearer support for expectation-based effects was found at the embedded pronominal NP. As predicted, the RT patterns in this region corresponded to the word order frequency/preference profiles for the pronominal embedded clauses in the test sentences. Specifically, SRC control CCs – the only condition with the dispreferred word order – appeared to take longer to process compared to the other conditions. It is important to reiterate that this pattern of results was dramatically different from that of Experiment 1, which showed inflated processing times in this region for all sentence types other than the ORC control CC, in accordance with the frequency/preference profiles for the nominal embedded clauses examined in that experiment.

A very different pattern of results was found later in the embedded clause. Although there were no reliable effects at the embedded-clause verb, there were processing costs for RC sentences in the immediately following region. These
costs were clearest for SRC sentences, which had longer RTs than their CC controls. However, there was no difference between the RTs for SRCs and ORCs. These results correspond to those of the previous experiment in several important ways. Both showed a pattern of results at/after the verb that was different from the effects at the embedded NP; both showed processing costs for RCs relative to their CC controls; and both revealed comparable processing times for SRCs and ORCs when the number, the type, and the distance between the NPs and their integration site were held constant. This comparable pattern of results can be taken to indicate that effects at the RC verb reflect memory-based integration processes that are largely independent of the influence of structural frequency.

One difference in the findings of these experiments, however, is the timing of these effects. In the present experiment, these integration effects were revealed not at the RC verb, but only in the immediately following region. This difference is again consistent with memory-based accounts of processing difficulty at RC verbs. Specifically, these relatively weak and delayed integration costs at/after RC verb could be attributed to the idea that it is easier to retrieve/integrate a modified descriptive NP over a pronoun/dissimilar NP, as in the present experiment, than over another descriptive NP, as in Experiment 1. As discussed above, according to the DLT, integration over a personal pronoun is easier because its referent is present in the discourse and is therefore more accessible compared to the referent of a full descriptive NP. According to the similarity-based interference account,
on the other hand, the reduced processing times at these verbs in the pronominal RCs would be explained in terms of dissimilarity of the two integrated NPs, where one is a descriptive NP (the modified NP), while the other is a pronoun (RC NP).

Another difference is that in the present experiment, integration effects appeared to be larger for SRCs than for ORCs in relation to their controls. It is important to note that this result is clearly inconsistent with structure-based models of incremental processing costs during the comprehension of RCs, which would predict particular processing difficulty for ORCs. However, it is necessary to consider why the pattern of results went in the opposite direction. One possibility is that the integration costs in these sentences interacted with a scrambling cost that was also cashed out at this verb – a cost that would be relevant for SRC sentences, but not for ORC sentences. If this were correct, however, it would be difficult to explain why comparable effects were not also obtained in Experiment 1, in which the SRCs also involved scrambling. Another possibility is that there was unanticipated processing difficulty for the ORC control CCs that effectively canceled out much of the difference between these sentences and their RC counterparts. One indication of such processing difficulty is that ORC control CCs had significantly longer RTs than SRC control CCs at the embedded verb ($F_1$ (1, 36) = 5.16, $p < .05$, $F_2$ (1, 44) = 5.76, $p < .05$) and in the immediately following region ($F_1$ (1, 36) = 12.62, $p < .01$, $F_2$ (1, 44) = 12.02,
Although the nature of this difficulty is not entirely clear, it is possible that it was triggered by the use of the first-person nominative pronoun in reported speech in ORC control CC sentences, especially when the embedded-clause verb was perceptual (see Kripke, 2011; Roberts, 2015, for more on the use of indexical I). For instance, in the Russian equivalents of sentences like The stripper said that I recognized the waitress by her hair., the reader might be surprised that the reporter of the event (the stripper) knew about the narrator’s perception. This semantic oddity might not have been revealed until the embedded verb because the sentence could have unfolded in a more natural way at that point (e.g., The stripper said that I was a bad person.). This explanation is speculative however, as there was no particular dispreference for these CC types in the acceptability ratings.

More symmetrical processing difficulty for SRCs and ORCs was revealed under the comprehension question measure. That is, the late-stage comprehension difficulty for nominal ORCs in Experiment 1 was attenuated when the modified and RC NPs were of different types – a descriptive NP and a pronoun, respectively. This indicates that the comprehension difficulty for nominal ORCs observed in the previous experiment cannot be attributed to the structural properties of these sentences alone, but rather depends on the interaction of similarity-based interference with these properties.
Experiment 2b

Introduction

Experiment 2b followed up on results of the previous experiment by examining third-person pronominal RC sentences and their corresponding CC sentences, as in 13a-d. In this case, the test sentences required a context that introduced the antecedent of the embedded pronoun.

13. Context sentence for all conditions:
Požlyce sosedki ljubili pospletničat'.
‘Elderly neighbors liked to gossip.’

a. SRC [embedded-clause word order: OV (non-canonical, preferred)]

<table>
<thead>
<tr>
<th>MC Subj</th>
<th>Rel. Pro</th>
<th>Spill R1</th>
<th>RC NP</th>
<th>Spill R2</th>
</tr>
</thead>
</table>
| Hozjajka, [kotoraj.NOM posle progulki ih.ACC sil'no
| Housewife, [who.NOM after walk them.ACC really |
| **RC Verb** | **Spill R3** | **MC Verb** |
| rasstroila | novostjami[,] | legla... |
| upset | with_news[,] | lay... |

‘The housewife, who after the walk really upset them with the news, lay on the couch in the living room.’

b. control CC for SRC [embedded-clause word order: OVS (non-canonical, dispreferred)]

<table>
<thead>
<tr>
<th>MC Subj</th>
<th>MC Verb</th>
<th>Comp</th>
<th>Spill R1</th>
<th>CC NP1</th>
<th>Spill R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hozjajka skazala,</td>
<td>[čto posle progulki ih.ACC sil'no</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housewife said,</td>
<td>[that after walk them.ACC really</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CC Verb</strong></td>
<td><strong>Spill R3</strong></td>
<td><strong>CC NP2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rasstroila</td>
<td>novostjami tetuška.NOM[,]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>upset</td>
<td>with_news aunt.NOM[,]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘The housewife said that after the walk the aunty really upset them with the news.’

c. ORC [embedded-clause word order: SV (canonical, preferred)]

<table>
<thead>
<tr>
<th>MC Subj</th>
<th>Rel. Pro</th>
<th>Spill R1</th>
<th>RC NP</th>
<th>Spill R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hozjajka, [kotoruju.ACC posle progulki oni.NOM sil'no</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housewife, [whom.ACC after walk they.NOM really</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

100
As illustrated in the examples above, these sentences were the same as in Experiment 2a, except that third-person pronouns were used in the embedded clause instead of first-person pronouns. According to the corpus analysis and acceptability ratings, this was again the preferred word order in all but the SRC control CC condition in 13b. The predictions for this experiment were the same as for Experiment 2a.

Method

Participants

Forty-three adult native Russian speakers participated the experiment.
Materials and Design

The experimental items consisted of 48 sets of sentences as in examples 13a-d. The sentences were adjusted from those in Experiments 1 and 2a, by replacing the embedded NP with a third-person pronoun (half singular, with equal numbers of each masculine and feminine; half plural). A context sentence was also provided before the target sentence, which contained the pronoun’s antecedent. For singular pronouns, there was the gender mismatch between the main-clause subject and the embedded pronoun in order to avoid reference ambiguity in CC sentences. The sentences were otherwise the same as those in Experiments 1 and 2a. The counterbalancing procedures also followed those of the previous experiments, and there were again 12 practice items and 48 fillers that were comparable in structure and in length with the experimental items (filler: $M = 90.38$ characters; experimental: $M = 90.13$ characters). These sentences contained a singular (masculine and feminine) or plural third-person pronoun and were preceded by a context sentence introducing that pronoun’s antecedent.

The YES/NO comprehension questions again referred to information expressed in the embedded clause for each item, and there were equal numbers of YES and NO responses. The same comprehension question was used for both the RC and control CC sentences in both SRC and ORC conditions. As in Experiment 2a, half of the questions used passive voice to ensure that the correct response was
unrelated to whether the pronouns in the sentence and question had the same case marking.

Procedure

The procedure was the same as in Experiments 1 and 2a except that a context sentence was displayed in its entirety on the line above each target sentence. The context sentence disappeared when the participant pressed the button to display the first region of the target sentence.

Data analysis

The data from three participants with overall comprehension question ERs of 20% or higher were eliminated from the analysis. The data for the remaining 40 participants (overall ERs: $M = 8.48\%, SD = 4.77$) were trimmed and analyzed using the same procedures as in Experiments 1 and 2a. RTs below 100 ms or above 4000 ms were discarded (0.19% of the data), and outlier data points were adjusted to two $SD$ units above and below the participant’s mean for each region, affecting 5.12% of the data. As in the previous experiments, the RT analyses were conducted over the six regions of the embedded clauses. The mean RTs for each region of interest are shown in Table 13 and in Figure 11. The ANOVA results for each region of interest and each condition are shown in Table 14.
Table 13. RT Means (SDs) for ORCs and SRCs and their CC Controls (Experiment 2b)

<table>
<thead>
<tr>
<th>Region</th>
<th>Rel. Pro/Comp</th>
<th>Spill R1</th>
<th>RC/CC NP</th>
<th>Spill R2</th>
<th>RC/CC Verb</th>
<th>Spill R3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRC</td>
<td>... kotoraja.NOM</td>
<td>posle progulki</td>
<td>ih.ACC</td>
<td>sil'no</td>
<td>rasstroila</td>
<td>novostjami, ...</td>
</tr>
<tr>
<td>SRC</td>
<td>... who. NOM</td>
<td>after walk</td>
<td>them.ACC</td>
<td>really</td>
<td>upset</td>
<td>with_news, ...</td>
</tr>
<tr>
<td>SRC control CC</td>
<td>... čto</td>
<td>posle progulki</td>
<td>ih.ACC</td>
<td>sil'no</td>
<td>rasstroila</td>
<td>novostjami ...</td>
</tr>
<tr>
<td>SRC control CC</td>
<td>... that</td>
<td>after walk</td>
<td>them.ACC</td>
<td>really</td>
<td>upset</td>
<td>with_news ...</td>
</tr>
<tr>
<td>SRC</td>
<td>... kotoruju.ACC</td>
<td>posle progulki</td>
<td>oni.NOM</td>
<td>sil'no</td>
<td>rasstroili</td>
<td>novostjami, ...</td>
</tr>
<tr>
<td>ORC</td>
<td>... who.ACC</td>
<td>after walk</td>
<td>they.NOM</td>
<td>really</td>
<td>upset</td>
<td>with_news, ...</td>
</tr>
<tr>
<td>ORC control CC</td>
<td>... čto</td>
<td>posle progulki</td>
<td>oni.NOM</td>
<td>sil'no</td>
<td>rasstroili</td>
<td>novostjami, ...</td>
</tr>
<tr>
<td>ORC control CC</td>
<td>... that</td>
<td>after walk</td>
<td>they.NOM</td>
<td>really</td>
<td>upset</td>
<td>with_news, ...</td>
</tr>
<tr>
<td>SRC</td>
<td>471 (100)</td>
<td>570 (209)</td>
<td>462 (70)</td>
<td>463 (104)</td>
<td>556 (155)</td>
<td>780 (205)</td>
</tr>
<tr>
<td>SRC control CC</td>
<td>411 (60)</td>
<td>596 (160)</td>
<td>448 (71)</td>
<td>478 (115)</td>
<td>598 (153)</td>
<td>735 (222)</td>
</tr>
<tr>
<td>ORC</td>
<td>468 (86)</td>
<td>597 (210)</td>
<td>465 (70)</td>
<td>456 (95)</td>
<td>567 (155)</td>
<td>761 (196)</td>
</tr>
<tr>
<td>ORC control CC</td>
<td>425 (88)</td>
<td>614 (212)</td>
<td>453 (79)</td>
<td>457 (105)</td>
<td>598 (173)</td>
<td>738 (241)</td>
</tr>
</tbody>
</table>

Figure 11. RT means for ORCs and SRCs and their CC controls (Experiment 2b).
Table 14. Analysis of Variance Results for Sentence Type and Embedded Clause Type Conditions and their Interaction (Experiment 2b)

<table>
<thead>
<tr>
<th></th>
<th>Sentence Type</th>
<th>Emb. Clause Type</th>
<th>Sent Type X Clause Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(SRC+control CC vs. ORC+control CC)</td>
<td>RCs vs. control CCs</td>
<td></td>
</tr>
<tr>
<td>Rel. Pro/Comp Region</td>
<td>$F_1 (1,36)$</td>
<td>$&lt; 1$</td>
<td>$47.13^{***}$</td>
</tr>
<tr>
<td>Spill R1 Region</td>
<td>$&lt; 1$</td>
<td>$5.73^*$</td>
<td>$4.48^*$</td>
</tr>
<tr>
<td>RC/CC NP Region</td>
<td>$&lt; 1$</td>
<td>$&lt; 1$</td>
<td>$3.13$</td>
</tr>
<tr>
<td>Spill R2 Region</td>
<td>$4.31^*$</td>
<td>$5.11^*$</td>
<td>$1.32$</td>
</tr>
<tr>
<td>RC/CC Verb Region</td>
<td>$&lt; 1$</td>
<td>$&lt; 1$</td>
<td>$10.42^{**}$</td>
</tr>
<tr>
<td>Spill R3 Region</td>
<td>$&lt; 1$</td>
<td>$&lt; 1$</td>
<td>$2.29$</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01, ***p < .001.

Results

Comprehension Accuracy

The comprehension question ERs for each condition were as follows:

SRC: 17.71% ($SD: 10.87$), ORC: 12.92% ($SD: 10.33$), SRC control CC: 9.79% ($SD: 9.60$), ORC control CC: 10.00% ($SD: 9.47$). Thus, as in Experiment 2a, RCs were generally more difficult to comprehend than CCs (main effect of clause type: RCs: 15.32%, CCs: 9.90%; $|z| = 3.74$, $p < .001$). Although there here was a numerical trend suggesting particular comprehension difficulty for SRCs, neither the effect of sentence type ($|z| = 1.35$, $p = .18$) nor the interaction of sentence type and clause type ($|z| = 1.50$, $p = .13$) was significant.

Reading Times

At the first region of interest (Rel. Pro/Comp), consistent with previous experiments, relativizers took longer to process than complementizers (main
effect of clause type: RCs: 470 ms, CCs: 418 ms; $F_1 (1, 36) = 47.13, p < .001, F_2 (1, 44) = 45.47, p < .001$. Unlike in Experiment 2a, there was no indication of particular difficulty for ORC relativizers in this region. In the immediately following region (Spill R1), however, there was a main effect of sentence type (SRC and SRC control CC: 583 ms, ORC and ORC control CC: 597 ms; $F_1 (1, 36) = 5.73, p < .05, F_2 (1, 44) = 4.48, p < .05$), indicating that ORCs and their controls were read slower than SRCs and their controls. While this effect might appear to be driven by inflated RTs for ORC control CCs, pairwise comparisons did not reveal a reliable difference between these sentences and SRC control CCs ($F$'s < 1.52). There was however a marginally significant difference suggesting that ORCs were read more slowly than SRCs in this region ($F_1 (1, 36) = 4.05, p = .05, F_2 (1, 44) = 3.82, p = .06$). This difference might be taken to indicate slightly delayed processing difficulty for the ORC accusative-case relativizer due to sensitivity to structural frequency.

At the embedded-clause pronominal NP (RC NP/CC NP1), unlike in the previous experiment, there were no significant differences among the conditions. The only effect that approached significance in this region was the main effect of clause type ($F_2 = 4.66, p < .05, F_1 = 3.13, p = .09$), which suggested that RCs generally took longer than CCs (all other $F$’s < 1). In the immediately following region (Spill R2), however, there was a significant sentence type effect (SRC and SRC control CC: 471 ms, ORC and ORC control CC: 457 ms; $F_1 (1, 36) = 4.31,$
\( p < .05, F_2 (1, 44) = 5.11, p < .05 \), with SRCs and their controls read slower than ORCs and their controls. This effect appeared to be driven by inflated RTs for the only dispreferred structure – SRC control CC. Indeed, pairwise comparisons indicated significantly longer processing times for SRC control CCs compared to ORCs (\( F_1 (1, 36) = 4.97, p < .05, F_2 (1, 44) = 5.55, p < .05 \)) and ORC control CCs (\( F_1 (1, 36) = 4.63, p < .05, F_2 (1, 44) = 4.27, p < .05 \)), and a non-statistically reliable trend toward longer processing times for SRC control CCs relative to SRCs (\( F_1 (1, 36) = 2.75, p = .11, F_2 (1, 44) = 2.39, p = .13 \)).

At the embedded-clause verb (RC Verb/CC Verb), there was a clause type effect, but in the opposite of the predicted direction. That is, RCs were read faster than CCs (RCs: 562 ms, CCs: 598 ms; \( F_1 (1, 36) = 10.42, p < .01, F_2 (1, 44) = 10.11, p < .01 \)). The pattern of results in the immediately following region (Spill R3) was however consistent with the predicted processing costs for RC sentences. Specifically, the main effect of clause type approached significance (RCs: 771 ms, CCs: 737 ms; \( F_1 (1, 36) = 2.29, p = .14, F_2 (1, 44) = 4.93, p < .05 \)), suggesting that RCs took longer to read than CCs in this spillover region. In line with results of Experiment 2a, it appeared that the difference between ORCs and their controls in this region (\( F^2 \)’s < 1) was smaller than between SRCs and their controls (\( F_1 (1, 36) = 3.21, p = .08, F_2 (1, 44) = 7.03, p < .05 \)). Finally, it is important that there were comparable RTs for both SRCs and ORCs at and
immediately after the RC verb (all $F$’s < 1.80), which is consistent with the results of the previous two experiments.

A potential problem with the analysis above relates to the unexpectedly long processing times for CCs at the embedded-clause verb. Specifically, it is possible that integration costs for RCs in the region immediately following this verb were not particularly robust due to the spillover of this unanticipated processing difficulty for CC sentences. Such spillover would have the effect of inflating the RTs for CC control sentences, which were the baseline sentences for evaluating integration costs in RCs. In order to address this issue, a linear mixed effects regression analysis was conducted on the log-transformed RTs in the region immediately following the embedded-clause verb. This analysis included fixed effects of sentence type and clause type as well as log-transformed RT at the embedded-clause verb as a control variable/covariate. The model with the maximal random effects structure leading to convergence yielded a reliable clause type effect ($|t| = 3.75, p < .001$; main effect of sentence type: $|t| = 1.02$) but no interaction of clause type and sentence type ($|t| = .98$), indicating comparable processing costs for SRCs and ORCs relative to their CC controls. It should be noted however that pairwise comparisons using these models again revealed longer processing times only for SRCs relative to their CC counterparts ($|t| = 1.96, p < .05$; ORC vs. ORC control CC: $|t| = 1.04$).
Discussion

This experiment tested third-person pronominal RCs to further examine the expectation effects early in the embedded clause, the independent nature of the integration effects later in the clause, as well as the influence of similarity-based interference on late-stage RC comprehension. Similar to Experiment 2a, the results overall corresponded to expectation-based pattern at the embedded NP, and to memory-based pattern at the RC verbs. The comprehension question results revealed no differences in interpretation accuracy for SRC and ORC sentences, which confirmed the influence of similarity-based interference on nominal ORC comprehension.

At the beginning of the embedded clause, relative pronouns were read slower than complementizers as in the previous two experiments due to their length, referential nature, and other properties discussed earlier. The RTs at ORC accusative-case relativizers were not different from those at the SRC nominative-case relativizers, but in the immediately following region, the ORCs were read slower than SRCs. This was attributed to slightly delayed processing difficulty for the ORC accusative-case relativizer due sensitivity to structural frequency.

Although no reliable effects were revealed at the embedded NP, there were processing costs in the immediately following region for the only dispreferred word order condition – the SRC control CC. While in the previous experiment the expectation effects for this condition were revealed at the first
unexpected word order region – the embedded NP, the delay of this effect in this experiment could be explained by use of context. Particularly, since the embedded third-person pronoun referred to an antecedent presented in the context, this could, at least temporarily, justify the scrambling of this pronoun into the theme position in the left of the clause. Findings in these two regions therefore are in correspondence with the expectation-based pattern of effects and suggest that these effects do not only relate to the frequency/preference profiles of the constructions, but might also be associated with expectations determined by the context and information structure. While more investigation is needed on these context-based expectation effects, interestingly, these effects appear to not completely override the expectations related to overall structural preferences, but to only slightly delay them.

A clearly different pattern of effects was observed at and after the embedded-clause verb. Although the RC integration effects at the verb were in the opposite from the predicted direction, which is discussed in more detail below, immediately after the verb there appeared to be processing costs for RC sentences. Comparable to Experiment 2a, these costs were stronger for SRC sentences compared to ORCs in relation to their corresponding CC controls. More importantly, there was again no difference between the RTs for SRCs and ORCs in both verbal and postverbal regions. In this way, in line with previous two experiments and memory-based accounts, these results (a) showed a different
pattern of effects at/after the verb from that at the embedded NP, (b) revealed RC integration costs relative to their CC controls, and (c) demonstrated comparable processing times for SRCs and ORCs with corresponding word order configurations.

While timing of the RC integration effects (i.e., after the verb) appears to be consistent with Experiment 2a, in this experiment, these effects were revealed not only one region later, but also in the opposite direction at the embedded verb. Similar to the previous experiment, integration over a pronoun/dissimilar element could account for reduction of integration strength compared to that over another descriptive NP like in Experiment 1. In this experiment, however, it appears that this strength was either reduced to the extent that RCs became easier than CCs at the verb, or there was something else adding particular difficulty to CCs in this region. One possible reason why the strength of RC integration was reduced at the verb to such extent might be an additional characteristic in the current experimental design – gender mismatch between the modified and the embedded NPs. A gender feature inflected on the Russian verb serves as an attractor for a particular gender NP, and therefore NP gender mismatch could have a facilitative effect at the retrieval site (see more on influence of gender mismatch on RC processing by children in Belletti, Friedmann, Brunato, & Rizzi, 2012). Note, this should not have affected CC processing as not all arguments were yet available for integration in these clauses at the point of the verb. Another possible reason
for why RCs had advantage over CCs at the verb could be the presence of an extra referent in the context, which may have caused a slowdown in CC sentences. While both CC and RC items had the same number and types of arguments up to the embedded verb region, one more argument (CC NP2) appeared after the verb in CCs. Two similar descriptive NP referents (hozjajka ‘housewife’ and sosedki ‘neighbours’) prior to this point could have caused interference based on similarity and therefore a slowdown at the verb in anticipation of another NP (see more on unexpected influence of context and similarity-based interference in Fedorenko, Piantadosi, & Gibson, 2012). Interestingly, there was no such slowdown in CC processing when the structure did not require linking of the embedded pronoun with an antecedent over another intervening NP (as in Experiments 1 and 2a). In RC processing at the verb, obviously, there could not be any anticipation as all the arguments needed for integration were already presented, so the processes there were integrative in nature only.

It is also important to point out that similar to Experiment 2a, there was a suggestion of larger integration costs for SRCs compared to ORCs in relation to their control CCs. While not consistent with predictions of structure-based theories, this might be an influence of scrambling inside the SRC. This effect, however needs further support, as it was not observed in Experiment 1 and was possibly skewed at least in part by inflated RTs in ORC control CC condition in Experiment 2a. In relation to the latter point, it is important to note that unlike in
the previous experiment, there was no difference in the verbal or postverbal regions between SRC control CCs and ORC control CCs (all $F$’s < 1). This suggests that there was some factor adding particular difficulty to ORC control CCs in the previous experiment, which might have influenced how the RC integration effects were indicated (as was discussed earlier).

Finally, the comprehension question results of this experiment showed that dissimilarity of integrated NPs eliminated particular comprehension difficulty in ORCs compared to SRCs. Therefore, it was further confirmed that it is not just the structure of ORCs that induces comprehension problems, but it is the interaction of their structure with similarity-based interference.

**General Discussion for Experiment 2**

The main findings of both Experiments 2a and 2b further support a hybrid account for RC processing that incorporates expectation-based and memory-based effects during incremental processing. More specifically, these results confirmed that there are two independent sources of difficulty in online processing of RCs – early in the clause these sources relate to the frequency/preference for the constructions, and later in the clause to memory integration costs. While integration effects were reduced in the pronominal RCs in these experiments, the results again showed that when the number of integrated elements, their type, and the distance between these elements and their integration site were held constant, there are no differences between the RC types. Moreover, the late-stage
comprehension difficulty found in nominal but not in pronominal ORCs suggests that it is not just the structure of the ORCs that makes them difficult, but it is their structure in combination with the similarity-based interference. These findings are discussed in more detail below.

At the first region of interest – the relative pronoun/complementizer – besides the effect of relativizers taking longer than complementizers due to their length and other properties detailed earlier, ORC accusative-case relative pronouns were read slower than SRC nominative-case relativizers. This was observed in this region in Experiment 2a and immediately after this region in Experiment 2b. This effect was attributed to expectation if the readers are sensitive to the overall lower ORC vs. SRC frequency.

In line with expectation-based accounts, the results at the first embedded NP largely corresponded to the overall frequency/preference profiles of pronominal constructions with the word orders used in these experiments. Specifically, the only dispreferred condition – SRC control CC – was read slower than other conditions in this first unexpected word order region in Experiment 2a, which did not use context. In Experiment 2b, when this sentence was used in context, this condition was found to be slower than other conditions not at the embedded NP, but in the immediately following region. This delay was attributed to expectations associated with context and information structure. Importantly, the pattern of results in both Experiments 2a and 2b was different than that of
Experiment 1, in which inflated processing times were shown in this region for all sentence types other than the ORC control CC, in accordance with the frequency/preference profiles for the nominal embedded clauses examined in that experiment.

At the embedded verb, there were several important findings that were common for both Experiments 2a and 2b as well as for Experiment 1. First, the effects at the RC verb appeared to be different from those at the embedded NP, which supported the idea of independent sources of difficulty at these two points in the clause. Second, there were RC integration costs at and/or after the verb in all experiments. While these costs were strong and were revealed at and after the verb in Experiment 1 when the extracted NP had to be integrated over another similar descriptive NP, they were not as strong in Experiments 2a and 2b when there was a retrieval over a pronoun. Third, regardless of whether the RCs were nominal or pronominal, the RTs were comparable for SRCs and ORCs when the number, type, and the distance between the integrated NPs and the integration site were held constant. In these ways, the RC processing costs at and/or after the verb were consistent with memory-based theories.

Furthermore, using dissimilar NPs available for integration at the RC verb, Experiments 2a and 2b tested whether particularly low comprehension-question accuracy scores in nominal ORCs observed in Experiment 1 were triggered by the similarity-based interference. The absence of this low ORC vs. SRC
comprehension in pronominal RCs supported the idea that the late-stage comprehension difficulty found in nominal ORCs does not only depend on their structure, but also on the similarity-based interference.

Taken together, these results clearly show independent expectation-based and memory-based sources of difficulty during online RC processing. These sources appear to lead to largely comparable processing times particularly at and after the verb in SRCs and ORCs when they have similar word order configurations, suggesting that their structural differences do not strongly affect RC incremental processing. The difference was, however, found in the late-stage comprehension measures that showed nominal ORCs to be more difficult compared to SRCs despite of their corresponding word orders. While this comprehension difficulty was attributed to combination of ORC structure and similarity-based interference, the question remains if there are other online indications of processing differences between these RC types that were not clearly captured by using SPR methodology. To further investigate this issue, in Experiment 3 presented below, the same nominal RCs that were used in Experiment 1 were tested using eye tracking during reading.
CHAPTER EIGHT:
PROCESSING OF NOMINAL RUSSIAN RCS (EYE TRACKING):

EXPERIMENT 3

Introduction

The results from the SPR experiments indicated two separable effects during the incremental processing of Russian RC sentences: expectation-based effects early in the embedded clause and integration effects later in the clause. The present experiment investigated these effects further using eye tracking. Although RTs in SPR reflect processing time (at least in part), eye tracking provides multiple measures of online comprehension that have been associated with different stages and types of processing. This is important for the present study because Staub’s (2010) eye-tracking investigation into English RCs revealed qualitatively different indications of processing difficulty for ORCs early in the clause and late in the clause, at the RC verb. Specifically, it was found that the effects early in the clause were characterized by a high rate of first-pass regressive eye movements, while those at the RC verb were revealed in the form of longer initial-pass RTs. These very different patterns were taken to reflect independent sources of processing difficulty for ORCs early and late in the RC, which were linked to expectation- and memory-based processes, respectively. The goal of the current eye-tracking experiment is to explore whether the different
effects observed for Russian RC sentences in the SPR experiments above are also manifested in qualitatively different reading patterns.

Furthermore, the comprehension question accuracy scores in Experiment 1 clearly indicated that nominal ORCs were more difficult to understand than SRCs, but this effect was not revealed in RT differences in the SPR task. Therefore, another aim of the present experiment was to investigate if eye tracking – that allows for multiple measures and a more natural way of reading – would provide a clearer picture of the loci of this ORC processing difficulty. To these ends, this experiment was based on the same items that were used in Experiment 1 – nominal RCs and their corresponding CC controls (14a-d, repeated from 11a-d).

14. a. SRC [embedded-clause word order: OV (non-canonical, dispreferred)]

```
<table>
<thead>
<tr>
<th>MC Subj</th>
<th>Rel. Pro</th>
<th>Spill R1</th>
<th>RC NP</th>
<th>Spill R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housewife,</td>
<td>[kotoraja.NOM posle progulki starušku.ACC] sil'no</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

‘The housewife, who after the walk really upset the old lady with the news, lay on the couch in the living room.’

b. control CC for SRC [embedded-clause word order: OVS (non-canonical, dispreferred)]

```
<table>
<thead>
<tr>
<th>MC Subj</th>
<th>MC Verb</th>
<th>Comp</th>
<th>Spill R1</th>
<th>CC NP1</th>
<th>Spill R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housewife said,</td>
<td>[čto posle progulki starušku.ACC] sil'no</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

‘The housewife said that after the walk the aunty really upset the old lady with the news.’
c. ORC [embedded-clause word order: SV (canonical, dispreferred)]

<table>
<thead>
<tr>
<th>MC Subj</th>
<th>Rel. Pro</th>
<th>Spill R1</th>
<th>RC NP</th>
<th>Spill R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hozjajka, [kotoruju.ACC posle progulki staruška.NOM sil'no]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housewife, [whom.ACC after walk old_lady.NOM really]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![RC Verb] [Spill R3] [MC Verb]

rasstroila novostjami[,] legla...
upset with_news[,] lay...

‘The housewife, whom after the walk the old lady really upset with the news, lay on the couch in the living room.’


d. control CC for ORC [embedded-clause word order: SVO (canonical, preferred)]

<table>
<thead>
<tr>
<th>MC Subj</th>
<th>MC Verb</th>
<th>Comp</th>
<th>Spill R1</th>
<th>CC NP1</th>
<th>Spill R2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hozjajka skazala, [čto posle progulki staruška.NOM sil'no]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housewife said, [that after walk old_lady.NOM really]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![CC Verb] [Spill R3] [CC NP2]

rasstroila novostjami tetušku.ACC.]
upset with_news aunty.ACC.]

‘The housewife said that after the walk the old lady really upset the aunty with the news.’

(Index: MC Subj – Matrix-clause Subject; MC Verb – Matrix-clause Verb; Rel. Pro – Relative Pronoun; Comp – Complementizer; Spill R (1, 2, 3) – Spillover Region 1, 2, 3; RC NP – Noun Phrase inside the RC; RC Verb – Verb inside the RC; CC NP – Noun Phrase inside the CC; CC Verb – Verb inside the CC)

The general predictions and the regions of interest were comparable to those of Experiment 1, but several effects were expected that relate specifically to eye-tracking measures. First, as was observed in the previous experiments, processing costs were predicted at relativizers compared to complementizers (due to their length and other properties detailed above). Particular processing difficulty was also predicted for the ORC accusative-case relativizer. As noted above, such costs could be attributed to the relatively low frequency of ORCs, and therefore this ORC relativizer should trigger expectation-based reanalysis.
processes. It is important to note that there were suggestions of this ORC effect at/after relative pronoun in Experiments 2a and 2b, but not in Experiment 1. One reason for these differences might be that the SPR task does not allow for the regressive eye movements that tend to be triggered by reanalysis processes and thus that this task is not sensitive enough to consistently index these processes at the ORC relativizer. In this way, eye tracking might be especially well-suited to the examination of expectation-based processing difficulty at this word.

At the first embedded NP, expectation-based effects were predicted in sentences with dispreferred embedded-clause word orders – that is, in SRCs, SRC control CCs, and ORCs. This pattern of results was observed in a form of longer RTs in Experiment 1. In this eye-tracking experiment, however, if these effects reflect expectation-based processing difficulty and concomitant reanalysis, they should be also revealed in a form of high proportions of first-pass regressive eye movements.

A different pattern of results was predicted for the memory-based integration effects at/after the embedded-clause verb. If these costs relate only to the number of integrated elements, their type, and the distance between these elements and their integration site, they should be comparable for both SRCs and ORCs, as in Experiment 1. If there is particular difficulty for the ORC condition that was not revealed in SPR, then ORCs should be more difficult than SRCs in
these regions. Moreover, consistent with Staub (2010), these memory costs should be revealed in a form of longer first-pass RTs.

Finally, the same comprehension questions as in Experiment 1 were used in this experiment. This allowed for a further test of whether similarity-based interference plays role in the ORC late-stage comprehension in combination with their syntactic structure. If this is the case, low ORC comprehension was expected on these end-of-sentence questions, as was observed in Experiment 1.

Method

Participants

Thirty-four native speakers of Russian participated in the experiment for monetary compensation.

Materials and Design

The materials and design of the experiment were the same as in Experiment 1.

Procedure

Sentences and comprehension questions were presented on two lines of text (with standard punctuation and capitalization) in 14-point Courier font on a 19-inch CRT monitor. The monitor screen was located approximately 60 cm from subjects’ eyes, and a chin rest was used to minimize head movements. Participants were asked to read the sentences at their normal pace and comprehend well enough to answer the question presented after each item. Eye
movements were recorded with an EyeLink 1000 (SR Research) eye-tracker, which monitors the movement of the right eye (although viewing was binocular) at a sample rate of 1000 Hz. Items were presented in a different random order for each subject in sets of 12, with a short break after each set. The eye-tracker was calibrated before each set and then recalibrated as necessary. At the beginning of each trial, a calibration dot appeared on the far left side of the screen. The participants were instructed to look at this dot, which allowed the experimenter to assess whether the eye-tracker was correctly calibrated. The experimenter then displayed the sentence. Participants read the sentence silently and then pressed a button on a gamepad when finished. There was 15-second timeout for each sentence. After the participant finished reading the sentence, the sentence disappeared from the screen, and a YES/NO comprehension question was displayed. The right button on the gamepad was used for YES responses, and the left button was used for NO responses. Accuracy feedback was provided immediately after the response, and then the next trial began. At the beginning of the experiment, there were 12 practice items that were similar in terms of structure to the filler sentences, with comparable comprehension questions.

Data Analysis

The analyses of the reading measures were conducted by separating each sentence into regions. These regions were the same as those in Experiment 1 (as indicated in 14a-d) for the embedded clause. Since readers could return to
previous parts of the sentence in this experiment, the first region (MC Subj) of the sentences, which contained the head of the MC subject NP, was also included in the analysis. The second word/region in CC controls, the MC verb (MC Verb) (e.g., Hozjajka skazala,... ‘The housewife said, …’) did not directly correspond to any of the RC regions, so it was not included in the statistical analysis.

Five eye-tracking measures are reported: first fixation duration, first-pass time, regression-path duration, first-pass regression proportion, and second-pass time. First fixation duration refers to the duration of the initial fixation in a region, provided that the region was not skipped on the first pass through the sentence. First-pass time is the sum of the fixation durations in a region after entering that region until leaving it in any direction (again, not counting cases in which the region was skipped on the first pass). Regression-path duration (also known as go-past time) is the sum of all fixation durations after entering a region until leaving that region to the right. This measure includes regressive fixations to previous regions. First-pass regression proportion refers to the proportion of trials on which the reader made a regressive eye movement from a given region to a previous region during the initial pass through the sentence. Second-pass time is the sum of all regressive fixation durations in a region. (If there were no regressive fixations, it was coded as zero.) While first fixation duration, first-pass time, regression-path duration, and first-pass regression proportion can be taken to reflect processing disruptions early in reading, second-pass time includes
indications of processing difficulty that occur relatively late in reading comprehension.

As in the previous experiments, the reading time measures in each region were analyzed with separate ANOVAs by subjects ($F_1$) and by items ($F_2$), with sentence type (SRC, ORC) and clause type (RC, control CC) as repeated measures and list/item group as a grouping factor. Because the dependent measure for first-pass regression proportions was categorical, these data were analyzed using logistic mixed-effects models according to the procedures for the analysis of comprehension question accuracy in the previous experiments. The same models were used to analyze comprehension accuracy in the present experiment as well.

The data sets from two participants who had more than five 15-second timeouts on the experimental items were excluded from the analysis. The data for the remaining 32 participants, all of whom had overall comprehension ERs of 30% or less ($M = 14.28\%, SD = 5.43$), were analyzed as follows: The data for trials on which participants reached the timeout, or had fixations that landed outside of the interest areas due to unfocused eye movements were excluded from the analyses. This led to the exclusion of the data for 3.45% of the trials. Before analyzing the eye-movement data, fixations that were less than 80 ms in duration and within one character of the previous or subsequent fixation were combined with this neighboring fixation. Any remaining fixations that were shorter than 80
ms or longer than 1000 ms were deleted. These cleaning procedures resulted in loss of 1.62% of the data. The means for each measure are presented (by condition and region) in Table 15. The results of the statistical analyses for these measures are presented in Table 16.

Table 15. Means (SDs) for Five Eye Tracking Measures by Condition and Region (Experiment 3)

<table>
<thead>
<tr>
<th>Region</th>
<th>MC Subj</th>
<th>Rel. Pro/Comp</th>
<th>Spill R1</th>
<th>RC/CC NP</th>
<th>Spill R2</th>
<th>RC/CC Verb</th>
<th>Spill R3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRC</td>
<td>Hożyjajka, kotoraja.NOM</td>
<td>posle progulki</td>
<td>starušku.ACC</td>
<td>s'il no really</td>
<td>rasstroila</td>
<td>upset</td>
<td>novostjami, …</td>
</tr>
<tr>
<td></td>
<td>Housewife, who. NOM</td>
<td>after walk</td>
<td>old_lady.ACC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRC control CC</td>
<td>Hożyjajka, … čto</td>
<td>posle progulki</td>
<td>starušku.ACC</td>
<td>s'il no really</td>
<td>rasstroila</td>
<td>upset</td>
<td>novostjami, …</td>
</tr>
<tr>
<td></td>
<td>Housewife, … that</td>
<td>after walk</td>
<td>old_lady.ACC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORC</td>
<td>Hożyjajka, kotoruju.ACC</td>
<td>posle progulki</td>
<td>staruška.NOM</td>
<td>s'il no really</td>
<td>rasstroila</td>
<td>upset</td>
<td>novostjami, …</td>
</tr>
<tr>
<td></td>
<td>Housewife, who.ACC</td>
<td>after walk</td>
<td>old_lady. NOM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORC control CC</td>
<td>Hożyjajka, … čto</td>
<td>posle progulki</td>
<td>staruška.NOM</td>
<td>s'il no really</td>
<td>rasstroila</td>
<td>upset</td>
<td>novostjami, …</td>
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<tr>
<td></td>
<td>Housewife, … that</td>
<td>after walk</td>
<td>old_lady. NOM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First fixation duration</td>
<td>SRC</td>
<td>204 (20)</td>
<td>208 (37)</td>
<td>220 (33)</td>
<td>251 (32)</td>
<td>237 (35)</td>
<td>245 (25)</td>
</tr>
<tr>
<td></td>
<td>SRC control CC</td>
<td>209 (19)</td>
<td>186 (30)</td>
<td>213 (28)</td>
<td>243 (32)</td>
<td>246 (37)</td>
<td>250 (35)</td>
</tr>
<tr>
<td></td>
<td>ORC</td>
<td>206 (25)</td>
<td>204 (30)</td>
<td>226 (32)</td>
<td>249 (35)</td>
<td>241 (34)</td>
<td>250 (35)</td>
</tr>
<tr>
<td></td>
<td>ORC control CC</td>
<td>207 (21)</td>
<td>185 (34)</td>
<td>215 (36)</td>
<td>253 (33)</td>
<td>250 (35)</td>
<td>258 (40)</td>
</tr>
<tr>
<td>First-pass time</td>
<td>SRC</td>
<td>510 (149)</td>
<td>260 (66)</td>
<td>546 (131)</td>
<td>447 (121)</td>
<td>318 (101)</td>
<td>388 (99)</td>
</tr>
<tr>
<td></td>
<td>SRC control CC</td>
<td>468 (110)</td>
<td>193 (37)</td>
<td>561 (124)</td>
<td>445 (130)</td>
<td>348 (99)</td>
<td>412 (126)</td>
</tr>
<tr>
<td></td>
<td>ORC</td>
<td>502 (147)</td>
<td>251 (45)</td>
<td>532 (131)</td>
<td>394 (103)</td>
<td>342 (102)</td>
<td>382 (106)</td>
</tr>
<tr>
<td></td>
<td>ORC control CC</td>
<td>453 (127)</td>
<td>190 (34)</td>
<td>552 (112)</td>
<td>409 (95)</td>
<td>340 (73)</td>
<td>423 (139)</td>
</tr>
<tr>
<td>Regression-path duration</td>
<td>SRC</td>
<td>–</td>
<td>320 (93)</td>
<td>650 (210)</td>
<td>608 (190)</td>
<td>633 (205)</td>
<td>518 (134)</td>
</tr>
<tr>
<td></td>
<td>SRC control CC</td>
<td>–</td>
<td>233 (68)</td>
<td>634 (96)</td>
<td>527 (154)</td>
<td>530 (194)</td>
<td>590 (179)</td>
</tr>
<tr>
<td></td>
<td>ORC</td>
<td>–</td>
<td>346 (133)</td>
<td>689 (182)</td>
<td>487 (134)</td>
<td>463 (141)</td>
<td>436 (131)</td>
</tr>
<tr>
<td></td>
<td>ORC control CC</td>
<td>–</td>
<td>227 (70)</td>
<td>636 (151)</td>
<td>512 (106)</td>
<td>430 (121)</td>
<td>531 (177)</td>
</tr>
<tr>
<td>First-pass regression proportion</td>
<td>SRC</td>
<td>–</td>
<td>.11 (.12)</td>
<td>.12 (.13)</td>
<td>.23 (.17)</td>
<td>.32 (.18)</td>
<td>.13 (.10)</td>
</tr>
<tr>
<td></td>
<td>SRC control CC</td>
<td>–</td>
<td>.05 (.11)</td>
<td>.08 (.12)</td>
<td>.12 (.10)</td>
<td>.22 (.14)</td>
<td>.20 (.13)</td>
</tr>
<tr>
<td></td>
<td>ORC</td>
<td>–</td>
<td>.13 (.13)</td>
<td>.18 (.18)</td>
<td>.14 (.10)</td>
<td>.16 (.12)</td>
<td>.08 (.10)</td>
</tr>
<tr>
<td></td>
<td>ORC control CC</td>
<td>–</td>
<td>.06 (.10)</td>
<td>.10 (.16)</td>
<td>.16 (.11)</td>
<td>.15 (.09)</td>
<td>.14 (.12)</td>
</tr>
<tr>
<td>Second-pass time</td>
<td>SRC</td>
<td>528 (296)</td>
<td>362 (197)</td>
<td>691 (347)</td>
<td>475 (216)</td>
<td>304 (166)</td>
<td>197 (109)</td>
</tr>
<tr>
<td></td>
<td>SRC control CC</td>
<td>434 (182)</td>
<td>44 (51)</td>
<td>423 (266)</td>
<td>458 (234)</td>
<td>292 (147)</td>
<td>264 (133)</td>
</tr>
<tr>
<td></td>
<td>ORC</td>
<td>532 (242)</td>
<td>363 (168)</td>
<td>538 (260)</td>
<td>338 (190)</td>
<td>234 (154)</td>
<td>190 (125)</td>
</tr>
<tr>
<td></td>
<td>ORC control CC</td>
<td>464 (180)</td>
<td>42 (42)</td>
<td>422 (219)</td>
<td>367 (196)</td>
<td>234 (125)</td>
<td>267 (124)</td>
</tr>
</tbody>
</table>
### Table 16. Statistical Analyses Results for Five Eye Tracking Measures by Region (Experiment 3)

<table>
<thead>
<tr>
<th></th>
<th>Sentence Type (SRC + control CC vs. ORC + control CC)</th>
<th>Clause Type</th>
<th>Sent. Type x Clause Type</th>
<th>RCs vs. control CCs</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>F1 (1,28)</td>
<td>F2 (1,44)</td>
<td>F1 (1,28)</td>
<td>F2 (1,44)</td>
</tr>
<tr>
<td><strong>MC Subj Region</strong></td>
<td></td>
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</tr>
<tr>
<td>First fixation duration</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>1.26</td>
<td>1.20</td>
</tr>
<tr>
<td>First-pass time</td>
<td>1.02</td>
<td>1.02</td>
<td>12.18**</td>
<td>14.15***</td>
</tr>
<tr>
<td>Regression-path duration</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Regression proportion†</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>6.03*</td>
<td>15.76***</td>
</tr>
<tr>
<td>Second-pass time</td>
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<td></td>
<td></td>
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<tr>
<td><strong>Rel. Pro/Comp Region</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First fixation duration</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>14.43***</td>
<td>33.64***</td>
</tr>
<tr>
<td>First-pass time</td>
<td>1.06</td>
<td>&lt;1</td>
<td>59.12***</td>
<td>170.14***</td>
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<td>Regression-path duration</td>
<td>1.11</td>
<td>1.14</td>
<td>36.70***</td>
<td>58.72***</td>
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<td>[z] = 3.79***</td>
<td>[z] = 0.49</td>
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<td>&lt;1</td>
<td>130.20***</td>
<td>600.25***</td>
</tr>
<tr>
<td><strong>Spill R1 Region</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>First fixation duration</td>
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<td>1.22</td>
<td>5.44*</td>
<td>6.64*</td>
</tr>
<tr>
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<td>1.33</td>
<td>1.47</td>
</tr>
<tr>
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<td>1.78</td>
<td>1.61</td>
<td>3.67</td>
<td>3.34</td>
</tr>
<tr>
<td>Regression proportion†</td>
<td>[z] = 2.38*</td>
<td>[z] = 3.54***</td>
<td>[z] = 0.82</td>
<td></td>
</tr>
<tr>
<td>Second-pass time</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>130.20***</td>
<td>600.25***</td>
</tr>
<tr>
<td><strong>RC/CC NP Region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First fixation duration</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
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<tr>
<td>First-pass time</td>
<td>1.54***</td>
<td>12.98***</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Regression-path duration</td>
<td>13.63***</td>
<td>12.74***</td>
<td>2.66</td>
<td>3.12</td>
</tr>
<tr>
<td>Regression proportion†</td>
<td>[z] = 1.18</td>
<td>[z] = 2.60**</td>
<td>[z] = 3.27**</td>
<td></td>
</tr>
<tr>
<td>Second-pass time</td>
<td>24.59***</td>
<td>30.67***</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
<tr>
<td><strong>Spill R2 Region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First fixation duration</td>
<td>1.04</td>
<td>&lt;1</td>
<td>3.05</td>
<td>3.35</td>
</tr>
<tr>
<td>First-pass time</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>3.97</td>
<td>2.66</td>
</tr>
<tr>
<td>Regression-path duration</td>
<td>37.51***</td>
<td>31.98***</td>
<td>13.95***</td>
<td>8.00**</td>
</tr>
<tr>
<td>Regression proportion†</td>
<td>[z] = 5.63***</td>
<td>[z] = 2.73**</td>
<td>[z] = 1.56</td>
<td></td>
</tr>
<tr>
<td>Second-pass time</td>
<td>16.14***</td>
<td>14.71***</td>
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<td>&lt;1</td>
</tr>
<tr>
<td><strong>RC/CC Verb Region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First fixation duration</td>
<td>3.38</td>
<td>2.27</td>
<td>1.47</td>
<td>3.15</td>
</tr>
<tr>
<td>First-pass time</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>7.57*</td>
<td>16.85***</td>
</tr>
<tr>
<td>Regression-path duration</td>
<td>10.16***</td>
<td>13.64***</td>
<td>13.15**</td>
<td>23.58***</td>
</tr>
<tr>
<td>Regression proportion†</td>
<td>[z] = 3.04**</td>
<td>[z] = 3.71***</td>
<td>[z] = 0.38</td>
<td></td>
</tr>
<tr>
<td>Second-pass time</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>17.26***</td>
<td>26.82***</td>
</tr>
<tr>
<td><strong>Spill R3 Region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>First fixation duration</td>
<td>1.02</td>
<td>1.15</td>
<td>&lt;1</td>
<td>&lt;1</td>
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<tr>
<td>First-pass time</td>
<td>2.18</td>
<td>1.52</td>
<td>16.27***</td>
<td>20.80***</td>
</tr>
<tr>
<td>Regression-path duration</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>3.00</td>
<td>16.44***</td>
</tr>
<tr>
<td>Regression proportion†</td>
<td>[z] = 1.12</td>
<td>[z] = 2.10*</td>
<td>[z] = 1.40</td>
<td></td>
</tr>
<tr>
<td>Second-pass time</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>30.77***</td>
<td>40.14***</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.
†First-pass regression proportion
Results

Comprehension Accuracy

The mean ERs for each condition were as follows: SRC: 20.18% (SD: 11.95), ORC: 27.59% (SD: 17.04), SRC control CC: 25.23% (SD: 16.04), ORC control CC: 17.20% (SD: 12.69). Although there were no main effects (sentence type: |z| = 0.77, p = .44; clause type: |z| = 0.94, p = .35), there was a significant interaction of sentence type and clause type (|z| = 3.13, p < .01), indicating that only ORCs were significantly more difficult than their control CCs (|z| = 3.57, p < .001; SRCs vs SRC control CCs: |z| = 1.27, p = .21). Importantly also, ERs for ORCs were significantly higher than for SRCs (|z| = 2.20, p < .05).

First-Pass Measures

Figure 12 presents mean first fixation durations, Figure 13 shows mean first-pass times, Figure 14 presents mean regression-path durations, and Figure 15 shows mean first-pass regression proportions. At the first three regions of the sentence there were indications that RCs were more difficult to process compared to CCs. At the MC subject (MC Subj), the first-pass time measure yielded longer RTs for RCs compared to their control CCs (RCs: 506 ms, CCs: 461 ms; F1 (1, 28) = 12.18, p < .01, F2 (1,44) = 14.15, p < .001). This early effect could be attributed to the parafoveal preview of the immediately following relative pronoun in the RCs that was co-indexed with this NP.
Figure 12. Mean first fixation durations (Experiment 3).

Figure 13. Mean first-pass times (Experiment 3).
Figure 14. Mean regression-path durations (Experiment 3).

Figure 15. Mean first-pass regression proportions (Experiment 3).
The second region of interest was relative pronoun/complementizer (Rel. Pro/Comp). There were longer times in RCs compared to CCs in this region under the first fixation duration measure (RCs: 206 ms, CCs: 186 ms; $F_1 (1,28) = 14.43$, $p < .001$, $F_2 (1,44) = 33.64$, $p < .001$), first-pass time (RCs: 256 ms, CCs: 192 ms; $F_1 (1,28) = 59.12$, $p < .001$, $F_2 (1,44) = 170.14$, $p < .001$), regression-path duration (RCs: 333 ms, CCs: 230 ms; $F_1 (1,28) = 36.70$, $p < .001$, $F_2 (1,44) = 58.72$, $p < .001$), as well as a higher proportion of first-pass regressions (RCs: .12, CCs: .06; $|z| = 3.79$, $p < .001$). As in the previous experiments, the processing difficulty in the relative pronouns could be attributed to their length, referential nature and being the point of introduction to the RC.

In the immediately following region (Spill R1), the effects were similar under first fixation duration (RCs: 223 ms, CCs: 214 ms; $F_1 (1,28) = 5.44$, $p < .05$, $F_2 (1,44) = 6.64$, $p < .05$) as well as first-pass regression proportion (RCs: .15, CCs: .09; $|z| = 3.54$, $p < .001$). In addition, ORCs and their control CCs had significantly more first-pass regressions than SRCs and their controls (SRC and SRC control CC: .10, ORC and ORC control CC: .14; $|z| = 2.38$, $p < .05$). It appears that these effects were mainly driven by ORCs, which had significantly more regressions than SRCs ($|z| = 2.49$, $p < .05$), ORC control CCs ($|z| = 2.75$, $p < .01$), and SRC control CCs ($|z| = 2.52$, $p < .05$). This could be attributed to a delayed effect from the previous accusative-case relative pronoun region.
At the embedded-clause NP (RC NP/CC NP1), the pattern of results changed according to the frequencies of the constructions at this point in the sentence. Non-canonical SRCs and in their control CCs, both of which had scrambled accusative-case NPs in this region, were read slower than the constructions with the nominative-case NPs under first-pass time (SRC and SRC control CC: 446 ms, ORC and ORC control CC: 402 ms; $F_1 (1,28) = 15.41, p < .001, F_2 (1,44) = 12.98, p < .001$) and regression-path duration (SRC and SRC control CC: 568 ms, ORC and ORC control CC: 500 ms; $F_1 (1,28) = 13.63, p < .001, F_2 (1,44) = 12.74, p < .001$). Under regression-path duration, there was also an interaction in this region ($F_1 (1,28) = 5.57, p < .05, F_2 (1,44) = 13.32, p < .001$), indicating particularly long RTs for SRC sentences. Pairwise comparisons showed that SRCs were significantly slower than their control CCs ($F_1 (1,28) = 6.41, p < .05, F_2 (1,44) = 13.12, p < .001$), but ORCs were not slower than their controls ($F_1 (1,28) = 1.06, p = .31, F_2 (1,44) = 1.36, p = .25$). Comparably, RCs had higher proportion of first-pass regressions than CCs (RCs: .19, CCs: .14; $|z| = 2.60, p < .01$), and there was a significant interaction ($|z| = 3.27, p < .01$) that was driven by an especially high number of regressions for SRCs. Pairwise comparisons indicated that first-pass regression proportion was significantly higher for SRCs than for their control CCs ($|z| = 3.32, p < .001$), but not for ORCs compared to their controls ($|z| = 0.47, p = .64$).
In the region following the NP (Spill R2), processing costs for SRCs and their control CCs continued under the regression-path duration (SRC and SRC control CC: 582 ms, ORC and ORC control CC: 447 ms; $F_1(1,28) = 37.51, p < .001, F_2(1,44) = 31.98, p < .001$) and first-pass regression proportion (SRC and SRC control CC: .27, ORC and ORC control CC: .16; $|z| = 5.63, p < .001$). These two measures also showed a clause type effect in this region with RCs taking longer to process than CCs (regression-path duration: RCs: 548 ms, CCs: 480 ms; $F_1(1,28) = 13.95, p < .001, F_2(1,44) = 8.00, p < .01$; first-pass regression proportion: RCs: .24, CCs: .19; $|z| = 2.73, p < .01$). These effects appeared to be driven in large part by continuation of especially high processing costs for SRCs. Pairwise comparisons showed that SRCs were significantly more difficult than their control CCs (regression-path duration: $F_1(1,28) = 8.91, p < .01, F_2(1,44) = 6.00, p < .05$; first-pass regression proportion: $|z| = 3.19, p < .01$) but ORCs were not different from their control CCs (regression-path duration: $F_1(1,28) = 1.62, p = .21, F_2(1,44) = 2.52, p = .12$; first-pass regression proportion: $|z| = 0.76, p = .45$).

These effects of SRCs and their control CCs having higher processing costs than ORCs and their controls continued into the embedded-clause verb region (RC Verb/CC Verb) under regression-path duration (SRC and SRC control CC: 554 ms, ORC and ORC control CC: 484 ms; $F_1(1,28) = 10.16, p < .01, F_2(1,44) = 13.64, p < .001$) and under first-pass regression proportion measure (SRC
and SRC control CC: .17, ORC and ORC control CC: .11; \(|z| = 3.04, p < .01\). An independent effect of clause type was also revealed at this point in the sentence, with CCs taking longer to process compared to RCs. This processing disruption was demonstrated under first-pass time (RCs: 385 ms, CCs: 418 ms; \(F_1 (1,28) = 7.57, p < .05, F_2 (1,44) = 16.85, p < .001\)), regression-path duration (RCs: 477 ms, CCs: 561 ms; \(F_1 (1,28) = 13.15, p < .01, F_2 (1,44) = 23.58, p < .001\)), and first-pass regression proportion measure (RCs: .21, CCs: .34; \(|z| = 3.71, p < .001\)).

A very different pattern of results was found at the region immediately after the embedded-clause verb. Under the first-pass measure, there was a delayed effect in the predicted direction of RCs taking longer than CCs (RCs: 542 ms, CCs: 479 ms; \(F_1 (1,28) = 16.27, p < .001, F_2 (1,44) = 20.80, p < .001\)). While RTs were comparable for both RCs in this region (\(F\)'s < 1), there was a larger difference between SRCs and their controls \((F_1 (1,28) = 19.92, p < .001, F_2 (1,44) = 32.62, p < .001\)) than between ORCs and their controls \((F_1 (1,28) = 2.20, p = .15, F_2 (1,44) = 1.53, p = .22\)), which was also indicated by the significant interaction \((F_1 (1,28) = 6.59, p < .05, F_2 (1,44) = 6.87, p < .05\)). Note that this larger difference between SRCs and their controls could be driven by ORC control CCs taking unexpectedly longer than SRC control CC sentences \((F_1 (1,28) = 10.24, p < .01, F_2 (1,44) = 8.74, p < .01\)). In addition, there was a clause type effect under the first-pass regression proportion measure with more regressions out of RCs than CCs (RCs: .29, CCs: .25; \(|z| = 2.10, p < .05\)). The
pairwise comparisons showed, however, that this effect was largely driven again by SRCs, as they had more regressions than their control CCs ($|z| = 1.20, p < .05$) and than ORCs ($|z| = 2.13, p < .05$), but ORCs were not different from their controls ($|z| = 0.28, p = .78$).

*Late Measures*

Figure 16 presents mean second-pass times. These late measures also revealed clause type effects with RCs taking longer than CCs in the first three regions – the MC subject (RCs: 530 ms, CCs: 449 ms; $F_1 (1,28) = 6.03, p < .05$, $F_2 (1,44) = 15.76, p < .001$), relative pronoun/complementizer (RCs: 363 ms, CCs: 43 ms; $F_1 (1,28) = 130.20, p < .001$, $F_2 (1,44) = 600.25, p < .001$), and the immediately following spillover region (Spill R1: RCs: 615 ms, CCs: 423 ms; $F_1 (1,28) = 37.52, p < .001$, $F_2 (1,44) = 44.12, p < .001$). In this spillover region, while both SRCs and ORCs had significantly longer times than their controls (SRC vs. SRC control CC: $F_1 (1,28) = 49.26, p < .001$, $F_2 (1,44) = 29.16, p < .001$; ORC vs. ORC control CC: $F_1 (1,28) = 13.21, p < .01$, $F_2 (1,44) = 13.02, p < .001$), these times were particularly long for SRCs. This was indicated by a significant main effect of sentence type ($F_1 (1,28) = 8.00, p < .01$, $F_2 (1,44) = 7.32, p < .01$) and a significant interaction of sentence and clause type ($F_1 (1,28) = 23.08, p < .001$, $F_2 (1,44) = 5.12, p < .05$). Pairwise comparisons also revealed longer times for SRCs compared to ORCs ($F_1 (1,28) = 17.90, p < .001$, $F_2 (1,44) = 10.56, p < .01$), but no difference between their controls ($F^2$s < 1).
At the embedded-clause NP (RC NP/CC NP1) as well as in the immediately following region (Spill R2), second-pass times were also inflated in SRCs and their controls (RC NP/CC NP1: SRC and SRC control CC: 467 ms, ORC and ORC control CC: 353 ms; $F_1 (1,28) = 24.59, p < .001, F_2 (1,44) = 30.67, p < .001$; Spill R2: SRC and SRC control CC: 298 ms, ORC and ORC control CC: 234 ms; $F_1 (1,28) = 16.14, p < .001, F_2 (1,44) = 14.71, p < .001$). At the embedded-clause verb (RC Verb/CC Verb) and in the immediately following it region (Spill R3), there was a clause type effect, but in the opposite direction of that which was observed in Experiment 1 – with CCs taking longer than RCs (RC
Verb/CC Verb: RCs: 194 ms, CCs: 262 ms; \( F_1 (1,28) = 17.26, p < .001, F_2 (1,44) = 26.82, p < .001 \); Spill R3: RCs: 160 ms, CCs: 250 ms; \( F_1 (1,28) = 30.77, p < .001, F_2 (1,44) = 40.14, p < .001 \).

Discussion

The pattern of results with the multiple measures of the eye-tracking methodology provided new insight into RC processing by showing qualitatively different reading patterns for expectation effects and integration effects. Specifically, early in the clause, there were effects after the ORC relativizer both in a form of longer RTs and first-pass regressions. Also early in the embedded clause – starting with the unexpected word order region – there were processing disruptions mainly in a form of high number of first-pass regressions for SRCs, which had especially infrequent/dispreferred word order. Finally, very late in the clause – after the verb – first-pass times showed longer processing times for RCs. There were no indications that ORCs were more difficult than SRCs during incremental processing at the verb, but late-stage comprehension question measure again showed ORCs to be more difficult than SRCs.

First, it is important to discuss in more detail how these different reading patterns index incremental processing mechanisms. At the MC NP and at the beginning of the embedded clause both under early and late measures, the results showed that RCs were more difficult than CCs. Similar to the previous experiments, these effects were attributed to the processing costs associated with
the introduction to the RC, as well as greater length of relative pronouns
compared to complementizers, and their reference to the MC NP. Importantly,
ORCs were found to be particularly challenging immediately after the accusative-
case relative pronoun. This difficulty could be triggered by reanalysis due to
lower frequency of ORCs vs. SRCs and therefore lower expectations for them.
While there was a suggestion of this effect under SPR methodology in
Experiments 2a and 2b, but not in Experiment 1, eye tracking was able to fully
show this effect because it was revealed not just in a form of longer RTs, but also
in a form of regressive eye movements.

At and after the embedded NP, there were particularly strong effects for
SRCs and their control CCs that appeared to be triggered under the early
measures and continue into the late measures. These sentences had accusative-
case NPs that were scrambled to the position before the verb – a word order that
was particularly dispreferred at this point in the sentence. Interestingly, ORCs in
this experiment were also in their dispreferred word order configuration, but it
appears that the eye-tracking methodology was sensitive to processing costs
associated with different degrees of frequency/preference of these constructions.
The nominal SRCs with non-canonical word order in the embedded clause were
especially infrequent in the corpus, as they constituted only 1.2% of all SRCs
(compared to the ORCs used in this experiment that were 21.4% of all ORCs).
The SRC’s word order was also more marked in the null context compared to that
of the ORCs, which was demonstrated by lower acceptability ratings for these sentences (non-canonical SRCs: 3.14 ($SD$: 0.89) vs. canonical ORCs: 3.73 ($SD$: 0.73); $F_1 = 38.74, p < .001$, $F_2 = 78.92 p < .001$). While this experiment (as well as Experiment 1) was designed such that both SRC and ORC constructions were used in their less frequent/less preferred word order configurations, and no reliable difference between them at this embedded NP was found in SPR Experiment 1, eye tracking showed SRCs to be particularly difficult in this region. One of the reasons for this difference in the patterns of results of the two experiments might be that this SRC expectation-based effect was again revealed not just in a form of longer RTs, but also in a form of first-pass regressive eye movements, which SPR was not able to show. These effects for SRCs as well as for their controls continued into the verbal and postverbal regions, but importantly not in a form of first-pass or second-pass times, but only in a form of first-pass regressions, which is consistent with effects related to expectation-based processes. While in SPR Experiments 2a and 2b there were suggestions for integration costs in SRCs to be higher than in ORCs in relation to their controls, this eye-tracking experiment appeared to demonstrate this effect further due to ability to measure processes related to regressions. However, this pattern suggests that the SRC processing difficulty later in the clause was consistent with continuation of the expectation-based effects and was not a reflection of the difference in SRC vs. ORC integration processes.
A different pattern of results was revealed under the first-pass time measure at/after the embedded verb. Although CCs were read slower than RCs at the verb, which is discussed below, the effect immediately after the verb under this measure showed integration costs for RCs. This pattern was different from that in Experiment 1, but it was similar to that of Experiment 2b. The RTs under this early measure in both SRCs and ORCs again did not differ. The findings from these two regions were therefore largely consistent with the pattern found in the previous SPR experiments: (a) the integration effects were separable from expectation effects earlier in the clause, (b) both RC types showed processing costs relative to their CC controls (in this case after the verb), and (c) SRCs and ORCs with these corresponding word order configurations had comparable RTs.

While the same nominal items were tested in Experiment 1, much stronger RC integration costs were obtained at and after the verb under SPR compared to eye tracking. Since the methodology and therefore the mode of sentence presentation (region by region vs. entire sentence) was the only difference between the two experiments, the nature of these integration strength differences might relate to task-specific processing demands. It is possible that the ability to see the entire sentence with all its arguments on the screen allowed for a less costly RC integration at the verb, or created more difficulty for CCs. Although more investigation is needed for any definite conclusions about the nature of the CC difficulty, one possibility is that in early measures, it is associated with
anticipation of the third argument after the verb (in the same way as was
discussed in Experiment 2b), while in later measures, it could be an NP similarity-
based interference due to the presence of three similar NPs presented
simultaneously on the screen (compared to only two in RC sentences). Another
possible reason for why this CCs vs. RCs disadvantage at/after the verb was not
revealed under SPR methodology is that it was again largely manifested through
regressions and second-pass times – measures that SPR did not have. Finally, the
specific task demands might have caused the reader to adopt different strategies.
In eye tracking, when the readers could see the entire sentence and return to
previous parts, they may have exploited the freedom to delay, pause, and regress
before proceeding to the following parts of the sentence, which might be reflected
in higher costs at/after CC verbs. On the other hand, under SPR, the readers knew
that they could not go back to the previous parts of the sentence, which might
have caused them to try to proceed to the potentially memory-demanding regions
like that postverbal CC NP as soon as possible to reduce the amount of decay of
the previous elements stored in the working memory. Regardless of the possible
causes for the reduced strength and reversed direction of the RC integration
effects, it is important, as detailed above, that first-pass time measure was still
able to capture this effect – the measure that indicates integration costs according
to Staub (2010), and that possibly best corresponds to the SPR results.
Any differences in task-specific processing demands, however, did not change the late-stage comprehension difficulties for nominal ORCs. In this experiment, the comprehension accuracy was again lower for ORCs than for SRCs, which replicated the results for the nominal RCs in Experiment 1, but not those for the pronominal RCs in Experiments 2a and 2b. Thus, this comprehension problem was not caused by SPR task demands, which might be more taxing on memory. In this way, these results further confirmed that late-stage comprehension difficulty in nominal ORCs is driven by similarity interference in combination with the ORC structure.

One of the aims of the current experiment was to examine if the potentially more sensitive eye-tracking methodology would reveal online indications of ORC difficulty that could further clarify the nature of their low comprehension under late measures (at least for nominal ORCs). Much more clearly than in SPR, eye-tracking measures showed that ORCs were more difficult than SRCs at the relative pronoun, where the information related to the extraction type and possible reanalysis due to their lower frequency influenced ORC processing. Interestingly, however, the ORCs were not more difficult than SRCs at the point of integration when the word orders in both sentence types were comparable. In fact, the integration costs appeared to be higher for SRCs under first-pass regression measures, but that processing difficulty was attributed to dispreference for SRCs’ word order, as discussed above. Based on these results,
the conclusion could be made that when the number of integrated elements, their type, and the distance between these elements and their integration site are held constant, the online processing costs for these clauses are comparable even under late measures. This further supports the idea that RC incremental processing is not particularly dependent on SRC/ORC structural asymmetries. However, at a very late stage of processing – at the point of comprehension question – the interaction of similarity-based interference and ORC structure appears to cause greater interpretation difficulty for these clauses.

In these ways, the eye-tracking results confirmed expectation-based processing costs at the ORC onset and at the first embedded NP in the unexpected word order constructions. Independent integration costs for RCs were also revealed during the first pass through the RC sentence after the verb. Taken together, these results further support a hybrid model for RC processing that incorporates expectation-based reanalysis early in the clause and memory-based integration costs later in the clause during incremental processing. Low comprehension in this experiment for nominal ORCs again suggested that similarity-based interference in combination with the ORC structure causes late-stage comprehension problems.
CHAPTER NINE:
GENERAL DISCUSSION

This study investigated the sources of comprehension difficulty in RC constructions. Specifically, using SPR in Experiments 1-2 and eye tracking in Experiment 3, potential sources of processing difficulty in Russian RC sentences were examined in order to test among competing models of the online processing costs for these sentence types. This was done by comparing reading patterns on SRC and ORC sentences in which an NP argument intervened between the modified noun and the RC verb. In Experiments 1 and 3, this intervening argument was a descriptive NP, while in Experiments 2a and 2b, it was a pronominal NP. It was established through a corpus analysis and an acceptability rating experiment that these nominal and pronominal RCs are associated with very different word order frequency/preference profiles. Thus, using these different NP types, while holding lexical material in the same linear order across conditions, made it possible to tease apart the potential influence of structural asymmetries, structural expectations, and memory-based integration on RC processing difficulty. In order to further clarify the nature of this difficulty, SRCs and ORCs were compared with each other as well as with corresponding CC controls, and spillover regions were included between critical regions in these sentences. Comprehension questions that targeted the embedded clause were also
included to examine possible late-stage interpretive difficulties for these sentence types.

The overall pattern of effects across experiments was as follows: Structural expectation-based effects were found early in the embedded clause for less expected constructions. Independently of these effects, integration costs were found later in the embedded clause for RC sentences. Crucially, these costs were comparable for both SRCs and ORCs when integration distance was held constant. These effects are thus taken to support a hybrid model for the incremental processing of RC sentences (as in Levy et al., 2013; Staub, 2010), under which processing costs in these sentences are associated with disruptions related to both structural expectations and memory-based integration. Moreover, contrary to the predictions of structure-based models, there were no clear indications of particular incremental processing difficulty for ORCs, indicating that RC processing does not appear to be strongly related to SRC/ORC structural asymmetries. In fact, the only indication of particular processing difficulty for ORCs was found under the comprehension question measure – and even then only for sentences with nominal RCs, in which there were similar modified and RC NPs. These findings and conclusions are explored in more detail below.

First, consider the results of the corpus analysis and acceptability rating experiment, which were conducted to establish the frequency/preference profiles for the constructions under investigation. As was previously found for English
(Gordon & Hendrick, 2005; Reali & Christiansen, 2007) and Russian (Levy et al., 2013), the corpus analysis confirmed that ORCs were overall less frequent than SRCs. Furthermore, in both the corpus analysis and acceptability rating experiment, it was found that the word order frequency/preference profiles for SRCs and ORCs depended on the embedded NP type (descriptive NP vs. pronoun). For nominal RCs, the more frequent and preferred word orders were the canonical (VO) order for SRCs and the non-canonical (VS) order for ORCs. However, this pattern was essentially reversed for pronominal RCs. For ORCs, the canonical (SV) order was more frequent/preferred, while for SRCs, there was no clear word order preference – i.e., the VO and OV orders were equally frequent/preferred. A very different pattern of word order preferences was found for CC sentences. In these sentences, the canonical word order was rated higher than the non-canonical order, regardless of the embedded NP type. These frequency/preference profiles are of course interesting in and of themselves, especially with respect to the finding that there is a preference for the non-canonical word order in nominal ORCs. But more importantly for the hypotheses under investigation in this study, these frequency/preference profiles also allowed for clear predictions in relation to expectation-based effects during incremental sentence processing.

The first indications of the influence of these expectation-based processes were found at the ORC relativizer. Across the experiments, relative pronouns
were read slower than CC complementizers. This is perhaps not surprising in light of length differences between these elements as well as the somewhat referential nature of relative pronouns and the fact that they introduce RCs, not subcategorized-for complement clauses. More importantly in terms of the hypotheses under investigation in this study, there were also some indications that ORC accusative-case relativizers were more difficult to process than SRC nominative-case relativizers. In light of the frequency disparity between SRCs and ORCs discussed above, this effect is consistent with expectation-based processing at this point in the RC.

It is however important to note several caveats to this interpretation. First and foremost, especially large processing costs for ORC relativizers were not obtained across experiments. Indeed, while the eye-tracking experiment revealed clear indications of this effect, mainly in a form of regressions out of the region immediately following the ORC relativizer, there were only suggestions of this effect in the SPR experiments – particularly in Experiments 2a and 2b. Also, this effect could have alternative explanations. For instance, it could be attributed to structural reanalysis if there were a particular preference to analyze the modified NP as a subject of the RC (Gennari & MacDonald, 2008, 2009; Traxler et al., 2002, 2005).

Much clearer expectation effects were observed in the next region of interest – the embedded-clause NP – which indicated the word order in the
embedded clause. For sentences with word orders that were less frequent in the corpus and/or dispreferred in the acceptability ratings, the SPR experiments (Experiments 1-2) revealed longer RTs in this region. Specifically, for the nominal clauses in Experiment 1, there were inflated RTs in this region for both SRCs and ORCs, as well as for non-canonically ordered SRC control CCs. For the pronominal clauses in Experiments 2a and 2b, the pattern of effects changed in accordance with the different word order frequency/preference profiles for these clauses. In these experiments, processing costs at/after the embedded NP were found only in the one dispreferred condition – SRC control CCs, which again had the non-canonical OVS word order. The eye-tracking experiment (Experiment 3) showed these expectation-based effects for nominal clauses not just in a form of longer RTs, but also in terms of a greater incidence of first-pass regressions, which is consistent with the pattern of results in Staub’s (2010) eye-tracking investigation into English RCs. These effects were especially strong at and after the embedded NP for SRCs, possibly because the non-canonical word order in these clauses is especially infrequent.

Before discussing the results in the next region of interest, it is important to emphasize that unlike comparable effects in English, these expectation-based effects at the first embedded NP resist other explanations. For instance, although the longer times at the first embedded NP in English nominal ORCs are commonly attributed to expectation due to the overall lower frequency of this
structure (Levy, 2008; Staub, 2010), this effect has also been explained in terms of especially high encoding costs for this NP in English ORCs (Gordon & Lowder, 2012). Under this account, these costs are incurred because English ORCs have two NPs that appear before the integrating verb, while SRCs have only one. In the current study, both ORCs and SRCs had two NPs before the integrating verb. The observed effects, however, were slightly different for these RC types, specifically in the eye-tracking experiment. As noted above, in this experiment, there were particular processing costs at the relativizer for ORCs and at the embedded NP for SRCs. If these effects were due to encoding only, comparable processing patterns would be expected at the embedded NPs when the number and types of NPs to be encoded before integration were held constant. More importantly, in all experiments, the effects at the first embedded NP were in correspondence with word order preferences/frequencies across NP types and clause types – a pattern of results that is most consistent with expectation-based processing effects.

The effects early in the embedded clause also resist explanation in terms of potential processing differences related specifically to case. One might entertain this idea because the elements that triggered some of these effects – ORC relativizers and SRC embedded NPs – were accusative-case marked, while their comparison regions were in nominative case. Although it is possible that nominative case is overall more frequent or easier to process, if this were a
driving force behind the effects in the present experiments, particular difficulty should have been observed for accusative-case marked NPs across the board. However, this was not the case. For example, this account would predict that accusative-case pronominal NPs would generally be more difficult to process than their nominative-case counterparts in Experiments 2a and 2b. There were however no differences between these words in ORCs and SRCs. And this was the case despite the fact that accusative-case pronouns are generally longer than their nominative counterparts, specifically in the first-person (e.g. ja, my ‘I, we’ vs. menja, nas ‘me, us’).

In this way, as predicted under expectation-based theories (Hale, 2001; Levy, 2008; MacDonald & Christiansen, 2002), structural frequency and preferences appear to play a key role in the online processing of RC sentences. This is particularly the case in pre-verbal regions – in the present experiments, at/after the relativizer in ORCs and at the first embedded NP in dispreferred word order constructions. However, it is important to emphasize that these effects did not continue throughout the sentence in a form of spillover; nor did the difficulty of subsequent words in dispreferred sentences decrease due to their increased probability of occurrence, as would be predicted under the surprisal theory (Levy, 2008). Instead, a set of apparently independent processing costs was observed later in the clause.
This different pattern of effects was revealed at and after the embedded-clause verb. In all experiments there were indications of RC integration costs relative to their CC controls at or after this verb. These costs were particularly strong for nominal RCs under SPR, less strong in pronominal clauses, and revealed only in first-pass times after the verb for nominal RCs in eye tracking. Importantly, these integration effects were separable from expectation effects earlier in the clause – something that is difficult to demonstrate in English because of the word order differences in SRCs and ORCs. The pattern of results thus corresponds to predictions of the memory-based accounts, such as DLT (Gibson, 1998, 2000), similarity-based interference accounts (Gordon et al., 2001, 2002, 2004, 2006), as well as the cue-based retrieval accounts (Lewis & Vasishth, 2005; Lewis et al., 2006; Van Dyke & Lewis, 2003; Van Dyke & McElree, 2006; Vasishth, 2011). In this way, the combined set of findings from the present study clearly indicates that expectation-based costs incurred early in the clause cannot account for the entirety of the processing difficulties associated with the incremental comprehension of RCs. Rather, consistent with the predictions of the hybrid models discussed above, the results at/after the embedded-clause verb indicate that memory-based integration effects also play a key role in terms of driving these difficulties. It is also important to emphasize that, again consistent with the memory-based accounts, there were no clear processing differences between SRCs and ORCs at this embedded verb when the number, types of
integrated elements, and the distance between them and the integration site were held constant. In this way, the present experiment allowed memory-based integration effects to be dissociated from possible effects related to SRC/ORC structural asymmetries.

While there were no incremental processing differences between SRCs and ORCs that could be traced specifically to structural asymmetries, there was an indication of the influence of these structural differences on late-stage comprehension processes. Indeed, the accuracy rates on the end-of-the-sentence comprehension questions – all of which targeted the content of the embedded clause – revealed comprehension difficulty for nominal ORCs in comparison with SRCs (Experiments 1, 3), but not for their pronominal counterparts (Experiments 2a, 2b). This pattern of results suggests that ORC structure influences late-stage comprehension processes, but seemingly only in combination with similarity-based interference. Although the current study did not intend to test among different explanations for these late-stage effects, it is possible that in line with structure-based accounts, it is more difficult either to organize arguments into their correct positions in ORCs, or to later retrieve information related to those positions when responding to comprehension questions. Importantly, this appears to be the case only when the modified NP and RC NP are similar and therefore harder to remember/distinguish. The structural properties of ORCs that might have given rise to this effect are not entirely clear. Under IMP (Lin & Bever,
2006), this effect could be due to the deeper embedded position of the object and the greater structural distance between the extracted element and the extraction site; under perspective maintenance account (MacWhinney & Pleh, 1998), it could be due to changing the perspective of the subject in each clause; or, under word order template accounts (Holmes & O’Regan, 1981; Townsend & Bever, 2001) it could be due to the non-canonical appearance of the object before the subject. Further research is necessary in order to understand the nature of this late stage comprehension difficulty for ORCs – and in particular, its interaction with similarity-based interference.

Methodological Implications

The current study also provides a way to compare responses to the same input under different methodologies. The same sentences were examined first in an offline acceptability rating experiment, which was complemented by the corpus analysis, and then in online reading experiments, which were complemented by an end-of-the-sentence comprehension measure. This allows for a comparison of untimed responses elicited after reading the sentence (i.e., under acceptability rating task) with the time-sensitive responses of online reading experiments, which show (at least in part) how these structures are processed. This is especially relevant in light of recent attempts to establish how grammar and language processing could be parts of the same cognitive system (Lewis & Phillips, 2015; Philips & Lewis, 2013). Specifically, it has been suggested that
when offline and online responses to the same input are not perfectly aligned, they complement each other, such that online responses show intermediate steps in building grammatical representations, while offline judgments/ratings reflect different stages of computation in the same system.

With regard to this idea, it is interesting to note that in the current study, the offline acceptability ratings patterned with some of the online effects in the reading experiments, but not with others. Specifically, in sentences that were dispreferred in offline ratings or less frequent in the corpus, longer RTs were revealed at the first unexpected word in both RCs and CCs. Other online effects did not correspond to the offline measures. In particular, the effects in the verbal regions of the embedded clause were different from those earlier in the clause and thus did not correspond to the sentence frequency/preference profiles. Instead, there were comparable processing costs for SRCs and ORCs at and after the RC verb when the number of integrated elements, their type, and the distance between these elements and their integration site were held constant. Moreover, although nominal ORCs were judged offline as highly acceptable, late-stage comprehension difficulty was revealed for these sentences in particular, which has been explained in terms of an effect of similarity-based interference in combination with ORC structural processing difficulty. These results thus suggest that offline measures might reflect intermediate steps in online structure building related to expectation-based processing more so than online processing.
disruptions and comprehension difficulty that relate to memory demands. Another way of thinking about this is that online measures appear to reflect intermediate stages of sentence computation that are not readily captured under offline measures. These differences might be taken to indicate that online and offline tasks reflect different stages of computation in a single cognitive system for language processing.

Moreover, several important implications related to task-specific demands were revealed by testing the same nominal RC and CC items in two different tasks – SPR and eye tracking. To point out parallels between the two methods, under eye tracking, RC integration effects were mainly revealed in a form of first-pass times, and this measure generally seemed to correspond more closely with RTs in the SPR experiment than did late measures or measures reflecting regressive eye-movements. Interestingly also, the reading task – whether SPR or eye tracking – did not appear to have an effect on overall RC comprehension, indicating that the particular late-stage comprehension difficulty for nominal ORCs was not caused by the (possibly) higher memory demands of SPR. On the other hand, there were several differences in the effects that were revealed under these methods. Perhaps the most salient difference is that under eye tracking, processes related to disrupted expectations and subsequent reanalysis were revealed mainly in a form of first-pass regressions. Because such regressions are not permitted in SPR, it is possible that this task was not fully capable of
reflecting these expectation effects. Along similar lines, the eye-tracking experiment also appeared to be more sensitive to degrees of difference in the frequency/preference profiles for the constructions. That is, while the nominal SRCs and ORCs had comparable RTs at the first unexpected word region under SPR, eye tracking revealed particularly large processing costs in this region for the less frequent/more dispreferred SRCs.

Conclusion

The overall goal of this study was to determine sources of comprehension difficulty in complex sentences like RCs, and apply these findings to language processing more generally. Taken together, the results revealed two separable effects related to the RC processing – one early in the embedded clause, and another effect later in the clause. Early in the clause, the effects were found at the ORC relative pronoun and at the embedded NPs for dispreferred constructions. Later in the clause, there were comparable processing costs for both SRCs and ORCs at/after the verb. The separation between these effects suggests that processing difficulty early in the RCs relates to costs associated with disrupted structural expectations and reanalysis, while those at and after the RC verb relate to retrieving and integrating elements into the sentence. These findings are thus interpreted in support of hybrid models of the RC processing (e.g., Levy et al., 2013; Staub, 2010) – and for the processing of complex sentences in general – that assume largely independent roles for both structural expectations and
memory-based retrieval/integration during incremental sentence processing. Moreover, even though both RC types had corresponding word orders, low comprehension in ORCs compared to SRCs was found for nominal RCs, but not for their pronominal counterparts. While further research is necessary to examine the timing and nature of these late effects, this finding might be taken to indicate that more complex sentence structure in combination with similarity-based interference affects late-stages of sentence comprehension.
APPENDIX A:

ADDITIONAL SYNTACTIC TREES
Possible structure of Russian SRC (1) with the canonical surface word order is presented below:

1. SRC (canonical word order)

Hozjajka.F.SG, [CP kotoraja.F.SG.NOM [TP_rasstroila starušku.ACC
Housewife.F.SG, [CP who.F.SG. NOM [TP_upset old_lady.ACC
rasskazom.INSTR,]] legla...
story.INSTR,]] lay...
‘The housewife, who upset the old lady with her story, lay…’

Possible structure of 1:

The sentence type used as a control for SRC sentences involve scrambling inside the embedded verbal CC (shown in 2). The main difference between these CC sentences and SRC sentences is that there is no extracted or moved out of the subject position relativizer (wh-element), so there is no wh-element trace inside the embedded clause. The possible structure of 2 is presented below.
2. CC (non-canonical)

Housewife said, [CP that [TP old_lady.ACC upset rasskazom.INSTR tetuška.NOM.] story.INSTR aunty.NOM.]

‘The housewife said that the aunty upset the old lady with her story.’

Possible structure of 2:

The scrambling (in 2) from the base SVO canonical order into the surface OVS word order is proposed to be achieved by the hybrid account: the object (starušku ‘old_lady.ACC’) moves into the Spec of TP driven by the EPP (A-movement), and the subject (tetuška ‘aunty.NOM’) moves to the right through Extraposition (Focus A’-movement) (Bailyn, 2012)
APPENDIX B:

CORPUS MANUAL TAG SYSTEM
For the frequency counts of each RC construction, the RCs extracted from the Russian National Corpus were annotated according to the classification in the table below (repeated from Table 1).

<table>
<thead>
<tr>
<th>Tag class</th>
<th>RC type</th>
<th>RC NP type</th>
<th>RC word order</th>
<th>RC head animacy</th>
<th>RC NP animacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tag type</td>
<td>SRC</td>
<td>ORC</td>
<td>noun</td>
<td>canonical: VO/SV</td>
<td>animate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>pronoun (type: person, number, etc.)</td>
<td>non-canonical: OV/VS</td>
<td>inanimate</td>
</tr>
</tbody>
</table>

To better illustrate the tagging process, the example sentence of ORC (in 1) received the labels immediately following it. This is an example of the full structure that has both subjects and verb in the embedded clause, and therefore would be part of the analysis.

1. ORC

\[
\begin{array}{c}
\text{но у меня есть жених, которого выбрал мне отец мой…}
\end{array}
\]

\[
\begin{array}{c}
\text{but at.PREP me.GEN is fiancé who.ACC picked me.DAT father my…}
\end{array}
\]

‘… but I have a fiancé that my father picked for me, and…’

**Tags:**

<table>
<thead>
<tr>
<th>Tag class</th>
<th>RC type</th>
<th>RC NP type</th>
<th>RC word order</th>
<th>RC head animacy</th>
<th>RC NP animacy</th>
</tr>
</thead>
<tbody>
<tr>
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<td>ORC</td>
<td>noun</td>
<td>canonical: VO/SV</td>
<td>animate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pronoun (type: person, number, etc.)</td>
<td>non-canonical: OV/VS</td>
<td>inanimate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
</table>

Example in 2 is an SRC, but since it is missing an object in the embedded clause, this sentence was discarded from the analysis.

2. SRC

\[
\begin{array}{c}
\text{они не могли предвидеть той громоносной тучи, которая собиралася над ними.}
\end{array}
\]

\[
\begin{array}{c}
\text{they not could foresee that thunderous cloud which.NOM grew over them.}
\end{array}
\]

‘…they could not foresee that thunderous cloud that grew over them…’

**Tags:**

<table>
<thead>
<tr>
<th>Tag class</th>
<th>RC type</th>
<th>RC NP type</th>
<th>RC word order</th>
<th>RC head animacy</th>
<th>RC NP animacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tag type</td>
<td>SRC</td>
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<tr>
<td></td>
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<td></td>
<td>pronoun (type: person, number, etc.)</td>
<td>non-canonical: OV/VS</td>
<td>inanimate</td>
</tr>
</tbody>
</table>

|   | X | X | NA | NA | X | NA | NA |

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The next two examples show other RC types that were also excluded from the analysis since they were not an SRC or a direct-object RC. The ORCs in which the relative pronoun followed a preposition or was not a direct object, and therefore had a different case (dative, instrumental, genitive, prepositional, etc.), or if it was a passive or unaccusative construction – were all discarded from the analysis. To illustrate, an object-of-preposition RC is shown in 3, and a genitive RC in which the relative pronoun is a modifier of another NP is shown in 4.

3. Object of preposition RCs
…при сильном нагреве плиты происходит и испарение самого
…with strong heating of the panel, the evaporation of the material itself
материала, [из которого сделана плита].
material, [out_of which made panel]
‘…with strong heating of the panel, the evaporation of the material [the panel is made of] occurs.’

4. Genitive RCs
Это международный проект, целью которого является организация
This international project [purpose of which, GEN is organization
интеллектуального поиска …
of_intellectual search]…
‘This is an international project, [the purpose of which is to organize an intellectual search]…’
APPENDIX C:

EXPERIMENTAL ITEM SETS
Items for the Acceptability Rating Experiment

As described in Chapter 5 on acceptability rating experiment, the items for this study were the same as in the three sets presented below for Experiments 1-2, and therefore will not be repeated here. Most of the adverbial and PP spillover regions were removed for simplicity except for the last region in the CCs to prevent the pronoun from appearing sentence-finally. This was done to eliminate any oddity that could be due to having a phonologically unstressed element such as a pronoun at the end of the sentence (Rappaport, 1988). This was not an issue for RCs, as subject-modifying RCs did not end the sentence, but interrupted the MC, intervening between its subject and the rest of the clause. The only three RC sentences in which the spillover region was kept were the ones where it was essential for the meaning (e.g., ‘warn about the mistake’, where if ‘about the mistake’ were dropped in a zero context, the sentence in Russian would become less acceptable, e.g., (?) Bugalterša, kotoraja predupredila statistiku, podvela itogi v speške. ‘The accountant, who warned the statistician, finalized everything in a hurry’.) The sentences were for the most part kept the same as in the upcoming experiments, but slight adjustments had to be made to ensure they were consistent across conditions. This was done if some words were changed for synonyms while creating items for each subsequent experiment described below. The same context sentences as in Experiment 2b were used with the items in the set with third-person pronouns.

Each item appeared in three sets of eight conditions, which created 24 conditions shown in the table below. The three sets in which each item appeared were as follows: set 1: Full NP inside the embedded clause; set 2: first-person pronoun inside the embedded clause; set 3: third-person pronoun inside the embedded clause. The eight conditions inside each set were: SRC control (CC) canonical, SRC control (CC) non-canonical, ORC control (CC) canonical, ORC control (CC) non-canonical, SRC canonical, SRC non-canonical, ORC canonical, ORC non-canonical. The embedded clause in each item therefore appeared with both word orders: canonical (CC: SVO/ RC: SV/VO) and non-canonical (CC: OVS/ RC: VS/OV – in which the object was scrambled to the position before the verb and subject to the position after the verb).
<table>
<thead>
<tr>
<th>NP Type</th>
<th>Word Type</th>
<th>Word</th>
<th>Sentence</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. SRC</td>
<td>Can (SVO)</td>
<td>Housewife said, [that auxiliary.NOM upset]</td>
<td>The housewife said that the aunty upset the old lady with the news.</td>
</tr>
<tr>
<td>a. CONT</td>
<td>Non-can (OVS)</td>
<td>Housewife said, [that [auxiliary.NOM upset]]</td>
<td>The housewife said that the old lady upset the aunty with the news.</td>
</tr>
<tr>
<td>b. CONT</td>
<td>Non-can (OVS)</td>
<td>Housewife said, [that [auxiliary.NOM upset]]</td>
<td>The housewife said that the old lady upset the aunty with the news.</td>
</tr>
<tr>
<td>b. ORC</td>
<td>Can (SVO)</td>
<td>Housewife said, [that [auxiliary.NOM upset]]</td>
<td>The housewife said that the old lady upset the aunty with the news.</td>
</tr>
<tr>
<td>c. CONT</td>
<td>Non-can (OVS)</td>
<td>Housewife said, [that [auxiliary.NOM upset]]</td>
<td>The housewife said that the old lady upset the aunty with the news.</td>
</tr>
<tr>
<td>c. ORC</td>
<td>Can (SVO)</td>
<td>Housewife said, [that [auxiliary.NOM upset]]</td>
<td>The housewife said that the old lady upset the aunty with the news.</td>
</tr>
<tr>
<td>d. CONT</td>
<td>Non-can (OVS)</td>
<td>Housewife said, [that [auxiliary.NOM upset]]</td>
<td>The housewife said that the old lady upset the aunty with the news.</td>
</tr>
<tr>
<td>d. ORC</td>
<td>Can (SVO)</td>
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The grammatical and ungrammatical items for the acceptability rating task (described in Chapter 5) are presented below.

**Ungrammatical Condition** *(Translation into English is approximate. The grammatical categories are only shown if it is ungrammatical; * indicates ungrammaticality of the word form):*

1. Преподаватель проверять экзаменационные работы.
   Teacher to_check examination papers.
2. Дети любили есть блином для завтрак.
   Children loved to_eat pancake.INSTR for breakfast.
3. Павлу в этом году Викторовичу исполнился 89 лет.
   Paul this year Viktorovich turned 89 years.
4. Иван начался боевой пути на Карпатах и дошел до Берлина.
   Ivan began fighting way.GEN at Carpathians and reached Berlin.
5. В жаре напитком самые популярные стали газированные напитки.
   In heat drink.INSTR the_most popular became gas drinks.
6. В конце войны он стать дважды Героем Советского Союза и дорос до командиров.
   At end.INSTR of_the_war he to_become twice hero of the_Soviet Union and grew to commanders.
7. Любой свет попадет на глаза, выработка мешает мелатонином.
   Any light enters the_eye, production interferes melatonin.INSTR.
8. Она появился на вечером по случаю юбилей датской консервативной партии.
   She appeared on night.INSTR on the_occasion anniversary.NOM of_the_Danish conservative party.
9. Чемпион по полусреднем весе судейским решением победила бывшего чемпиона мира.
   Champion.MASC in the_welterweight.PREP judge’s decision.INSTR won.FEM former.GEN world champion.INSTR.
10. Эксперт объяснила за счет чего убедительно переиграло в первом раунде.
    Expert explained for what account convincingly played in the_first round.
11. На Москве накануне пожаром уничтожил старинной особняк.
    On Moscow the_day_before fire.NEU.INSTR destroyed.MASC old.GEN mansion.
12. Внутрь тетя сильно пострадала и были охвачено несколько помещений на всех этажах.
    Inside aunt badly damaged and were covered a_few rooms on all floors.
13. Все задержанные безработными.
    All detainees unemployed.INSTR.
14. Мальчика нашла на картинке все предметы, которые нарисованы ниже.
    Boy.GEN found.FEM in the_picture all the_items, that are_drawn below.
15. Медсестра отвела молодую мужчину вниз лестнице и посадила в машину.
    Nurse took young.FEM man down the_stairs and put in the_car.
16. Цветочница отращивала в саде красивую хризантемы, розы и фрукты.
The flowerlady grew in garden beautiful. ACC.SG chrysanthemums, roses and fruit.

**Grammatical Condition:**
1. Фронтовики получили материальную помощь.
   ‘Veterans received welfare.’
2. Специалисты советуют покупателям внимательно читать информацию на этикетках.
   ‘Experts advise buyers to carefully read the information on the labels.’
3. Григорий родился в небольшой деревне недалеко от Свердловска.
   ‘Gregory was born in a small village near Sverdlovsk.’
4. Я увидел девочку с корзинкой, в которой лежали плитки шоколада, пачки печенья и конфеты.
   ‘I saw a girl with a basket, in which were bars of chocolate, packs of biscuits, and sweets.’
5. Женщина написала заявление в полицию и обратилась к адвокатам.
   ‘The woman left a statement at the police and appealed to the lawyers.’
6. Хозяева поля победили со счетом 2:0 и вышли в полуфинал.
   ‘The home team won with the score 2:0 and advanced to the semifinals.’
7. Президент прибыл в Сочи на открытие зимней олимпиады.
   ‘The President arrived at Sochi for the Opening of the Winter Olympics.’
8. Российская теннисистка заняла первое место в чемпионате мира.
   ‘Russian tennis player took the first place in the World Cup.’
9. Министр заверил, что каждая семья получит необходимую поддержку и помощь.
   ‘The Minister assured that every family would receive the necessary support and assistance.’
10. Юноша рассказал о своих впечатлениях от поездки.
    ‘The young man told about his impressions from the trip.’
11. Все бурно обсуждали выступление молодого политика.
    ‘Everyone actively discussed the speech of the young politician.’
12. Двое мужчин взорвали банкомат и забрали все деньги.
    ‘Two men blew up an ATM and took all the money.’
13. Полицейский убедил школьника, что в автобусе было совершенно безопасно.
    ‘Police convinced the student that the bus was perfectly safe.’
14. Преступник достал пистолет и выстрелил, но промахнулся и быстро скрылся.
    ‘The offender pulled out a gun and fired, but missed, and quickly disappeared.’
15. Модель считала себя толстой и ничего не ела, а только пила низкокалорийную смесь.
    ‘The model considered herself fat and didn't eat anything, but only drank low-calorie shakes.’
16. Бизнесмен купил билеты на море и улетел со своей секретаршей от проблем подальше.
    ‘The businessman bought tickets to the sea and flew away with his secretary from all the problems.’
Experimental Items for Experiments 1 and 3

Conditions are marked for the first item. The rest of the items are presented in the same order of conditions. Detailed descriptions can be found in the introduction for Experiment 1.

1. a. SRC [embedded-clause word order: OV (non-canonical, dispreferred)]

Dictator, who.NOM recently dissident.ACC irreversibly came_to_hate for treason, pronounced speech at meeting.

‘The dictator, who recently came to irreversibly hate the dissident for treason, made a speech at the meeting.’

Comprehension Question: Возненавидел ли диктатор диссидента за измену?

Did the dictator hate the dissident for treason?

Answer: ДА/ YES

b. Control CC for SRC [embedded-clause word order: OVS (non-canonical, dispreferred)]

Dictator, who.ACC recently dissident.NOM irreversibly came_to_hate for treason, pronounced speech at meeting.

‘The dictator, whom recently the dissident came to irreversibly hate for treason, made a speech at the meeting.’

Comprehension Question: Возненавидел ли диктатор диссидента за измену?

Did the dictator hate the dissident for treason?

Answer: НЕТ/ NO

c. ORC [embedded-clause word order: SV (canonical, dispreferred)]

Dictator said, that recently dissident.ACC irreversibly came_to_hate for treason officer.NOM.

‘The dictator said that recently the officer came to irreversibly hate the dissident for treason.’

Comprehension Question: Возненавидел ли чиновник диссидента за измену?

Did the officer hate the dissident for treason?

Answer: ДА/ YES

d. Control CC for ORC [embedded-clause word order: SVO (canonical, preferred)]
Диктатор сказал, что недавно диссидент напрочь возненавидел за предательство чиновника.

Dictator said, that recently dissident.NOM irreversibly came_to_hate for treason officer.ACC.

‘The dictator said that recently the dissident came to irreversibly hate the officer for treason.’

Comprehension Question: Возненавидел ли чиновник диссидента за измену? Did the officer hate the dissident for treason?

Answer: НЕТ/ NO

2. Медсестра, которая прошлой ночью акушерку потихоньку позвала из процедурной, уехала домой пораньше.

Nurse, who.NOM last night accoucheuse.ACC quietly called out_of procedural, went home early.

‘The nurse, who last night quietly called the accoucheuse out of the procedural, went home early.’

Медсестра вызвала акушерку из процедурной?

Did the nurse call the accoucheuse out of the procedural?

ДА/ YES

Медсестра, которую прошлой ночью акушерка потихоньку позвала из процедурной, уехала домой пораньше.

Nurse, who.ACC last night accoucheuse.NOM quietly called out_of procedural, went home early.

‘The nurse, whom last night the accoucheuse quietly called out of the procedural, went home early.’

Медсестра вызвала акушерку из процедурной?

Did the nurse call the accoucheuse out of the procedural?

НЕТ/ NO

Медсестра сказала, что прошлой ночью акушерку потихоньку позвала из процедурной нянька.

Nurse said, that last night accoucheuse.ACC quietly called out_of procedural nanny.NOM.

‘The nurse said that last night the nanny quietly called the accoucheuse out of the procedural.’

Няня вызвала акушерку из процедурной?

Did the nanny call the accoucheuse out of the procedural?

ДА/ YES

Медсестра сказала, что прошлой ночью акушерка потихоньку позвала из процедурной няньку.
Nurse said, that last night accoucheuse.NOM quietly called out of procedural nanny.ACC.
‘The nurse said that last night the accoucheuse quietly called the nanny out of the procedural.’

Няня вызвала акушерку из процедурной?
Did the nanny call the accoucheuse out of the procedural?
НЕТ/ NO

3. Терапевт, который позавчера кардиолога неспроста обвинил в некомпетентности, проверил в кабинете файлы.
Therapist, who.NOM day_before_yesterday cardiologist.ACC not_without_cause accused of incompetence, checked in office files.
‘The therapist, who the day before yesterday justly accused the cardiologist of incompetence, checked the files in the office.’

Кардиолог обвинил терапевта в некомпетентности?
Did the cardiologist accuse the therapist or incompetence?
НЕТ/ NO

Терапевт, которого позавчера кардиолога неспроста обвинил в некомпетентности, проверил в кабинете файлы.
Therapist, who.ACC day_before_yesterday cardiologist.NOM not_without_cause accused of incompetence, checked in office files.
‘The therapist, whom the day before yesterday the cardiologist justly accused of incompetence, checked the files in the office.’

Кардиолог обвинил терапевта в некомпетентности?
Did the cardiologist accuse the therapist or incompetence?
ДА/ YES

Терапевт сказал, что позавчера кардиолога неспроста обвинил в некомпетентности хирург.
Therapist said, that day_before_yesterday cardiologist.ACC not_without_cause accused of incompetence surgeon.NOM.
‘The therapist said that the day before yesterday the surgeon justly accused the cardiologist of incompetence.’

Кардиолог обвинил хирурга в некомпетентности?
Did the cardiologist accuse the surgeon or incompetence?
НЕТ/ NO

Терапевт сказал, что позавчера кардиолога неспроста обвинил в некомпетентности хирурга.
Therapist said, that day_before_yesterday cardiologist.NOM not_without_cause accused of incompetence surgeon.ACC.
‘The therapist said that the day before yesterday the cardiologist justly accused the surgeon of incompetence.’

Кардиолог обвинил хирурга в некомпетентности?

Did the cardiologist accuse the surgeon or incompetence?

ДА/ YES

4. Служанка, которая после бала принцессу дружелюбно поприветствовала широкой улыбкой, споткнулась о корень дуба.

Maid, who.NOM after ball princess.ACC friendly welcomed by_ broad smile, tripped on root of_oak_tree.

‘The maid, who after the ball friendly welcomed the princess with the broad smile, tripped on a root of the oak tree.’

Принцесса поприветствовала служанку улыбкой?

Did the princess welcome the maid with the smile?

НЕТ/ NO

Служанка, которую после бала принцесса дружелюбно поприветствовала широкой улыбкой, споткнулась о корень дуба.

Maid, who.ACC after ball princess.NOM friendly welcomed by_ broad smile, tripped on root of_oak_tree.

‘The maid, whom after the ball the princess friendly welcomed with the broad smile, tripped on a root of the oak tree.’

Принцесса поприветствовала служанку улыбкой?

Did the princess welcome the maid with the smile?

ДА/ YES

Служанка сказала, что после бала принцессу дружелюбно поприветствовала широкой улыбкой королева.

Maid said, that after ball princess.ACC friendly welcomed by_ broad smile queen.NOM.

‘The maid said that after the ball the queen friendly welcomed the princess with the broad smile.’

Принцесса поприветствовала королеву улыбкой?

Did the princess welcome the queen with the smile?

НЕТ/ NO

Служанка сказала, что после бала принцесса дружелюбно поприветствовала широкой улыбкой королеву.

Maid said, that after ball princess.NOM friendly welcomed by_ broad smile queen.ACC.

‘The maid said that after the ball the princess friendly welcomed the queen with the broad smile.’

Принцесса поприветствовала королеву улыбкой?

Did the princess welcome the queen with the smile?

ДА/ YES
5. Мотоциклист, который сегодня утром таксиста бессовестно игнорировал на перекрестке, скрылся за поворотом.
The motorcyclist, who.NOM today_morning taxi_driver.ACC shamelessly ignored at intersection, disappeared around corner.
‘The motorcyclist, who this morning shamelessly ignored the taxi driver at the intersection, disappeared around the corner.’
Мотоциклист игнорировал таксиста на перекрестке?
Did the motorcyclist ignore the taxi driver at the intersection?
ДА/ YES
Мотоциклист, которого сегодня утром таксист бессовестно игнорировал на перекрестке, скрылся за поворотом.
The motorcyclist, who.ACC today_morning taxi_driver.NOM shamelessly ignored at intersection, disappeared around corner.
‘The motorcyclist, whom this morning the taxi driver shamelessly ignored at the intersection, disappeared around the corner.’
Мотоциклист игнорировал таксиста на перекрестке?
Did the motorcyclist ignore the taxi driver at the intersection?
НЕТ/ NO
Мотоциклист сказал, что сегодня утром таксист бессовестно игнорировал на перекрестке велосипедиста.
The motorcyclist said that today_morning taxi_driver.ACC shamelessly ignored at intersection cyclist.NOM.
‘The motorcyclist said that this morning the cyclist shamelessly ignored the taxi driver at the intersection.’
Велосипедист игнорировал таксиста на перекрестке?
Did the cyclist ignore the taxi driver at the intersection?
ДА/ YES
Мотоциклист сказал, что сегодня утром таксист бессовестно игнорировал на перекрестке велосипедиста.
The motorcyclist said that today_morning taxi_driver.NOM shamelessly ignored at intersection cyclist.ACC.
‘The motorcyclist said that this morning the taxi driver shamelessly ignored the cyclist at the intersection.’
Велосипедист игнорировал таксиста на перекрестке?
Did the cyclist ignore the taxi driver at the intersection?
НЕТ/ NO
6. Художница, которая во время беседы коллекционерку постепенно утомила своим рассказом, свернула холст с портретом.
Artist, who.NOM at time_of_conversation collector.ACC gradually tired by her story, rolled_up canvas with portrait.
‘The artist, who during the conversation gradually tired the collector by her story, rolled up the canvas with the portrait.’

Did the artist tire the collector by her story?
ДА/ YES

Art, who.ACC at time of_conversation collector.NOM gradually tired by_her story, rolled up canvas with portrait.

‘The artist, whom during the conversation the collector gradually tired by her story, rolled up the canvas with the portrait.’

Did the artist tire the collector by her story?
НЕТ/ NO

Art, said, that at time of_conversation collector.ACC gradually tired by_her story art_buyer.NOM.

‘The artist said that during the conversation the art buyer gradually tired the collector by her story.’

Did the art buyer tire the collector by her story?
ДА/ YES

Art, said, that at time of_conversation collector.NOM gradually tired by_her story art_buyer.ACC.

‘The artist said that during the conversation the collector gradually tired the art buyer by her story.’

Did the art buyer tire the collector by her story?
НЕТ/ NO

7. Инженер, который уже не один год аналитика сильно раздражал своими манерами, написал доклад о проекте.

Engineer, who.NOM already not one year analyst.ACC strongly irritated by_his manners, wrote report about project.

Did the art buyer tire the collector by her story?

Аналитик раздражал инженера своими манерами?
Did the analyst irritate the engineer by his manners?
Нет./ NO

Инженер, которого уже не один год аналитик сильно раздражал своими манерами, написал доклад о проекте.
Engineer, who.ACC already not one year analyst.NOM strongly irritated by_his manners, wrote report about project.
The engineer, whom for several years already the analyst strongly irritated by his manners, wrote a report about the project.

Аналитик раздражал инженера своими манерами?
Did the analyst irritate the engineer by his manners?
Да/ YES

Инженер сказал, что уже не один год аналитика сильно раздражал своими манерами экономист.
Engineer said, that already not one year analyst.ACC strongly irritated by_his manners economist.NOM.
The engineer said that for several years already the economist strongly irritated the analyst by his manners.

Аналитик раздражал экономиста своими манерами?
Did the analyst irritate the economist by his manners?
Нет./ NO

Инженер сказал, что уже не один год аналитик сильно раздражал своими манерами экономиста.
Engineer said, that already not one year analyst.NOM strongly irritated by_his manners economist.ACC.
The engineer said that for several years already the analyst strongly irritated the economist by his manners.

Аналитик раздражал экономиста своими манерами?
Did the analyst irritate the economist by his manners?
Да/ YES

8. Стилистка, которая уже много лет педикюршу сильно уважала за хорошую работу, пришла на встречу поздно.
Stylist, who.NOM already many years chiropodist.ACC strongly respected for good work, came to meeting late.
‘The stylist, who already for many years respected the chiropodist a lot for good work, came to the meeting late.’

Уважала ли педикюрша стилистку за хорошую работу?
Did the chiropodist respect the stylist for good work?
Нет./ NO
Стилистка, которую уже много лет педикюрша сильно уважала за хорошую работу, пришла на встречу поздно.
Stylist, who already many years chiropodist strongly respected for good work, came to meeting late.
‘The stylist, whom already for many years the chiropodist respected a lot for good work, came to the meeting late.’
Уважала ли педикюрша стилистку за хорошую работу?
Did the chiropodist respect the stylist for good work?
ДА/ YES
Стилистка сказала, что уже много лет педикюршу сильно уважала за хорошую работу маникюршу.
Stylist said, that already many years chiropodist strongly respected for good work manicurist.
‘The stylist said that already for many years the manicurist respected the chiropodist a lot for good work.’
Уважала ли педикюрша маникюршу за хорошую работу?
Did the chiropodist respect the manicurist for good work?
НЕТ/ NO
Стилистка сказала, что уже много лет педикюрша сильно уважала за хорошую работу маникюршу.
Stylist said, that already many years chiropodist strongly respected for good work manicurist.com.
‘The stylist said that already for many years the chiropodist respected the manicurist a lot for good work.’
Уважала ли педикюрша маникюршу за хорошую работу?
Did the chiropodist respect the manicurist for good work?
ДА/ YES
9. Вор, который прошлой ночью гангстера несомненно подставил во время ограбления, спрятал выручку в сейфе.
Thief, who last night gangster undoubtedly framed at time robbery, hid loot in safe.
‘The thief, who last night undoubtedly framed the gangster during the robbery, hid the loot in the safe.’
Подставил ли вор гангстера?
Did the thief frame the gangster?
ДА/ YES
Вор, которого прошлой ночью гангстер несомненно подставил во время ограбления, спрятал выручку в сейфе.
The thief, who last night gangster. NOM undoubtedly framed at time robbery, hid loot in safe.

‘The thief, whom last night the gangster undoubtedly framed during the robbery, hid the loot in the safe.’

Did the thief frame the gangster?

Нет/No

Вор сдал своего напарника?

The thief said, that last night gangster. ACC undoubtedly framed at time robbery partner. NOM.

The thief said that last night the gangster undoubtedly framed his partner during the robbery.

Did the gangster frame his partner?

Да/Yes

Вор сдал своего напарника?

The thief said that last night his partner undoubtedly framed the gangster during the robbery.

Did the gangster frame his partner?

Нет/No

Mother, who at time of getting ready bride. ACC joyfully entertained by jokes, ate some chocolates from table.

‘The mother, who while getting ready joyfully entertained the bride with her jokes, ate some chocolates from table.’

Did the mother entertain the bride with her jokes?

Да/Yes

Мать, которую во время сборов невеста весело развлекала шутками, съела несколько конфет со стола.

Mother, who. ACC at time of getting ready bride. NOM joyfully entertained by jokes, ate some chocolates from table.
‘The mother, whom while getting ready the bride joyfully entertained with her jokes, ate some chocolates from the table.’

Did the mother entertain the bride with her jokes?

Нет/ NO

‘Развлекала ли мать невесту своими шутками?’

Did the mother entertain the bride with her jokes?

Нет/ NO

‘Мать сказала, что во время сборов невесту весело развлекала шутками подруга.

Mother said, that at time of getting ready bride.ACC joyfully entertained by jokes girlfriend.NOM.

‘The mother said that while getting ready the girlfriend joyfully entertained the bride with her jokes.’

Did the girlfriend entertain the bride with her jokes?

Да/ YES

‘Мать сказала, что во время сборов невеста весело развлекала шутками подругу.

Mother said, that at time of getting ready bride.NOM joyfully entertained by jokes girlfriend.ACC.

‘The mother said that while getting ready the bride joyfully entertained the girlfriend with her jokes.’

Did the girlfriend entertain the bride with her jokes?

Нет/ NO

11. Сыщик, который сегодня вечером подозреваемого сразу заметил около ресторана, натянул кепку на глаза.

Detective, who.NOM today_night suspect.ACC immediately noticed near restaurant, pulled cap over eyes.

‘The detective, who tonight immediately noticed the suspect near the restaurant, pulled his cap over his eyes.’

Did the suspect immediately notice the detective?

Нет/ NO

‘Сыщик, которого сегодня вечером подозреваемый сразу заметил около ресторана, натянул кепку на глаза.

Detective, who.ACC today_night suspect.NOM immediately noticed near restaurant, pulled cap over eyes.

‘The detective, whom tonight the suspect immediately noticed near the restaurant, pulled his cap over his eyes.’

Did the suspect immediately notice the detective?

Да/ YES
Сыщик сказал, что сегодня вечером подозреваемого сразу заметил около ресторана полицейский.
Detective said, that today_night suspect.ACC immediately noticed near restaurant policeman.NOM.
‘The detective said that tonight the policeman immediately noticed the suspect near the restaurant’
Подозреваемый сразу заметил полицейского?
Did the suspect immediately notice the policeman?
НЕТ/ NO
Сыщик сказал, что сегодня вечером подозреваемый сразу заметил около ресторана полицейского.
Detective said, that today_night suspect.NOM immediately noticed near restaurant policeman.ACC.
‘The detective said that tonight the suspect immediately noticed the policeman near the restaurant’
Подозреваемый сразу заметил полицейского?
Did the suspect immediately notice the policeman?
ДА/ YES
12. Продавщица, которая ранним утром кассиршу нагло оскорбила по телефону, приготовилась работать весь день.
Saleswoman, who.NOM early morning cashier.ACC rudely insulted on phone, prepared to_work all day.
‘The saleswoman, who early in the morning rudely insulted the cashier on the phone, prepared to work all day.’
Кассирша грубо оскорбила продавщицу по телефону?
Did the cashier rudely insult the saleswoman on the phone?
НЕТ/ NO
Продавщица, которую ранним утром кассирша нагло оскорбила по телефону, приготовилась работать весь день.
Saleswoman, who.ACC early morning cashier.NOM rudely insulted on phone, prepared to_work all day.
‘The saleswoman, whom early in the morning the cashier rudely insulted on the phone, prepared to work all day.’
Кассирша грубо оскорбила продавщицу по телефону?
Did the cashier rudely insult the saleswoman on the phone?
ДА/ YES
Продавщица сказала, что ранним утром кассиршу нагло оскорбила по телефону кладовщица.
Saleswoman said, that early morning cashier.ACC rudely insulted on phone storekeeper.NOM.
‘The saleswoman said that early in the morning the storekeeper rudely insulted the cashier on the phone.’
Did the cashier rudely insult the storekeeper on the phone?
НЕТ/ NO

Предавщица сказала, что ранним утром кассирша нагло оскорбила по телефону кладовщицу.
Saleswoman said, that early morning cashier.NOM rudely insulted on phone storekeeper.ACC.
‘The saleswoman said that early in the morning the cashier rudely insulted the storekeeper on the phone.’
Did the cashier rudely insult the storekeeper on the phone?
ДА/ YES

13. Полицейский, который вчера ночью преступника специально ранил в живот, обронил револьвер во время погони.
Policeman, who.NOM yesterday night criminal.ACC purposefully wounded in stomach, dropped revolver at_time pursuit.
‘The policeman, who last night purposefully wounded the criminal in the stomach, dropped his revolver during the chase.’
Did the policeman wound the criminal in the stomach?
ДА/ YES

Полицейский, которого вчера ночью преступник специально ранил в живот, обронил револьвер во время погони.
Policeman, who.ACC yesterday night criminal.NOM purposefully wounded in stomach, dropped revolver at_time pursuit.
‘The policeman, whom last night the criminal purposefully wounded in the stomach, dropped his revolver during the chase.’
Did the policeman wound the criminal in the stomach?
НЕТ/ NO

Полицейский сказал, что вчера ночью преступника специально ранил в живот охранник.
Policeman said, that yesterday night criminal.ACC purposefully wounded in stomach guard.NOM.
‘The policeman said that last night the guard purposefully wounded the criminal in the stomach.’
Охранник ранил преступника в живот?
Did the guard wound the criminal in the stomach?
ДА/YES
Полицейский сказал, что вчера ночью преступник специально ранил в живот охранника.
Policeman said, that yesterday night criminal.NOM purposefully wounded in stomach guard.ACC.
‘The policeman said that last night the criminal purposefully wounded the guard in the stomach.’
Охранник ранил преступника в живот?
Did the guard wound the criminal in the stomach?
НЕТ/NO
14. Официантка, которая после обеда повариху громко поблагодарила за помощь, продолжила работать.
Waitress, who.NOM after lunch chef.ACC loudly thanked for help, continued to_work.
‘The waitress, who after lunch loudly thanked the chef for help, continued to work.’
Официантка громко поблагодарила повариху за помощь?
Did the waitress loudly thank the chef for help?
ДА/YES
Официантка, которую после обеда повариха громко поблагодарила за помощь, продолжила работать.
Waitress, who.ACC after lunch chef.NOM loudly thanked for help, continued to_work.
‘The waitress, whom after lunch the chef loudly thanked for help, continued to work.’
Официантка громко поблагодарила повариху за помощь?
Did the waitress loudly thank the chef for help?
НЕТ/NO
Официантка сказала, что после обеда повариху громко поблагодарила за помощь буфетчица.
Waitress said, that after lunch chef.ACC loudly thanked for help barmaid.NOM.
‘The waitress said that after lunch the barmaid loudly thanked the chef for help.’
Буфетчица громко поблагодарила повариху за помощь?
Did the barmaid loudly thank the chef for help?
ДА/YES
Официантка сказала, что после обеда повариха громко поблагодарила за помощь буфетчицу.
Waitress said, that after lunch chef.NOM loudly thanked for help barmaid.ACC.
‘The waitress said that after lunch the chef loudly thanked the barmaid for help.’
Did the barmaid loudly thank the chef for help?
НЕТ/ NO

15. Сержант, который с самого начала генерала слегка недолюбил за хвастовство, получил медаль за отвагу.
Sergeant, who.NOM from very beginning general.ACC slightly disliked for bragging, received medal for bravery.
‘The sergeant, who from the very beginning slightly disliked the general for bragging, received a medal for his bravery.’

Did the general dislike the sergeant for bragging?
НЕТ/ NO

Сержант, которого с самого начала генерал слегка недолюбил за хвастовство, получил медаль за отвагу.
Sergeant, who.ACC from very beginning general.NOM slightly disliked for bragging, received medal for bravery.
‘The sergeant, whom from the very beginning the general slightly disliked for bragging, received a medal for his bravery.’

Did the general dislike the sergeant for bragging?
ДА/ YES

Сержант сказал, что с самого начала генерала слегка недолюбил за хвастовство майор.
Sergeant said, that from very beginning general.ACC slightly disliked for bragging major.NOM.
‘The sergeant said that from the very beginning the major slightly disliked the general for bragging.’

Did the general dislike the major for bragging?
НЕТ/ NO

Сержант сказал, что с самого начала генерал слегка недолюбил за хвастовство майора.
Sergeant said, that from very beginning general.NOM slightly disliked for bragging major.ACC.
‘The sergeant said that from the very beginning the general slightly disliked the major for bragging.’

Did the general dislike the major for bragging?
ДА/ YES
16. Костюмерша, которая после спектакля гримершу жестоко раскритиковала за медлительность, хотела написать жалобу.
Dresser, who.NOM after performance makeup_person.ACC severely criticized for slowness, wanted to write complaint.
‘The dresser, who after the performance severely criticized the makeup person for slowness, wanted to write a complaint.’
Критиковала ли гримерша костюмершу за медлительность?
Did the makeup person criticize the dresser for slowness?
НЕТ/ NO
Костюмерша, которую после спектакля гримерша жестоко раскритиковала за медлительность, хотела написать жалобу.
Dresser, who.ACC after performance makeup_person.NOM severely criticized for slowness, wanted to write complaint.
‘The dresser, whom after the performance the makeup person severely criticized for slowness, wanted to write a complaint.’
Критиковала ли гримерша костюмершу за медлительность?
Did the makeup person criticize the dresser for slowness?
ДА/ YES
Костюмерша сказала, что после спектакля гримерша жестоко раскритиковала за медлительность парикмахершу.
Dresser said that after performance makeup_person.ACC severely criticized for slowness hairdresser.NOM.
‘The dresser said that after the performance the hairdresser severely criticized the makeup person for slowness.’
Критиковала ли гримерша парикмахершу за медлительность?
Did the makeup person criticize the hairdresser for slowness?
НЕТ/ NO
Костюмерша сказала, что после спектакля гримерша жестоко раскритиковала за медлительность парикмахершу.
Dresser said that after performance makeup_person.NOM severely criticized for slowness hairdresser.ACC.
‘The dresser said that after the performance the makeup person severely criticized the hairdresser for slowness.’
Критиковала ли гримерша парикмахершу за медлительность?
Did the makeup person criticize the hairdresser for slowness?
ДА/ YES
17. Врач, который до полудня пациента неохотно посетил в больнице, записал рекомендации в блокноте.
Doctor, who.NOM until noon patient.ACC reluctantly visited in hospital, recorded recommendations on notepad.
‘The doctor, who before noon reluctantly visited the patient in the hospital, recorded his recommendations on a notepad.’

Did the doctor visit the patient?

ДА/ YES

Doctor, whom before noon patient.NOM reluctantly visited in hospital, recorded recommendations on notepad.

‘The doctor said that before noon the paramedic reluctantly visited the patient in the hospital.’

Did the paramedic visit the patient?

ДА/ YES

Stripper, who.NOM at time of_performance visitor.ACC immediately recognized by hair, disappeared in darkness of.club.

‘The stripper, who during the performance immediately recognized the visitor by her hair, disappeared in the darkness of the club.’

Did the stripper recognize the visitor by her hair?

ДА/ YES

Stripper, who.NOM at time of_performance visitor.ACC immediately recognized by hair, disappeared in darkness of.club.

‘The stripper, who during the performance immediately recognized the visitor by her hair, disappeared in the darkness of the club.’
Stripper, who at time of performance visitor immediately recognized by hair, disappeared in darkness of club.

'The stripper, whom during the performance the visitor immediately recognized by her hair, disappeared in the darkness of the club.'

Did the stripper recognize the visitor by her hair?

YES/DA

Стриптизёрша узнала посетительницу по ее волосам?

Did the waitress recognize the visitor by her hair?

NO/НЕТ

Стриптизерша сказала, что во время выступления посетительницу сразу узнала по волосам официантка.

Stripper said, that at time of performance visitor immediately recognized by hair waitress.

'The stripper said that during the performance the waitress immediately recognized the visitor by her hair.'

Did the waitress recognize the visitor by her hair?

YES/DA

Стриптизёрша сказала, что во время выступления посетительницу сразу узнала по волосам официантку.

Stripper said, that at time of performance visitor immediately recognized by hair waitress.

'The stripper said that during the performance the visitor immediately recognized the waitress by her hair.'

Did the waitress recognize the visitor by her hair?

NO/НЕТ

Предприниматель, который еще в декабре инвестора легко заинтересовал во время дискуссии, рассмотрел предложение о сотрудничестве.

Entrepreneur, who yet in December investor easily interested at time of discussion, considered offer of collaboration.

'The entrepreneur, who had easily interested the investor during the discussion in December, considered the offer of collaboration.'

Did the investor interest the entrepreneur in December?

NO/НЕТ

Предприниматель, которого еще в декабре инвестор легко заинтересовал во время дискуссии, рассмотрел предложение о сотрудничестве.

Entrepreneur, who yet in December investor easily interested at time of discussion, considered offer of collaboration.
‘The entrepreneur, whom the investor had easily interested during the discussion in December, considered the offer of collaboration.’

Заинтересовал ли инвестор предпринимателя в декабре?

Did the investor interest the entrepreneur in December?

ДА/ YES

Предприниматель сказал, что еще в декабре инвестора легко заинтересовал во время дискуссии банкир.

Entrepreneur said, that yet in December investor.ACC easily interested at time_of discussion banker.NOM.

‘The entrepreneur said that in December the banker had easily interested the investor during the discussion.’

Заинтересовал ли инвестор банкира в декабре?

Did the investor interest the banker in December?

НЕТ/ NO

Предприниматель сказал, что еще в декабре инвестор легко заинтересовал во время дискуссии банкира.

Entrepreneur said, that yet in December investor.NOM easily interested at time_of discussion banker.ACC.

‘The entrepreneur said that in December the investor had easily interested the banker during the discussion.’

Заинтересовал ли инвестор банкира в декабре?

Did the investor interest the banker in December?

ДА/ YES

20. Невеста, которая перед церемонией свидетельницу грубо обозвала без причины, зацепилась платьем за ветку.

Bride, who.NOM before ceremony witness.ACC roughly insulted without reason, got_caught by_dress on branch.

‘The bride, who before the ceremony roughly insulted the bridesmaid with no reason, got caught her dress on a branch.

Оскорбила ли свидетельница невесту до церемонии?

Did the bridesmaid insult the bride before the ceremony?

НЕТ/ NO

Невеста, которую перед церемонией свидетельница грубо обозвала без причины, зацепилась платьем за ветку.

Bride, who.ACC before ceremony witness.NOM roughly insulted without reason, got_caught by_dress on branch.

‘The bride, whom before the ceremony the bridesmaid roughly insulted with no reason, got caught her dress on a branch.

Оскорбила ли свидетельница невесту до церемонии?
Did the bridesmaid insult the bride before the ceremony?
ДА/ YES
Невеста сказала, что перед церемонией свидетельницу грубо обозвала без причины тамаду.
Bride said, that before ceremony witness.ACC roughly insulted without reason toastmaster.NOM.
‘The bride said that before the ceremony the bridesmaid roughly insulted the toastmaster.
Оскорбила ли свидетельница тамаду до церемонии?
Did the bridesmaid insult the toastmaster before the ceremony?
НЕТ/ NO
Невеста сказала, что перед церемонией свидетельницу грубо обозвала без причины тамаду.
Bride said, that before ceremony witness.NOM roughly insulted without reason toastmaster.ACC.
‘The bride said that before the ceremony the bridesmaid roughly insulted the toastmaster.
Did the grandfather kiss his grandson on his cheek?
ДА/ YES
Дедушка, который вчера вечером внука крепко поцеловал в щеку, рассказал историю про слона.
Grandfather, who.NOM yesterday night grandson.ACC tightly kissed on cheek, told story about elephant.
‘The grandfather, who last night firmly kissed his grandson on his cheek, told a story about an elephant.’
Поцеловал ли дедушка внука в щеку?
Did the grandfather kiss his grandson on his cheek?
ДА/ YES
Дедушка, которого вчера вечером внук крепко поцеловал в щеку, рассказал историю про слона.
Grandfather, who.ACC yesterday night grandson.NOM tightly kissed on cheek, told story about elephant.
‘The grandfather, whom last night his grandson firmly kissed on his cheek, told a story about an elephant.’
Писали ли дедушка внука в щеку?
Did the grandfather kiss his grandson on his cheek?
НЕТ/ NO
Дедушка сказал, что вчера вечером внука крепко поцеловал в щеку отец.
Grandfather said, that yesterday night grandson tightly kissed on cheek father.

'The grandfather said that last night the father firmly kissed his grandson on his cheek.'

Did the father kiss his grandson on his cheek?

ДА/ YES

Дедушка сказал, что вчера вечером внук крепко поцеловал в щеку отца.

Grandfather said, that yesterday night grandson tightly kissed on cheek father.

'Ve the grandfather said that last night the grandson firmly kissed his father on his cheek.'

Did the father kiss his grandson on his cheek?

НЕТ/ NO

22. Skater, who before competition runner by chance saw on platform, hid in locker room.

'The skater, who before the competition accidently saw the runner on the platform, hid in the locker room.'

Did the skater see the runner on the platform?

ДА/ YES

Skater said, that before competition runner by chance saw on platform skier.

'Ve the skater said that before the competition the skier accidently saw the runner on the platform.'

Did the skier see the runner on the platform?

НЕТ/ NO
Фигуристка сказала, что перед соревнованиями бегунья случайно увидела на трибуне лыжницу.
Skater said, that before competition runner.NOM by_chance saw on platform skier.ACC.
'The skater said that before the competition the runner accidently saw the skier on the platform.'

Лыжница увидела бегунью на трибуне?
Did the skier see the runner on the platform?
Нет/ No

23. Мэр, который во вторник губернатора неожиданно обрадовал после пресс-конференции, ожидал успеха на выборах.
Mayor, who.NOM on Tuesday Governor.ACC unexpectedly pleased after press-conference, expected success in elections.
'The Mayor, who on Tuesday unexpectedly pleased the Governor after the press-conference, expected success in the elections.'
Губернатор неожиданно обрадовал мера?
Did the Governor unexpectedly please the Mayor?
Нет/ NO

Мэр, которого во вторник губернатор неожиданно обрадовал после пресс-конференции, ожидал успеха на выборах.
Mayor, who.ACC on Tuesday Governor.ACC unexpectedly pleased after press-conference, expected success in elections.
'The Mayor, whom on Tuesday the Governor unexpectedly pleased after the press-conference, expected success in the elections.'
Губернатор неожиданно обрадовал мера?
Did the Governor unexpectedly please the Mayor?
Да/ YES

Мэр сказал, что во вторник губернатора неожиданно обрадовал после пресс-конференции юриста.
Mayor said, that on Tuesday Governor.ACC unexpectedly pleased after press-conference lawyer.NOM.
'The Mayor said that on Tuesday the lawyer unexpectedly pleased the Governor after the press-conference.'
Губернатор неожиданно обрадовал юриста?
Did the Governor unexpectedly please the lawyer?
Нет/ NO

Мэр сказал, что во вторник губернатор неожиданно обрадовал после пресс-конференции юриста.
Mayor said, that on Tuesday Governor.ACC unexpectedly pleased after press-conference lawyer.ACC.
’The Mayor said that on Tuesday the Governor unexpectedly pleased the lawyer after the press-conference.’

Губернатор неожиданно обрадовал юриста?
Did the Governor unexpectedly please the lawyer?
ДА/ YES

24. Ведьма, которая во время пира колдунью небрежно толкнула в огненную яму, выучила все заклинания.
Witch, who.NOM at time of feast hag.ACC carelessly pushed into fiery pit, learned all spells.
’The witch, who during the feast carelessly pushed the hag into the fiery pit, learned all the spells.’
Колдунья толкнула ведьму в огненную яму?
Did the hag push the witch into the fiery pit?
НЕТ/ NO

Ведьма, которую во время пира колдунью небрежно толкнула в огненную яму, выучила все заклинания.
Witch, who.ACC at time of feast hag.NOM carelessly pushed into fiery pit, learned all spells.
’The witch, whom during the feast the hag carelessly pushed into the fiery pit, learned all the spells.’
Колдунья толкнула ведьму в огненную яму?
Did the hag push the witch into the fiery pit?
ДА/ YES

Ведьма сказала, что во время пира колдунью небрежно толкнула в огненную яму волшебницу.
Witch said, that at time of feast hag.ACC carelessly pushed into fiery pit fairy.NOM.
’The witch said that during the feast the fairy carelessly pushed the hag into the fiery pit.’
Колдунья толкнула волшебницу в огненную яму?
Did the hag push the fairy into the fiery pit?
НЕТ/ NO

Ведьма сказала, что во время пира колдунью небрежно толкнула в огненную яму волшебницу.
Witch said, that at time of feast hag.NOM carelessly pushed into fiery pit fairy.ACC.
’The witch said that during the feast the hag carelessly pushed the fairy into the fiery pit.’
Колдунья толкнула волшебницу в огненную яму?
Did the hag push the fairy into the fiery pit?
ДА/ YES

25. Король, который давным-давно принца по-крупному обманул про клад, обещал хранить тайну вовеки.
King, who NOM long ago prince ACC largely deceived about treasure, promised to keep secret forever.
‘The king, who long ago largely deceived the prince about the treasure, promised to keep the secret forever.’

Did the king deceive the prince about the treasure?
DA / YES

King, who ACC long ago prince NOM largely deceived about treasure, promised to keep secret forever.
‘The king, whom long ago the prince largely deceived about the treasure, promised to keep the secret forever.’

Did the king deceive the prince about the treasure?
HET / NO

King said that long ago prince ACC largely deceived about treasure knight NOM.
‘The king said that long ago the knight largely deceived the prince about the treasure.’

Did the knight deceive the prince about the treasure?
DA / YES

King said that long ago prince NOM largely deceived about treasure knight ACC.
‘The king said that long ago the prince largely deceived the knight about the treasure.’

Did the knight deceive the prince about the treasure?
HET / NO

26. Уборщица, которая среди белого дня няню беспощадно обвинила в воровстве, ушла домой без оплаты.
Cleaning lady, who NOM during white day nanny ACC mercilessly accused of stealing, went home without pay.
‘The cleaning lady, who during a high day mercilessly accused the nanny of stealing, went home without pay.’

Did the cleaning lady accuse the nanny of stealing?
DA / YES

Уборщица, которую среди белого дня няню беспощадно обвинила в воровстве, ушла домой без оплаты.
Cleaning_lady, who.ACC during white day nanny.NOM mercilessly accused of stealing, went home without pay.
‘The cleaning lady, whom during a high day the nanny mercilessly accused of stealing, went home without pay.’
Уборщица обвинила няню в воровстве?
Did the cleaning lady accuse the nanny of stealing?
НЕТ/ NO
Уборщица сказала, что среди белого дня няню беспощадно обвинила в воровстве садовница.
Cleaning_lady said, that during white day nanny.ACC mercilessly accused of stealing gardener.NOM.
‘The cleaning lady said that during a high day the gardener mercilessly accused the nanny of stealing.’
Садовница обвинила няню в воровстве?
Did the gardener accuse the nanny of stealing?
ДА/ YES
Уборщица сказала, что среди белого дня няню беспощадно обвинила в воровстве садовницу.
Cleaning_lady said, that during white day nanny.ACC mercilessly accused of stealing gardener.ACC.
‘The cleaning lady said that during a high day the nanny mercilessly accused the gardener of stealing.’
Садовница обвинила няню в воровстве?
Did the gardener accuse the nanny of stealing?
НЕТ/ NO
27. Химик, который на прошлой неделе биолога радостно поздравил с публикацией статьи, получил приз за исследования.
Chemist, who.NOM last week biologist.ACC happily congratulated with publication of_article, won prize for research.
‘The chemist, who last week happily congratulated the biologist on publication of the article, won a prize for his research.’
Биолог поздравил химика?
Did the biologist congratulate the chemist?
НЕТ/ NO
Химик, которого на прошлой неделе биолог радостно поздравил с публикацией статьи, получил приз за исследования.
Chemist, who.ACC last week biologist.NOM happily congratulated with publication of_article, won prize for research.
The chemist, whom last week the biologist happily congratulated on publication of the article, won a prize for his research.

Did the biologist congratulate the chemist?

ДА/ YES

The chemist said that last week the biologist happily congratulated on publication of the article.

Did the biologist congratulate the physicist?

НЕТ/ NO

The chemist said that last week the physicist happily congratulated the biologist on publication of the article.

Did the biologist congratulate the mother?

НЕТ/ NO

The nun, who during the service accidentally touched on mother's elbow, got confused at the altar.

Did the mother touch the nun on her elbow?

НЕТ/ NO

The nun, whom during the service the mother accidentally touched on her elbow, got confused at the altar.
Did the mother touch the nun on her elbow?
ДА/ YES
Монахиня сказала, что во время службы матушку случайно задела за локоть прихожанка.
Nun said, that at time of_service mother.ACC accidentally touched on elbow parishioner.NOM.
‘The nun said that during the service the parishioner accidentally touched the mother on her elbow.’
Матушка задела прихожанку за локоть?
Did the mother touch the parishioner on her elbow?
НЕТ/ NO
Монахиня сказала, что во время службы матушка случайно задела за локоть прихожанку.
Nun said, that at time of_service mother.NOM accidentally touched on elbow parishioner.ACC.
‘The nun said that during the service the mother accidentally touched the parishioner on her elbow.’
Матушка задела прихожанку за локоть?
Did the mother touch the parishioner on her elbow?
ДА/ YES
29. Эксперт, который в конце года менеджера страшно разочаровал цифрами в отчете, прервал контракт с фирмой.
Expert, who.NOM at end of_year manager.ACC terribly disappointed by_figures in report, broke contract with firm.
‘The expert, who at end of the year terribly disappointed the manager by the figures in the report, broke off contract with the firm.
Эксперт разочаровал менеджера цифрами?
Did the expert disappoint the manager by the figures?
ДА/ YES
Эксперт, которого в конце года менеджер страшно разочаровал цифрами в отчете, прервал контракт с фирмой.
Expert, who.ACC at end of_year manager.NOM terribly disappointed by_figures in report, broke contract with firm.
‘The expert, whom at end of the year the manager terribly disappointed by the figures in the report, broke off contract with the firm.
Эксперт разочаровал менеджера цифрами?
Did the expert disappoint the manager by the figures?
НЕТ/ NO
Эксперт сказал, что в конце года менеджера страшно разочаровал цифрами в отчете бухгалтер.
Expert said, that at end of year manager.ACC terribly disappointed by figures in report accountant.NOM.

‘The expert said that at the end of the year the accountant terribly disappointed the manager by the figures in the report.’

Бухгалтер разочаровал менеджера цифрами?
Did the accountant disappoint the manager by the figures?
ДА/ YES

Эксперт сказал, что в конце года менеджер страшно разочаровал цифрами в отчете бухгалтера.
Expert said, that at end of year manager.NOM terribly disappointed by figures in report accountant.ACC.

‘The expert said that at the end of the year the manager terribly disappointed the accountant by the figures in the report.’

Бухгалтер разочаровал менеджера цифрами?
Did the accountant disappoint the manager by the figures?
НЕТ/ NO

30. Хозяйка, которая после прогулки старушку сильно расстроила своим рассказом, легла на диван в гостиной.
Housewife, who.NOM after walk old_lady.ACC really upset by story, lay on couch in living_room.

‘The housewife, who after the walk really upset the old lady by her story, lay on the couch in the living room.’

Хозяйка расстроила старушку своим рассказом?
Did the housewife upset the old lady by her story?
ДА/ YES

Хозяйка, которую после прогулки старушка сильно расстроила своим рассказом, легла на диван в гостиной.
Housewife, who.ACC after walk old_lady.NOM really upset by story, lay on couch in living_room.

‘The housewife, whom after the walk the old lady really upset by her story, lay on the couch in the living room.’

Хозяйка расстроила старушку своим рассказом?
Did the housewife upset the old lady by her story?
НЕТ/ NO

Хозяйка сказала, что после прогулки старушку сильно расстроила своим рассказом тетушка.
Housewife said, that after walk old_lady.ACC really upset by story aunty.NOM.
‘The housewife said that after the walk the aunty really upset the old lady by her story.’
Did the aunty upset the old lady by her story?
ДА / YES

Housewife said, that after walk old_lady.NOM really upset by story aunty.ACC.
‘The housewife said that after the walk the old lady really upset the aunty by her story.’

Тетушка расстроила старушку своим рассказом?
Did the aunty upset the old lady by her story?
НЕТ / NO

31. Администратор, который в понедельник библиотекаря строго упрекнул за маленькую оплошность, написал жалобу в гневе.
Administrator, who.NOM on Monday librarian.ACC severely reproached for little mistake, wrote complaint in anger.
‘The administrator, who on Monday severely reproached the librarian for a little mistake, wrote a complaint in anger.’

Библиотекарь упрекнул администратора за маленькую ошибку?
Did the librarian reproach the administrator for a little mistake?
НЕТ / NO

Администратор, которого в понедельник библиотекарь строго упрекнул за маленькую оплошность, написал жалобу в гневе.
Administrator, who.ACC on Monday librarian.NOM severely reproached for little mistake, wrote complaint in anger.
‘The administrator, whom on Monday the librarian severely reproached for a little mistake, wrote a complaint in anger.’

Библиотекарь упрекнул администратора за маленькую ошибку?
Did the librarian reproach the administrator for a little mistake?
ДА / YES

Администратор сказал, что в понедельник библиотекарь строго упрекнул за маленькую оплошность учитель.
Administrator said, that on Monday librarian.ACC severely reproached for little mistake teacher.NOM.
‘The administrator said that on Monday the teacher severely reproached the librarian for a little mistake.’

Библиотекарь упрекнул учитель за маленькую ошибку?
Did the librarian reproach the teacher for a little mistake?
НЕТ / NO

Администратор сказал, что в понедельник библиотекарь строго упрекнул за маленькую оплошность учитель.
Administrator said, that on Monday librarian.NOM severely reproached for little mistake teacher.ACC.
‘The administrator said that on Monday the librarian severely reproached the teacher for a little mistake.’

Библиотекарь упрекнул учителя за маленькую ошибку?
Did the librarian reproach the teacher for a little mistake?
ДА/ YES

32. Бухгалтерша, которая перед собранием статистику быстро предупредила об ошибке, подвела итоги в спешке.
Accountant, who.NOM before meeting statistician.ACC quickly warned about error, summarized results in a_hurry.
‘The accountant, who before the meeting quickly warned the statistician about the error, summarized the results in a hurry.’

Статистика предупредила бухгалтершу об ошибке?
Did the statistician warn the accountant about the error?
НЕТ/ NO

Бухгалтерша, которую перед собранием статистику быстро предупредила об ошибке, подвела итоги в спешке.
Accountant, who.ACC before meeting statistician.NOM quickly warned about error, summarized results in a_hurry.
‘The accountant, whom before the meeting the statistician quickly warned about the error, summarized the results in a hurry.’

Статистика предупредила бухгалтершу об ошибке?
Did the statistician warn the accountant about the error?
ДА/ YES

Бухгалтерша сказала, что перед собранием статистику быстро предупредила об ошибке аудиторша.
Accountant said, that before meeting statistician.ACC quickly warned about error auditor.NOM.
‘The accountant said that before the meeting the auditor quickly warned the statistician about the error.’

Статистика предупредила аудиторшу об ошибке?
Did the statistician warn the auditor about the error?
НЕТ/ NO

Бухгалтерша сказала, что перед собранием статистику быстро предупредила об ошибке аудиторшу.
Accountant said, that before meeting statistician.NOM quickly warned about error auditor.ACC.
‘The accountant said that before the meeting the statistician quickly warned the auditor about the error.’

Did the statistician warn the auditor about the error?

ДА / YES

33. Пожарный, который сегодня днем медика случайно заметил в горящем доме, вызвал помощь по рации.

Did the fireman notice the medic in the burning house?

ДА / YES

Пожарный, которого сегодня днем медик случайно заметил в горящем доме, вызвал помощь по рации.

Did the policeman notice the medic in the burning house?

НЕТ / NO

Пожарный сказал, что сегодня днем медик случайно заметил в горящем доме полицейский.

Did the policeman notice the medic in the burning house?

ДА / YES
34. Барменша, которая около стойки бара брюнетку грубо толкнула в плечо, уронила стакан с вином.
Barmaid, who.NOM near [the] bar brunette.ACC rudely pushed to shoulder, dropped glass with wine.
‘The barmaid, who near the bar rudely pushed the brunette on her shoulder, dropped a glass of wine.’
Толкнула ли барменша брюнетку в плечо?
Did the barmaid push the brunette on her shoulder?
ДА/ YES
Барменша, которую около стойки бара брюнетка грубо толкнула в плечо, уронила стакан с вином.
Barmaid, who.ACC near [the] bar brunette.NOM rudely pushed to shoulder, dropped glass with wine.
‘The barmaid, whom near the bar the brunette rudely pushed on her shoulder, dropped a glass of wine.’
Толкнула ли барменша брюнетку в плечо?
Did the barmaid push the brunette on her shoulder?
НЕТ/ NO
Барменша сказала, что около стойки бара брюнетка грубо толкнула в плечо официантку.
Barmaid said, that near [the] bar brunette.ACC rudely pushed to shoulder waitress.NOM.
‘The barmaid said that near the bar the waitress rudely pushed the brunette on her shoulder.’
Толкнула ли официантка брюнетку в плечо?
Did the waitress push the brunette on her shoulder?
ДА/ YES
Барменша сказала, что около стойки бара брюнетка грубо толкнула в плечо официантку.
Barmaid said, that near [the] bar brunette.NOM rudely pushed to shoulder waitress.ACC.
‘The barmaid said that near the bar the brunette rudely pushed the waitress on her shoulder.’
Толкнула ли официантка брюнетку в плечо?
Did the waitress push the brunette on her shoulder?
НЕТ/ NO

35. Адвокат, который на прошлой неделе нотариуса уверенно рекомендовал за его заслуги, назначил встречу на вторник.
Lawyer, who.NOM on last week notary.ACC confidently recommended for his services, arranged meeting on Tuesday.
‘The lawyer, who last week confidently recommended the notary for his services, arranged the meeting on Tuesday.’

Did the notary recommend the lawyer for his services?

НЕТ/ NO

Адвокат, которого на прошлой неделе нотариус уверенно рекомендовал за его заслуги, назначил встречу на вторник.

‘The lawyer, whom last week the notary confidently recommended for his services, arranged the meeting on Tuesday.’

Did the notary recommend the lawyer for his services?

ДА/ YES

Lawyer said, that on last week notary. ACC confidently recommended for his services judge. NOM.

‘The lawyer said that last week the judge confidently recommended the notary for his services.’

Did the notary recommend the judge for his services?

НЕТ/ NO

Адвокат сказал, что на прошлой неделе нотариус уверенно рекомендовал за его заслуги судью.

‘The lawyer, who after second class classmate. ACC silently provoked for fight, explained the situation after incident.

Did the notary recommend the judge for his services?

ДА/ YES

Одноклассница спровоцировала хулиганку на драку?
Did the classmate provoke the bully for a fight?
НЕТ/ NO

Хулиганка, которую после второго урока одноклассница молча спровоцировала на драку, объяснила ситуацию после происшествия.
Bully, who.ACC after second class classmate.NOM silently provoked for fight, explained situation after incident.
‘The bully, whom after the second class her classmate silently provoked for a fight, explained the situation after the incident.’

Одноклассница спровоцировала хулиганку на драку?
Did the classmate provoke the bully for a fight?
ДА/ YES

Хулиганка сказала, что после второго урока одноклассницу молча спровоцировала на драку старшеклассницу.
Bully said, that after second class classmate.ACC silently provoked for fight higher_grade_student.NOM.
‘The bully said that after the second class the student from a higher grade silently provoked her classmate for a fight.’

Одноклассница спровоцировала старшеклассницу на драку?
Did the classmate provoke the student from a higher grade for a fight?
НЕТ/ NO

Хулиганка сказала, что после второго урока одноклассницу молча спровоцировала на драку старшеклассницу.
Bully said, that after second class classmate.NOM silently provoked for fight higher_grade_student.ACC.
‘The bully said that after the second class her classmate silently provoked the student from a higher grade for a fight.’

Одноклассница спровоцировала старшеклассницу на драку?
Did the classmate provoke the student from a higher grade for a fight?
ДА/ YES

37. Сенатор, который сегодня днем президента заметно обесценил после саммита, послал письмо в конгресс.
Senator, who.NOM today afternoon President.ACC obviously disturbed after summit, sent letter to Congress.
‘The Senator, who this afternoon obviously disturbed the President after the summit, sent a letter to Congress.’

Сенатор обесценил президента после саммита?
Did the Senator disturb the President after the summit?
ДА/ YES
Сенатор, которого сегодня днем президент заметно обеспокоил после саммита, послал письмо в конгресс.

Senator, who today afternoon President.Obviously disturbed after summit, sent letter to Congress.

‘The Senator, whom this afternoon the President obviously disturbed after the summit, sent a letter to Congress.’

Сенатор обеспокоил президента после саммита?

Did the Senator disturb the President after the summit?

НЕТ / NO

Сенатор сказал, что сегодня днем президента заметно обеспокоил после саммита премьер министр.

Senator said, that today afternoon President.Obviously disturbed after summit Prime Minister.Obviously.

‘The Senator said that this afternoon the Prime Minister obviously disturbed the President after the summit’

Премьер-министр обеспокоил президента после саммита?

Did the Prime Minister disturb the President after the summit?

ДА / YES

Сенатор сказал, что сегодня днем президента заметно обеспокоил после саммита премьер-министра.

Senator said, that today afternoon President.Obviously disturbed after summit Prime Minister.

‘The Senator said that this afternoon the President obviously disturbed the Prime Minister after the summit’

Премьер-министр обеспокоил президента после саммита?

Did the Prime Minister disturb the President after the summit?

НЕТ / NO

38. Ведущая, которая во время викторины участницу явно озадачила своим комментарием, ответила вопросом на вопрос.

Show-host, who at time of quiz participant.Clearly puzzled by her comment, answered question to question.

‘The show host, who during the quiz clearly puzzled the participant by her comment, answered the question with another question.’

Ведущая озадачила участницу своим комментарием?

Did the show host puzzle the participant by her comment?

ДА / YES

Ведущая, которую во время викторины участницы явно озадачила своим комментарием, ответила вопросом на вопрос.
Show-host, who.ACC at time of_quiz participant.NOM clearly puzzled by_her comment, answered question to question.
‘The show host, whom during the quiz the participant clearly puzzled by her comment, answered the question with another question.’

Ведущая озадачила участницу своим комментарием?
Did the show host puzzle the participant by her comment?
НЕТ/ NO

Ведущая сказала, что во время викторины участницу явно озадачила своим комментарием зрительница.
Show-host said, that at time of Quiz participant.ACC clearly puzzled by_her comment viewer.NOM.
‘The show host said that during the quiz the viewer clearly puzzled the participant by her comment.’

Зрительница озадачила участницу своим комментарием?
Did the viewer puzzle the participant by her comment?
ДА/ YES

Ведущая сказала, что во время викторины участницу явно озадачила своим комментарием зрительницу.
Show-host said, that at time of quiz participant.NOM clearly puzzled by her comment viewer.ACC.
‘The show host said that during the quiz the participant clearly puzzled the viewer by her comment.’

Зрительница озадачила участницу своим комментарием?
Did the viewer puzzle the participant by her comment?
НЕТ/ NO

39. Репортер, который еще до рассвета следователя поспешно уведомил о краже, описал происшествие в деталях.
Reporter, who.NOM already before dawn investigator.ACC hastily informed about theft, described incident in detail.
‘The reporter, who already before dawn hastily informed the investigator about the theft, described the incident in detail.’

Следователь уведомил репортера о краже?
Did the investigator inform the reporter about the theft?
НЕТ/ NO

Репортер, которого еще до рассвета следователь поспешно уведомил о краже, описал происшествие в деталях.
Reporter, who.ACC already before dawn investigator.NOM hastily informed about theft, described incident in detail.
‘The reporter, whom already before dawn the investigator hastily informed about the theft, described the incident in detail.’
Следователь уведомил репортера о краже?
Did the investigator inform the reporter about the theft?
ДА/ YES
Репортер сказал, что еще до рассвета следователя поспешно уведомил о краже свидетель.
Reporter said, that already before dawn investigator.ACC hastily informed about theft
он.ACC.
‘The reporter said that already before dawn the witness hastily informed the investigator
about the theft.’
Следователь уведомил свидетеля о краже?
Did the investigator inform the witness about the theft?
НЕТ/ NO
Репортер сказал, что еще до рассвета следователь поспешно уведомил о краже свидетеля.
Reporter said, that already before dawn investigator.NOM hastily informed about theft
она.NOM.
‘The reporter said that already before dawn the investigator hastily informed the witness
about the theft.’
Следователь уведомил свидетеля о краже?
Did the investigator inform the witness about the theft?
ДА/ YES
40. Ныряльщица, которая в большом бассейне пловчиху нарочно испугала во время тренировки, уплыла в сторону.
Diver, who.NOM in big pool swimmer.ACC purposefully scared at time of_practice,
swam to side.
‘The diver, who in the big pool purposefully scared the swimmer during the practice,
swam to the side.’
Пловчиха испугала ныряльщицу во время тренировки?
Did the swimmer scare the diver during the practice?
НЕТ/ NO
Ныряльщица, которую в большом бассейне пловчиха нарочно испугала во время тренировки, уплыла в сторону.
Diver, who.ACC in big pool swimmer.NOM purposefully scared at time of_practice,
swam to side.
‘The diver, whom in the big pool the swimmer purposefully scared during the practice,
swam to the side.’
Пловчиха испугала ныряльщицу во время тренировки?
Did the swimmer scare the diver during the practice?
ДА/ YES
Ныряльщица сказала, что в большом бассейне пловчиха нарочно испугала во время тренировки синхронистка.
Diver said, that in big pool swimmer.ACC purposefully scared at time of practice synchronized_swimmer.NOM.
‘The diver said that in the big pool the synchronized swimmer purposefully scared the swimmer during the practice.’
Пловчиха испугала синхронистку во время тренировки?
Did the swimmer scare the synchronized swimmer during the practice?
НЕТ/ NO
Ныряльщица сказала, что в большом бассейне пловчиха нарочно испугала во время тренировки синхронистку.
Diver said, that in big pool swimmer.NOM purposefully scared at time of practice synchronized_swimmer.ACC.
‘The diver said that in the big pool the swimmer purposefully scared the synchronized swimmer during the practice.’
Пловчиха испугала синхронистку во время тренировки?
Did the swimmer scare the synchronized swimmer during the practice?
ДА/ YES
41. Генерал, который во время переговоров лейтенанта резко унизил у всех на глазах, допустил ошибку в битве.
General, who.NOM at time of_negotiations lieutenant.ACC suddenly humiliated with all at_eyes, made error in battle.
‘The general, who during the negotiations suddenly humiliated the lieutenant in front of everyone, committed an error in battle.’
Генерал унизил лейтенанта на глазах у всех?
Did the general humiliate the lieutenant in front of everyone?
ДА/ YES
Генерал, которого во время переговоров лейтенант резко унизил у всех на глазах, допустил ошибку в битве.
General, who.ACC at time of_negotiations lieutenant.NOM suddenly humiliated with all at_eyes, made error in battle.
‘The general, whom during the negotiations the lieutenant suddenly humiliated in front of everyone, committed an error in battle.’
Генерал унизил лейтенанта на глазах у всех?
Did the general humiliate the lieutenant in front of everyone?
НЕТ/ NO
Генерал сказал, что во время переговоров лейтенанта резко унизил у всех на глазах сержант.
General said, that at time of negotiations lieutenant suddenly humiliated with all at eyes sergeant.
‘The general said that during the negotiations the sergeant suddenly humiliated the lieutenant in front of everyone.’
Сержант унизил лейтенанта на глазах у всех?
Did the sergeant humiliate the lieutenant in front of everyone?
ДА/YES
Генерал сказал, что во время переговоров лейтенант резко унизил у всех на глазах сержанта.
General said, that at time of negotiations lieutenant suddenly humiliated with all at eyes sergeant.
‘The general said that during the negotiations the lieutenant suddenly humiliated the sergeant in front of everyone.’
Сержант унизил лейтенанта на глазах у всех?
Did the sergeant humiliate the lieutenant in front of everyone?
НЕТ/NO

42. Аптекарша, которая на прошлой неделе больную полностью запутала во время приема, прочитала рецепт еще раз.
Pharmacist, who on last week patient completely confused at time of reception, read prescription once again.
‘The pharmacist, who last week completely confused the patient during the doctor’s visit, read the prescription once again.’
Аптекарша запутала пациентку на прошлой неделе?
Did the pharmacist confuse the patient last week?
ДА/YES
Аптекарша, которую на прошлой неделе больная полностью запутала во время приема, прочитала рецепт еще раз.
Pharmacist, who on last week patient completely confused at time of reception, read prescription once again.
‘The pharmacist, whom last week the patient completely confused during the doctor’s visit, read the prescription once again.’
Аптекарша запутала пациентку на прошлой неделе?
Did the pharmacist confuse the patient last week?
НЕТ/NO
Аптекарша сказала, что на прошлой неделе больную полностью запутала во время приема медсестра.
The pharmacist said that last week the patient completely confused the nurse during the doctor’s visit.

Медсестра запутала пациентку на прошлой неделе?
Did the nurse confuse the patient last week?
ДА/ YES

The pharmacist said that last week the patient completely confused the nurse during the doctor’s visit.

Медсестра запутала пациентку на прошлой неделе?
Did the nurse confuse the patient last week?
НЕТ/ NO

The philosopher, who last month literally quoted the linguist at the conference, taught a course at Cambridge.

Лингвист процитировал философа на конференции?
Did the linguist quote the philosopher at the conference?
НЕТ/ NO
‘The philosopher said that last month the mathematician literally quoted the linguist at the conference.’

Лингвист процитировал математика на конференции?
Did the linguist quote the mathematician at the conference?
НЕТ/ NO

Философ сказал, что в прошлом месяце лингвист дословно процитировал на конференции математика.

Philosopher said, that in last month linguist.NOM literally quoted at conference mathematician.ACC.

‘The philosopher said that last month the linguist literally quoted the mathematician at the conference.’

Лингвист процитировал математика на конференции?
Did the linguist quote the mathematician at the conference?
ДА/ YES

44. Шведка, которая не в первый раз француженку беспощадно обыграла в теннисном матче, уронила ракетку на корт.

Swedish_woman, who.NOM not for first time Frenchwoman.ACC mercilessly beat in tennis match, dropped racket on court.

‘The Swedish woman, who not for the first time mercilessly beat the Frenchwoman in the tennis match, dropped her racket on court.’

Победила француженка шведку в теннисном матче?
Did the Frenchwoman beat the Swedish woman in the tennis match?
НЕТ/ NO

Шведка, которую не в первый раз француженка беспощадно обыграла в теннисном матче, уронила ракетку на корт.

Swedish_woman, who.ACC not for first time Frenchwoman.NOM mercilessly beat in tennis match, dropped racket on court.

‘The Swedish woman, whom not for the first time the Frenchwoman mercilessly beat in the tennis match, dropped her racket on court.’

Победила француженка шведку в теннисном матче?
Did the Frenchwoman beat the Swedish woman in the tennis match?
ДА/ YES

Шведка сказала, что не в первый раз француженка беспощадно обыграла в теннисном матче украинка.

Swedish_woman said, that not for first time Frenchwoman.ACC mercilessly beat in tennis match Ukrainian_woman.NOM.

‘The Swedish woman said that not for the first time the Ukrainian mercilessly beat the Frenchwoman in the tennis match.’

Победила француженка украинку в теннисном матче?
Did the Frenchwoman beat the Ukrainian in the tennis match?
Нет/ NO
Шведка сказала, что не в первый раз француженка беспощадно обыграла в теннисном матче украинку.
Swedish_woman said, that not for first time Frenchwoman.NOM mercilessly beat in tennis match Ukrainian_woman.ACC.
‘The Swedish woman said that not for the first time the Frenchwoman mercilessly beat the Ukrainian in the tennis match.’
Победила француженка украинку в теннисном матче?
Did the Frenchwoman beat the Ukrainian in the tennis match?
Да/ YES

45. Соло-гитарист, который с детства ударника беззаветно любил за его талант, основал группу в 1988 году.
Solo-guitarist, who.NOM from childhood drummer.ACC devotedly loved for his talent, established band in 1988 year.
‘The solo-guitarist, who from childhood devotedly loved the drummer for his talent, established the band in 1988.’
Соло-гитарист любил барабанщика за его талант?
Did the solo-guitarist love the drummer for his talent?
Да/ YES

Соло-гитарист, которого с детства ударник беззаветно любил за его талант, основал группу в 1988 году.
Solo-guitarist, who.ACC from childhood drummer.NOM devotedly loved for his talent, established band in 1988 year.
‘The solo-guitarist, whom from childhood the drummer devotedly loved for his talent, established the band in 1988.’
Соло-гитарист любил барабанщика за его талант?
Did the solo-guitarist love the drummer for his talent?
Нет/ NO

Соло-гитарист сказал, что с детства ударник беззаветно любил за его талант басист.
Solo-guitarist said, that from childhood drummer.ACC devotedly loved for his talent bassist.NOM.
‘The solo-guitarist said that the bassist from childhood devotedly loved the drummer for his talent’
Басист любил барабанщика за его талант?
Did the bassist love the drummer for his talent?
Да/ YES
Соло-гитарист сказал, что с детства ударник беззаветно любил за его талант басиста.
Solo-guitarist said, that from childhood drummer.NOM devotedly loved for his talent bassist.ACC.
‘The solo-guitarist said that from childhood the drummer devotedly loved the bassist for his talent’
Басист любил барабанщика за его талант?
Did the bassist love the drummer for his talent?
НЕТ/ NO

46. Скрипачка, которая во время репетиции флейтистку жестоко разгневала своим поведением, отменила концерт в пятницу.
Violinist, who.NOM at time of_rehearsal flautist.ACC brutally angered by_her behavior, cancelled concert on Friday.
‘The violinist, who during the rehearsal brutally angered the flautist by her behavior, cancelled the concert on Friday.’
Скрипачка разгневала флейтистку своим поведением?
Did the violinist anger the flautist by her behavior?
ДА/ YES
Скрипачка, которую во время репетиции флейтистка жестоко разгневала своим поведением, отменила концерт в пятницу.
Violinist, who.ACC at time of_rehearsal flautist.NOM brutally angered by_her behavior, cancelled concert on Friday.
‘The violinist, whom during the rehearsal the flautist brutally angered by her behavior, cancelled the concert on Friday.’
Скрипачка разгневала флейтистку своим поведением?
Did the violinist anger the flautist by her behavior?
НЕТ/ NO
Скрипачка сказала, что во время репетиции флейтистка жестоко разгневала своим поведением баянистка.
Violinist said that at time of_rehearsal flautist.ACC brutally angered by_her behavior accordionist.NOM.
‘The violinist said that during the rehearsal the accordionist brutally angered the flautist by her behavior.’
Баянистка разгневала флейтистку своим поведением?
Did the accordionist anger the flautist by her behavior?
ДА/ YES
Скрипачка сказала, что во время репетиции флейтистка жестоко разгневала своим поведением баянистку.
Violinist said that at time of rehearsal flautist.NOM brutally angered by her behavior accordionist.ACC.

‘The violinist said that during the rehearsal the flautist brutally angered the accordionist by her behavior.’

Баянистка разгневала флейтистку своим поведением?

Did the accordionist anger the flautist by her behavior?

НЕТ/ NO

47. Слесарь, который вчера вечером электрика сильно ударил по голове, уволился с работы.

Locksmith, who.NOM yesterday night electrician.ACC strongly hit on head, quit from job.

‘The locksmith, who last night strongly hit the electrician on his head, quit his job.’

Электрик ударил слесаря по голове?

Did the electrician hit the locksmith on his head?

НЕТ/ NO

Слесарь сказала, что вчера вечером электрика сильно ударил по голове механик.

Locksmith said, that yesterday night electrician.ACC strongly hit on head mechanic.NOM.

‘The locksmith, who last night strongly hit the electrician on his head, quit his job.’

Электрик ударил механика по голове?

Did the electrician hit the mechanic on his head?

ДА/ YES

Слесарь сказала, что вчера вечером электрика сильно ударил по голове механик.

Locksmith said, that yesterday night electrician.NOM strongly hit on head mechanic.ACC.

‘The locksmith said that last night the mechanic strongly hit the electrician on his head.’

Электрик ударил механика по голове?

Did the electrician hit the mechanic on his head?

ДА/ YES

48. Танцовщица, которая до выступления певицу бессовестно опозорила своими словами, ушла в расстроенных чувствах.
Dancer, who.NOM before performance singer.ACC shamelessly disgraced by her words, left in sad feelings.

‘The dancer, who before the performance shamelessly disgraced the singer with her words, left sad.’

Did the singer disgrace the dancer with her words?

Танцовщица, которую до выступления певица бессовестно опозорила своими словами, ушла в расстроенных чувствах.

Dancer, who.ACC before performance singer.NOM shamelessly disgraced by her words, left in sad feelings.

‘The dancer, whom before the performance the singer shamelessly disgraced with her words, left sad.’

Did the singer disgrace the dancer with her words?

Did the singer disgrace the pianist with her words?

Yes/ДА

Танцовщица сказала, что до выступления певица бессовестно опозорила своими словами пианистку.

Dancer said, that before performance singer.ACC shamelessly disgraced by her words pianist.NOM.

‘The dancer said that before the performance the pianist shamelessly disgraced the singer with her words.’

Did the singer disgrace the pianist with her words?

Did the singer disgrace the pianist with her words?

No/НЕТ

Танцовщица сказала, что до выступления певица бессовестно опозорила своими словами пианистку.

Dancer said, that before performance singer.NOM shamelessly disgraced by her words pianist.ACC.

‘The dancer said that before the performance the singer shamelessly disgraced the pianist with her words.’

Did the singer disgrace the pianist with her words?

Did the singer disgrace the pianist with her words?

Experimental Items for Experiment 2a

These materials are similar to those for Experiment 1 and 3; the difference is that the first-person pronoun was used instead of the full descriptive NP inside the embedded
clause. In order to ensure that the readers were answering comprehension questions not based on the pronoun form match/mismatch in the sentence and in the question (e.g., If it is pronoun *nas* ‘us’ in the sentence as well as in the question, the answer is YES, otherwise NO), half of the questions were formed using passive voice, so the pronoun forms did not always match for the answer to be NO.

Conditions are marked for the first item. The rest of the items are presented in the same order of conditions. Detailed descriptions can be found in the introduction for Experiment 2a (Chapter 7).

1. a. SRC [embedded-clause word order: OV (non-canonical, preferred)]

Диктатор, который недавно нас напрочь возненавидел за предательство, произнес речь на собрании.

Dictator, who.NOM recently us.ACC irreversibly came_to_hate for treason, pronounced speech at meeting.

‘The dictator, who recently came to irreversibly hate us for treason, made a speech at the meeting.’

Comprehension Question: Возненавидел ли диктатор нас за предательство?
Did the dictator hate us for treason?

Answer: **ДА/ YES**

b. Control CC for SRC [embedded-clause word order: OVS (non-canonical, dispreferred)]

Диктатор, которого недавно мы напрочь возненавидели за предательство, произнесь речь на собрании.

Dictator, who.ACC recently we.NOM irreversibly came_to_hate for treason, pronounced speech at meeting.

‘The dictator, whom recently we came to irreversibly hate for treason, made a speech at the meeting.’

Comprehension Question: Возненавидел ли диктатор нас за предательство?
Did the dictator hate us for treason?

Answer: **НЕТ/ NO**

c. ORC [embedded-clause word order: SV (canonical, preferred)]

Диктатор отметил, что недавно нас напрочь возненавидел за предательство чиновник.

Dictator noted, that recently us.ACC irreversibly came_to_hate for treason officer.NOM.

‘The dictator noted that recently the officer came to irreversibly hate us for treason.’

Comprehension Question: Возненавидел ли чиновник нас за предательство?
Did the officer hate us for treason?

Answer: **ДА/ YES**

d. Control CC for ORC [embedded-clause word order: SVO (canonical, preferred)]

Диктатор отметил, что недавно мы напрочь возненавидели за предательство чиновника.

Dictator noted, that recently we.NOM irreversibly came_to_hate for treason officer.ACC.

‘The dictator said that recently we came to irreversibly hate the officer for treason.’

Comprehension Question: Возненавидел ли чиновник нас за предательство?
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Answer: NO

2. Шведка, которая не в первый раз меня беспощадно обыграла в теннисном матче, уронила ракетку на корт.

Swedish woman, who.NOM not for first time me.ACC mercilessly beat in tennis match, dropped racket on court.

‘The Swedish woman, who not for the first time mercilessly beat me in the tennis match, dropped her racket on court.’

Была ли я обыграна шведкой в теннисном матче?
Was I beaten by the Swedish woman in the tennis match?

ДА/ YES

Шведка, которую не в первый раз я беспощадно обыграла в теннисном матче, уронила ракетку на корт.

Swedish_woman, who.ACC not for first time I.NOM mercilessly beat in tennis match, dropped racket on court.

‘The Swedish woman, whom not for the first time I mercilessly beat in the tennis match, dropped her racket on court.’

Была ли я обыграна шведкой в теннисном матче?
Was I beaten by the Swedish woman in the tennis match?

НЕТ/ NO

Шведка отметила, что не в первый раз меня беспощадно обыграла в теннисном матче украинка.

Swedish_woman noted, that not for first time me.ACC mercilessly beat in tennis match Ukrainian_woman.NOM.

‘The Swedish woman noted that not for the first time the Ukrainian mercilessly beat me in the tennis match.’

Была ли я обыграна украинкой в теннисном матче?
Was I beaten by the Ukrainian woman in the tennis match?

ДА/ YES

Шведка отметила, что не в первый раз я беспощадно обыграла в теннисном матче украинскую.

Swedish_woman noted, that not for first time I.NOM mercilessly beat in tennis match Ukrainian_woman.ACC.

‘The Swedish woman noted that not for the first time I mercilessly beat the Ukrainian in the tennis match.’

Была ли я обыграна украинкой в теннисном матче?
Was I beaten by the Ukrainian woman in the tennis match?

НЕТ/ NO

3. Химик, который на прошлой неделе меня радостно поздравил с публикацией статьи, получил приз за исследования.

Chemist, who.NOM last week me.ACC happily congratulated with publication of article, won prize for research.

‘The chemist, who happily congratulated me on publication of the article last week, won a prize for his research.’

Я поздравил химика?
Did I congratulate the chemist?

НЕТ/ NO

Chemist, who.ACC last week I.NOM happily congratulated with publication of_article, won prize for research.

‘The chemist, whom I happily congratulated on publication of the article last week, won a prize for his research.’

Я поздравил химика?

Did I congratulate the chemist?

ДА/ YES

Chemist noted, that last week me.ACC happily congratulated with publication of_article physicist.NOM.

‘The chemist noted that physicist happily congratulated me on publication of the article last week.’

Я поздравил физика?

Did I congratulate the physicist?

НЕТ/ NO

Chemist noted, that last week I.NOM happily congratulated with publication of_article physicist.ACC.

‘The chemist noted that I happily congratulated the physicist on publication of the article last week.’

Я поздравил физика?

Did I congratulate the physicist?

ДА/ YES

Accountant, who.NOM before the meeting us.ACC quickly warned about error, summarized results in a_hurry.

‘The accountant, who before the meeting quickly warned us about the error, summarized the results in a hurry.’

Была ли бухгалтерша предупреждена нами об ошибке?

Was the accountant warned by us about the error?

НЕТ/ NO

Accountant, who.ACC before the meeting we.NOM quickly warned about error, summarized results in a_hurry.

‘The accountant, whom before the meeting we quickly warned about the error, summarized the results in a hurry.’

Была ли бухгалтерша предупреждена нами об ошибке?
Was the accountant warned by us about the error?
ДА/ YES
Бухгалтерша сказала, что перед собранием нас быстро предупредила об ошибке аудиторша.
Accountant said, that before the meeting us.ACC quickly warned about error auditor.NOM.
‘The accountant said that before the meeting the auditor quickly warned us about the error.’

Была ли аудиторша предупреждена нами об ошибке?
Was the auditor warned by us about the error?
НЕТ/ NO
Бухгалтерша сказала, что перед собранием мы быстро предупредили об ошибке аудиторшу.
Accountant said, that before the meeting we.NOM quickly warned about error auditor.ACC.
‘The accountant said that before the meeting we quickly warned the auditor about the error.’

Проигнорировал ли меня мотоциклист на перекрестке?
Did the motorcyclist ignore me at the intersection?
ДА/ YES
5. Мотоциклист, который сегодня утром меня бессовестно проигнорировал на перекрестке, скрылся за поворотом.
The motorcyclist, who.NOM this morning me.ACC shamelessly ignored at intersection, disappeared around corner.
‘The motorcyclist, who this morning shamelessly ignored me at the intersection, disappeared around the corner.’

Проигнорировал ли меня мотоциклист на перекрестке?
Did the motorcyclist ignore me at the intersection?
НЕТ/ NO
Мотоциклист вспомнил, что сегодня утром меня бессовестно проигнорировал на перекрестке таксист.
The motorcyclist remembered, that this morning me.ACC shamelessly ignored at intersection taxi_driver.NOM.
‘The motorcyclist remembered that this morning the taxi-driver shamelessly ignored me at the intersection.’

Проигнорировал ли меня таксист на перекрестке?
Did the taxi-driver ignore me at the intersection?
ДА/ YES
Мотоциклист вспомнил, что сегодня утром я бессовестно проигнорировал на перекрестке таксиста.
The motorcyclist remembered, that this morning I shamelessly ignored the taxi-driver.
‘The motorcyclist remembered that this morning I shamelessly ignored the taxi-driver at the intersection.’

Проягнорировал ли меня таксист на перекрестке?
Did the taxi-driver ignore me at the intersection?
НЕТ/ NO

6. Художница, которая во время беседы нас постепенно утомила своим рассказом, свернула холст с портретом.
Artist, who at time of conversation us gradually tired by her story, rolled up canvas with portrait.
‘The artist, who during the conversation gradually tired us with her story, rolled up the canvas with the portrait.’

Были ли мы утомлены рассказом художницы?
Were we tired with the artist's story?
ДА/ YES
Художница, которую во время беседы мы постепенно утомили своим рассказом, свернула холст с портретом.
Artist, who at time of conversation we gradually tired by our story, rolled up canvas with portrait.
‘The artist, whom during the conversation we gradually tired with our story, rolled up the canvas with the portrait.’

Были ли мы утомлены рассказом художницы?
Were we tired with the artist's story?
НЕТ/ NO
Художница поняла, что во время беседы нас постепенно утомила своим рассказом скупщица картин.
Artist understood, that at time of conversation us gradually tired by her story art_buyer.
‘The artist understood that during the conversation the art buyer gradually tired us with her story.’

Были ли мы утомлены рассказом скупщицы картин?
Were we tired with the art buyer’s story?
ДА/ YES
Художница поняла, что во время беседы мы постепенно утомили своим рассказом скупщицу картин.
Artist understood, that at time of conversation we gradually tired by our story art_buyer.
‘The artist understood that during the conversation we gradually tired the art buyer with our story.’

Были ли мы утомлены рассказом скупщицы картин?
Were we tired with the art buyer's story?

НЕТ / NO

7. Инженер, который уже не один год нас сильно раздражал своими манерами, написал доклад о проекте.
Engineer, who.NOM already not one year us.ACC strongly irritated by_his manners, wrote report about project.

‘The engineer, who for several years already strongly irritated us by his manners, wrote a report about the project.’

Раздражали ли мы инженера своими манерами?
Did we irritate the engineer by our manners?

НЕТ / NO

Инженер, которого уже не один год мы сильно раздражали своими манерами, написал доклад о проекте.
Engineer, who.ACC already not one year we.NOM strongly irritated by_our manners, wrote report about project.

‘The engineer, whom for several years already we strongly irritated by our manners, wrote a report about the project.’

Раздражали ли мы инженера своими манерами?
Did we irritate the engineer by our manners?

ДА / YES

Инженер осознал, что уже не один год нас сильно раздражал своими манерами экономист.
Engineer realized, that already not one year us.ACC strongly irritated by_his manners economist.NOM.

‘The engineer realized that for several years already the economist strongly irritated us by his manners.’

Раздражали ли мы экономиста своими манерами?
Did we irritate the economist by our manners?

НЕТ / NO

Инженер осознал, что уже не один год мы сильно раздражали своими манерами экономиста.
Engineer realized, that already not one year we.NOM strongly irritated by_our manners economist.ACC.

‘The engineer realized that for several years already we strongly irritated the economist by our manners.’

Раздражали ли мы экономиста своими манерами?
Did we irritate the economist by our manners?

ДА / YES

8. Ныряльщица, которая во время тренировки меня нарочно испугала в большом бассейне, уплыла в сторону.
Diver, who.NOM at time of_practice me.ACC purposefully scared in big swimming_pool, swam to side.

‘The diver, who during the practice purposefully scared me in the big swimming pool, swam to the side.’

Была ли ныряльщица испугана мной во время тренировки?
Was the diver scared by me during the practice?

НЕТ/ NO

The diver, whom during the practice I purposefully scared in the big swimming pool, swam to the side.

Was the synchronized swimmer scared by me during the practice?

ДА/ YES

The diver said that during the practice the synchronized swimmer purposefully scared me in the big swimming pool.

Was the synchronized swimmer scared by me during the practice?

НЕТ/ NO

The diver said that during the practice I purposefully scared the synchronized swimmer in the big swimming pool.

Did the doctor visit us?

ДА/ YES

The doctor, whom we reluctantly visited in the hospital before noon, recorded his recommendations on a notepad.

Did the doctor visit us?

ДА/ YES

The doctor, who reluctantly visited us in the hospital before noon, recorded his recommendations on notepad.
Did the doctor visit us?

НЕТ/ NO

Врач отметил, что до полудня нас неохотно посетил в больнице фельдшер.

Doctor noted, that before noon we.NOM reluctantly visited in hospital paramedic.ACC.

‘The doctor noted that we reluctantly visited the paramedic in the hospital before noon.’

Посетил ли нас фельдшер?

Did the paramedic visit us?

ДА/ YES

Врач отметил, что до полудня мы неохотно посетили в больнице фельдшера.

Doctor noted, that before noon we.NOM reluctantly visited in hospital paramedic.ACC.

‘The doctor noted that we reluctantly visited the paramedic in the hospital before noon.’

Посетил ли нас фельдшер?

Did the paramedic visit us?

НЕТ/ NO

10. Невеста, которая во время сборов меня весело развлекала шутками, съела несколько конфет со стола.

Bride, who.NOM at time of_getting_ready me.ACC joyfully entertained by_jokes, ate some chocolates from table.

‘The bride, who while getting ready joyfully entertained me with her jokes, ate some chocolates from the table.’

Развлекала ли невеста меня своими шутками?

Did the bride entertain me with her jokes?

ДА/ YES

Невеста, которую во время сборов я весело развлекала шутками, съела несколько конфет со стола.

Bride, who.ACC at time of_getting_ready I.NOM joyfully entertained by_jokes, ate some chocolates from table.

‘The bride, whom while getting ready I joyfully entertained with my jokes, ate some chocolates from the table.’

Развлекала ли невеста меня своими шутками?

Did the bride entertain me with her jokes?

НЕТ/ NO

Невеста заметила, что во время сборов меня весело развлекала шутками подруга.

Bride noticed, that at time of_getting_ready me.ACC joyfully entertained by_jokes girlfriend.NOM.

‘The bride noticed that while getting ready the girlfriend joyfully entertained me with her jokes.’

Развлекала ли подруга меня своими шутками?

Did the girlfriend entertain me with her jokes?

ДА/ YES

Невеста заметила, что во время сборов я весело развлекала шутками подругу.

Bride noticed, that at time of_getting_ready I.NOM joyfully entertained by_jokes girlfriend.ACC.

‘The bride noticed that while getting ready I joyfully entertained the girlfriend with her jokes.’
Развлекала ли подруга меня своими шутками?
Did the girlfriend entertain me with her jokes?
НЕТ/ NO

11. Сыщик, который сегодня вечером меня сразу заметил около ресторана, натянул кепку на глаза.
Detective, who.NOM today at_night me.ACC immediately noticed near restaurant, pulled cap over eyes.
‘The detective, who immediately noticed me near the restaurant tonight, pulled his cap over his eyes.’
Был ли сыщик сразу замечен мной около ресторана?
Was the detective immediately noticed by me near the restaurant?
НЕТ/ NO
Сыщик, которого сегодня вечером я сразу заметил около ресторана, натянул кепку на глаза.
Detective, who.ACC today at_night I.NOM immediately noticed near restaurant, pulled cap over eyes.
‘The detective, whom I immediately noticed near the restaurant tonight, pulled his cap over his eyes.’
Был ли сыщик сразу замечен мной около ресторана?
Was the detective immediately noticed by me near the restaurant?
ДА/ YES
Сыщик доложил, что сегодня вечером меня сразу заметил около ресторана полицейский.
Detective reported, that today at_night me.ACC immediately noticed near restaurant policeman.NOM.
‘The detective reported that the policeman immediately noticed me near the restaurant tonight’
Был ли полицейский сразу замечен мной около ресторана?
Was the policeman immediately noticed by me near the restaurant?
НЕТ/ NO
Сыщик доложил, что сегодня вечером я сразу заметил около ресторана полицейского.
Detective reported, that today at_night I.NOM immediately noticed near restaurant policeman.ACC.
‘The detective reported that I immediately noticed the policeman near the restaurant tonight’
Был ли полицейский сразу замечен мной около ресторана?
Was the policeman immediately noticed by me near the restaurant?
ДА/ YES

12. Аптекарша, которая на прошлой неделе нас полностью запутала во время приема, прочитала рецепт еще раз.
Pharmacist, who.NOM on last week us.ACC completely confused at time of_reception, read prescription once again.
‘The pharmacist, who last week completely confused us during the doctor’s visit, read the prescription once again.’
Была ли аптекарша запутана нами во время приема?
Was the pharmacist confused by us during the visit?
НЕТ/ NO
Аптекарша, которую на прошлой неделе мы полностью запутали во время приема, прочитала рецепт еще раз.
Pharmacist, who.ACC on last week we.NOM completely confused at time of_reception, read prescription once again.
‘The pharmacist, whom last week we completely confused during the doctor’s visit, read the prescription once again.’
Была ли аптекарша запутана нами во время приема?
Was the pharmacist confused by us during the visit?
ДА/ YES
Аптекарша сказала, что на прошлой неделе нас полностью запутала во время приема медсестра.
Pharmacist said, that on last week us.ACC completely confused at time of_reception nurse.NOM.
‘The pharmacist said that last week the nurse completely confused us during the doctor’s visit.’
Была ли медсестра запутана нами во время приема?
Was the nurse confused by us during the visit?
НЕТ/ NO
Аптекарша сказала, что на прошлой неделе мы полностью запутали во время приема медсестру.
Pharmacist said, that on last week we.NOM completely confused at time of_reception nurse.ACC.
‘The pharmacist said that last week we completely confused the nurse during the doctor’s visit.’
Была ли медсестра запутана нами во время приема?
Was the nurse confused by us during the visit?
ДА/ YES
13. Полицейский, который вчера ночью меня специально ранил в живот, обронил револьвер во время погони.
Policeman, who.NOM last night me.ACC purposefully wounded in stomach, dropped revolver at_time pursuit.
‘The policeman, whom purposefully wounded me in the stomach, dropped his revolver during the chase.’
Был ли я ранен в живот?
Was I wounded in the stomach?
ДА/ YES
Полицейский, которого вчера ночью я специально ранил в живот, обронил револьвер во время погони.
Policeman, who.ACC last night I.NOM purposefully wounded in stomach, dropped revolver at_time pursuit.
‘The policeman, whom I purposefully wounded in the stomach, dropped his revolver during the chase.’
Был ли я ранен в живот?
Was I wounded in the stomach?
НЕТ / NO
Полицейский увидел, что вчера ночью меня специально ранил в живот охранник.
Policeman saw, that last night me.ACC purposefully wounded in stomach guard.NOM.
‘The policeman saw that the guard purposefully wounded me in the stomach.’
Был ли я ранен в живот?
Was I wounded in the stomach?
ДА / YES
Полицейский увидел, что вчера ночью я специально ранил в живот охранника.
Policeman saw, that last night I.NOM purposefully wounded in stomach guard.ACC.
‘The policeman saw that I purposefully wounded the guard in the stomach.’

14. Официантка, которая после обеда нас громко поблагодарила за помощь, продолжила работать.
Waitress, who.NOM after lunch us.ACC loudly thanked for help, continued to work.
‘The waitress, who loudly thanked us for help after lunch, continued to work.’
Официантка поблагодарила нас за помощь?
Did the waitress thank us for help?
ДА / YES
Официантка, которую после обеда мы громко поблагодарили за помощь, продолжила работать.
Waitress, who.ACC after lunch we.NOM loudly thanked for help, continued to work.
‘The waitress, whom we loudly thanked for help after lunch, continued to work.’
Официантка поблагодарила нас за помощь?
Did the waitress thank us for help?
НЕТ / NO
Официантка услышала, что после обеда нас громко поблагодарила за помощь буфетчица.
Waitress heard, that after lunch us.ACC loudly thanked for help barmaid.NOM.
‘The waitress heard that the barmaid loudly thanked us for help after lunch.’
Буфетчица поблагодарила нас за помощь?
Did the barmaid thank us for help?
ДА / YES
Официантка услышала, что после обеда мы громко поблагодарили за помощь буфетчицу.
Waitress heard, that after lunch we.NOM loudly thanked for help barmaid.ACC.
‘The waitress heard that we loudly thanked the barmaid for help after lunch.’
Буфетчица поблагодарила нас за помощь?
Did the barmaid thank us for help?
НЕТ / NO

15. Репортер, который еще до рассвета нас поспешно уведомил о краже, описал происшествие в деталях.
Report, who.NOM already before dawn us.ACC hastily informed about theft, described incident in detail.
‘The reporter, who already before dawn hastily informed us about the theft, described the incident in detail.’

Был ли репортер уведомлен нами о краже?
Was the reporter informed by us about the theft?
НЕТ/NO

Репортер, которого еще до рассвета мы поспешно уведомили о краже, описал происшествие в деталях.
Reporter, who.ACC already before dawn we.NOM hastily informed about theft, described incident in detail.
‘The reporter, whom already before dawn we hastily informed about the theft, described the incident in detail.’

Был ли репортер уведомлен нами о краже?
Was the reporter informed by us about the theft?
ДА/YES

Репортер записал, что еще до рассвета нас поспешно уведомил о краже следователь.
Reporter wrote down, that already before dawn us.ACC hastily informed about theft investigator.NOM.
‘The reporter wrote down that already before dawn the investigator hastily informed us about the theft.’

Был ли следователь уведомлен нами о краже?
Was the investigator informed by us about the theft?
НЕТ/NO

Репортер записал, что еще до рассвета мы поспешно уведомили о краже следователя.
Reporter wrote down, that already before dawn we.NOM hastily informed about theft investigator.ACC.
‘The reporter wrote down that already before dawn we hastily informed the investigator about the theft.’

Был ли следователь уведомлен нами о краже?
Was the investigator informed by us about the theft?
ДА/YES

16. Костюмерша, которая после спектакля меня жестоко раскритиковала за медлительность, хотела написать жалобу.
Dresser, who.NOM after performance me.ACC severely criticized for slowness, wanted to write complaint.
‘The dresser, who after the performance severely criticized me for slowness, wanted to write a complaint.’

Критиковала ли я костюмершу за медлительность?
Did I criticize the dresser for slowness?
НЕТ/NO

Костюмерша, которую после спектакля я жестоко раскритиковала за медлительность, хотела написать жалобу.
Dresser, who ACC after performance I.NOM severely criticized for slowness, wanted to write a complaint. 
‘The dresser, whom after the performance I severely criticized for slowness, wanted to write a complaint.’

Did I criticize the dresser for slowness?
ДА / YES
Критиковала ли я костюмершу за медлительность?
Костюмерша догадалась, что после спектакля меня жестоко раскритиковала за медлительность парикмахерша.

Dresser guessed, that after performance I.NOM severely criticized for slowness hairdresser.NOM.
‘The dresser guessed that after the performance the hairdresser severely criticized me for slowness.’

Did I criticize the hairdresser for slowness?
НЕТ / NO
Критиковала ли я парикмахершу за медлительность?
Костюмерша догадалась, что после спектакля я жестоко раскритиковала за медлительность парикмахершу.

Dresser guessed, that after performance I.NOM severely criticized for slowness hairdresser.ACC.
‘The dresser guessed that after the performance I severely criticized the hairdresser for slowness.’

Did I criticize the hairdresser for slowness?
ДА / YES

17. Король, который давным-давно нас по-крупному обманул про клад, обещал хранить тайну вовеки.
King, who NOM long ago us.ACC largely deceived about treasure, promised to keep secret forever.
‘The king, who long ago largely deceived us about the treasure, promised to keep the secret forever.’

Were we deceived by the king about the treasure?
ДА / YES
Король, которого давным-давно мы по-крупному обманули про клад, обещал хранить тайну вовеки.
King, who ACC long ago we.NOM largely deceived about treasure, promised to keep secret forever.
‘The king, whom long ago we largely deceived about the treasure, promised to keep the secret forever.’

Were we deceived by the king about the treasure?
НЕТ / NO
Король сказал, что давным-давно нас по-крупному обманул про клад принц.
King said, that long ago us.ACC largely deceived about treasure prince.NOM.
'The king said that long ago we largely deceived about the treasure.'

Были ли мы обмануты принцем?

Were we deceived by the prince about the treasure?

ДА / YES

Король сказал, что давно мы обманули про клад принца.

King said that long ago we largely deceived about treasure prince.

'Были ли мы обмануты принцем?'

Were we deceived by the prince about the treasure?

НЕТ / NO

18. Стриптизерша, которая во время выступления меня сразу узнала по волосам, скрылась в темноте клуба.

Stripper, who immediately recognized me by hair, disappeared in darkness of club.

'Стриптизёрша узнала меня по волосам?'

Did the stripper recognize me by my hair?

ДА / YES

Стриптизерша, которую во время выступления я сразу узнала по волосам, скрылась в темноте клуба.

Stripper, who immediately recognized by hair, disappeared in darkness of club.

'Стриптизёрша узнала меня по волосам?'

Did the stripper recognize me by my hair?

НЕТ / NO

Стриптизерша, которая во время выступления меня сразу узнала по волосам официантка.

Stripper said, that immediately recognized me by hair.

'Стриптизёрша узнала меня по волосам?'

Did the waitress recognize me by my hair?

ДА / YES

Стриптизерша, которую во время выступления я сразу узнала по волосам официантку.

Stripper said, that immediately recognized the waitress by her hair.

'Стриптизёрша узнала меня по волосам?'

Did the waitress recognize me by my hair?
НЕТ/ NO

19. Предприниматель, который еще в декабре меня легко заинтересовал сделкой, рассмотрел предложение о сотрудничестве.
Entrepreneur, who.NOM yet in December me.ACC easily interested by_deal, considered offer of collaboration.
‘The entrepreneur, who had easily interested me by the deal in December, considered the offer of collaboration.’
Был ли предприниматель заинтересован моей сделкой?
Was the entrepreneur interested by my deal?
НЕТ/ NO
Предприниматель, которого еще в декабре я легко заинтересовал сделкой, рассмотрел предложение о сотрудничестве.
Entrepreneur, who.ACC yet in December I.NOM easily interested by_deal, considered offer of collaboration.
‘The entrepreneur, whom I had easily interested by the deal in December, considered the offer of collaboration.’
Был ли предприниматель заинтересован моей сделкой?
Was the entrepreneur interested by my deal?
ДА/ YES
Предприниматель отметил, что еще в декабре меня легко заинтересовал сделкой банкир.
Entrepreneur noted, that yet in December me.ACC easily interested by_deal banker.NOM.
‘The entrepreneur noticed that the banker had easily interested me by the deal in December.’
Был ли банкир заинтересован моей сделкой?
Was the banker interested by my deal?
НЕТ/ NO
Предприниматель отметил, что еще в декабре я легко заинтересовал сделкой банкира.
Entrepreneur noted, that yet in December I.NOM easily interested by_deal banker.ACC.
‘The entrepreneur noticed that I had easily interested the banker by the deal in December.’
Был ли банкир заинтересован моей сделкой?
Was the banker interested by my deal?
ДА/ YES

Bridesmaid, who.NOM before ceremony us.ACC roughly insulted without reason, got_caught by_dress on branch.
‘The bridesmaid, who roughly insulted us with no reason before the ceremony, got caught her dress on a branch.
Оскорбили ли мы свидетельницу?
Did we insult the bridesmaid?
НЕТ/ NO

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Свидетельница, которую перед церемонией мы грубо обозвали без причины, зацепилась платём за ветку.
Bridesmaid, who.ACC before ceremony we.NOM roughly insulted without reason, got_caught by_dress on branch.
‘The bridesmaid, whom we roughly insulted with no reason before the ceremony, got caught her dress on a branch.
Оскорбили ли мы свидетельницу?
Did we insult the bridesmaid?
ДА/ YES
Свидетельница вспомнила, что перед церемонией нас грубо обозвала без причины тамада.
Bridesmaid remembered, that before ceremony us.ACC roughly insulted without reason toastmaster.NOM.
‘The bridesmaid remembered that the toastmaster roughly insulted us with no reason before the ceremony.’
Оскорбили ли мы тамаду?
Did we insult the toastmaster?
НЕТ/ NO
Свидетельница вспомнила, что перед церемонией мы грубо обозвали без причины тамаду.
Bridesmaid remembered, that before ceremony we.NOM roughly insulted without reason toastmaster.ACC.
‘The bridesmaid remembered that we roughly insulted the toastmaster with no reason before the ceremony.’
Оскорбили ли мы тамаду?
Did we insult the toastmaster?
ДА/ YES
21. Эксперт, который в конце года меня страшно разочаровал цифрами в отчете, прервал контракт с фирмой.
Expert, who.NOM at end of_year me.ACC terribly disappointed by_figures in report, broke contract with firm.
‘The expert, who at the end of the year terribly disappointed me by the figures in the report, broke off contract with the firm.
Был ли я разочарован экспертом?
Was I disappointed by the expert?
ДА/ YES
Эксперт, которого в конце года я страшно разочаровал цифрами в отчете, прервал контракт с фирмой.
Expert, who.ACC at end of_year I.NOM terribly disappointed by_figures in report, broke contract with firm.
‘The expert, whom at the end of the year I terribly disappointed by the figures in the report, broke off contract with the firm.
Был ли я разочарован экспертом?
Was I disappointed by the expert?
НЕТ/ NO
Эксперт знал, что в конце года меня страшно разочаровал цифрами в отчете бухгалтер.
Expert knew, that at end of year me ACC terribly disappointed by figures in report accountant.NOM.
‘The expert knew that at the end of the year the accountant terribly disappointed me by the figures in the report.’
Был ли я разочарован бухгалтером?
Was I disappointed by the accountant?
ДА/ YES
Эксперт знал, что в конце года я страшно разочаровал цифрами в отчете бухгалтера.
Expert knew, that at end of year I NOM terribly disappointed by figures in report accountant ACC.
‘The expert knew that at the end of the year I terribly disappointed the accountant by the figures in the report.’
Был ли я разочарован бухгалтером?
Was I disappointed by the accountant?
НЕТ/ NO
22. Фигуристка, которая перед соревнованиями нас случайно заметила на трибуне, спряталась в раздевалке.
Skater, who NOM before competition us ACC by chance saw on platform, hid in locker room.
‘The skater, who before the competition accidently saw us on the platform, hid in the locker room.’
Были ли мы замечены фигуристкой на трибуне?
Were we seen by the skater on the platform?
ДА/ YES
Фигуристка, которую перед соревнованиями мы случайно заметили на трибуне, спряталась в раздевалке.
Skater, who ACC before competition we NOM by chance saw on platform, hid in locker room.
‘The skater, whom before the competition we accidently saw on the platform, hid in the locker room.’
Были ли мы замечены фигуристкой на трибуне?
Were we seen by the skater on the platform?
НЕТ/ NO
Фигуристка рассказала, что перед соревнованиями нас случайно заметила на трибуне лыжница.
Skater told, that before competition us ACC by chance saw on platform skier NOM.
‘The skater said that before the competition the skier accidently saw us on the platform.’
Были ли мы замечены лыжницей на трибуне?
Were we seen by the skier on the platform?
ДА/ YES
Фигуристка рассказала, что перед соревнованиями мы случайно заметили на трибуне лыжницу.
Skater told, that before competition we.NOM by_chance saw on platform skier.ACC.
‘The skater said that before the competition we accidently saw the skier on the platform.’
Были ли мы замечены лыжницей на трибуне?
Were we seen by the skier on the platform?
НЕТ/ NO

23. Губернатор, который во вторник нас неожиданно обрадовал после пресс-конференции, ожидал успеха на выборах.
Governor, who.NOM on Tuesday us.ACC unexpectedly pleased after press-conference, expected success in elections.
‘The Governor, who unexpectedly pleased us after the press-conference on Tuesday, expected success in the elections.’
Мы неожиданно обрадовали губернатора?
Did we unexpectedly please the Governor?
НЕТ/ NO

Губернатор сказал, что во вторник нас неожиданно обрадовал после пресс-конференции, ожидал успеха на выборах.
Governor said, that on Tuesday us.ACC unexpectedly pleased after press-conference lawyer.NOM.
‘The Governor said that the lawyer unexpectedly pleased us after the press-conference on Tuesday.’
Мы неожиданно обрадовали юриста?
Did we unexpectedly please the lawyer?
ДА/ YES

24. Ведьма, которая во время пира меня небрежно толкнула в огненную яму, выучила все заклинания.
Witch, who.NOM at time of feast me.ACC carelessly pushed into fiery pit, learned all spells.
‘The witch, who during the feast carelessly pushed me into the fiery pit, learned all the spells.’
Я толкнула ведьму в огненную яму?
Did I push the witch into the fiery pit?
НЕТ/ NO
Ведьма, которую во время пира я небрежно толкнула в огненную яму, выучила все заклинания.
Witch, who ACC at time of feast I NOM carelessly pushed into fiery pit, learned all spells.
‘The witch, whom during the feast I carelessly pushed into the fiery pit, learned all the spells.’
Я толкнула ведьму в огненную яму?
Did I push the witch into the fiery pit?
ДА/ YES
Ведьма знала, что во время пира меня небрежно толкнула в огненную яму волшебницу.
Witch knew, that at time of feast me ACC carelessly pushed into fiery pit fairy NOM.
‘The witch knew that during the feast the fairy carelessly pushed me into the fiery pit.’
Я толкнула волшебницу в огненную яму?
Did I push the fairy into the fiery pit?
НЕТ/ NO
Ведьма знала, что во время пира я небрежно толкнула в огненную яму волшебницу.
Witch knew, that at time of feast I NOM carelessly pushed into fiery pit fairy ACC.
‘The witch knew that during the feast I carelessly pushed the fairy into the fiery pit.’
Я толкнула волшебницу в огненную яму?
Did I push the fairy into the fiery pit?
ДА/ YES
25. Гангстер, который прошлой ночью нас несомненно подставил во время ограбления, спрятал выручку в сейфе.
Gangster, who NOM last night us ACC undoubtedly framed at time robbery hid loot in safe.
‘The gangster, who undoubtedly framed us during the robbery last night, hid the loot in the safe.’
Были ли мы подставлены гангстером во время ограбления?
Were we framed by the gangster during the robbery?
ДА/ YES
Гангстер, которого прошлой ночью мы несомненно подставили во время ограбления, спрятал выручку в сейф.
Gangster, who ACC last night we NOM undoubtedly framed at time robbery hid loot in safe.
‘The gangster, whom we undoubtedly framed during the robbery last night, hid the loot in the safe.’
Были ли мы подставлены гангстером во время ограбления?
Were we framed by the gangster during the robbery?
НЕТ/ NO
Гангстер сказал, что прошлой ночью нас несомненно подставил во время ограбления напарник.

Gangster said, that last night us.ACC undoubtedly framed at time robbery partner.NOM.

‘The gangster said that our partner undoubtedly framed us during the robbery last night.’

Были ли мы подставлены напарником во время ограбления?

Were we framed by the partner during the robbery?

ДА/ YES

Гангстер сказал, что прошлой ночью мы несомненно подставили во время ограбления напарник.

Gangster said, that last night we.NOM undoubtedly framed at time robbery partner.ACC.

‘The gangster said that we undoubtedly framed the partner during the robbery last night.’

Были ли мы подставлены напарником во время ограбления?

Were we framed by the partner during the robbery?

НЕТ/ NO

26. Уборщица, которая среди белого дня меня беспощадно обвинила в воровстве, ушла домой без оплаты.

Cleaning lady, who.NOM during white day me.ACC mercilessly accused of stealing, went home without pay.

‘The cleaning lady, who during a high day mercilessly accused me of stealing, went home without pay.’

Уборщица обвинила меня в воровстве?

Did the cleaning lady accuse me of stealing?

ДА/ YES

Уборщица, которую среди белого дня я беспощадно обвинила в воровстве, ушла домой без оплаты.

Cleaning_lady, who.ACC during white day I.NOM mercilessly accused of stealing, went home without pay.

‘The cleaning lady, whom during a high day I mercilessly accused of stealing, went home without pay.’

Уборщица обвинила меня в воровстве?

Did the cleaning lady accuse me of stealing?

НЕТ/ NO

Уборщица разболталась, что среди белого дня меня беспощадно обвинила в воровстве садовница.

Cleaning_lady told_everybody, that during white day me.ACC mercilessly accused of stealing gardener.NOM.

‘The cleaning lady told everybody that during a high day the gardener mercilessly accused me of stealing.’

Садовница обвинила меня в воровстве?

Did the gardener accuse me of stealing?

ДА/ YES

Уборщица разболталаса, что среди белого дня я беспощадно обвинила в воровстве садовницу.

Cleaning_lady told_everybody, that during white day I.NOM mercilessly accused of stealing gardener.ACC.
'The cleaning lady told everybody that during a high day I mercilessly accused the gardener of stealing.'
Did the gardener accuse me of stealing?
НЕТ / NO

27. Терапевт, который позавчера меня неспроста обвинил в некомпетентности, проверил в кабинете файлы.
Therapist, who.NOM day_before_yesterday me.ACC not_without_cause accused of incompetence, checked in office files.

Был ли терапевт обвинен мной в некомпетентности?
Was the therapist accused by me of incompetence?
ДА / YES

Терапевт согласился, что позавчера меня неспроста обвинил в некомпетентности хирург.
Therapist agreed, that day_before_yesterday me.ACC not_without_cause accused of incompetence surgeon.NOM.

Был ли хирург обвинен мной в некомпетентности?
Was the surgeon accused by me of incompetence?
НИЕТ / NO

28. Служанка, которая после бала нас дружелюбно поприветствовала улыбкой, споткнулась о корень дуба.
Maid, who.NOM after ball us.ACC friendly welcomed by_smile, tripped on root of_oak_tree.
‘The maid, who after the ball friendly welcomed us with the smile, tripped on a root of the oak tree.’
Did we welcome the maid with the smile?
НЕТ/ NO
Служанка, которую после бала мы дружелюбно поприветствовали улыбкой, споткнулась о корень дуба.
Maid, who.ACC after ball we.NOM friendly welcomed by_smile, tripped on root of_oak_tree.
‘The maid, whom after the ball we friendly welcomed with the smile, tripped on a root of the oak tree.’
Поприветствовали ли мы служанку улыбкой?
Did we welcome the maid with the smile?
ДА/ YES
Служанка рассказала, что после бала нас дружелюбно поприветствовала улыбкой королева.
Maid told, that after ball us.ACC friendly welcomed by_smile queen.NOM.
‘The maid told that after the ball the queen friendly welcomed us with the smile.’
Поприветствовали ли мы королеву улыбкой?
Did we welcome the queen with the smile?
НЕТ/ NO
Служанка рассказала, что после бала мы дружелюбно поприветствовали улыбкой королеву.
Maid told, that after ball we.NOM friendly welcomed by_smile queen.ACC.
‘The maid told that after the ball we friendly welcomed the queen with the smile.’
Поприветствовали ли мы королеву улыбкой?
Did we welcome the queen with the smile?
ДА/ YES
29. Дедушка, который вчера вечером меня крепко поцеловал в щеку, рассказал историю про слона.
Grandfather, who.NOM last night me.ACC tightly kissed on cheek, told story about elephant.
‘The grandfather, who last night firmly kissed me on my cheek, told a story about an elephant.’
Поцеловал ли дедушка меня в щеку?
Did the grandfather kiss me on my cheek?
ДА/ YES
Дедушка, которого вчера вечером я крепко поцеловал в щеку, рассказал историю про слона.
Grandfather, who.ACC last night I.NOM tightly kissed on cheek, told story about elephant.
‘The grandfather, whom last night I firmly kissed on his cheek, told a story about an elephant.’
Поцеловал ли дедушка меня в щеку?
Did the grandfather kiss me on my cheek?
Нет / NO
Дедушка видел, что вчера вечером меня крепко поцеловал в щеку отец.
Grandfather saw, that last night me.ACC tightly kissed on cheek father.NOM.
‘The grandfather saw that last night the father firmly kissed me on his cheek.’
Поцеловал ли отец меня в щеку?
Did the father kiss me on my cheek?
Да / YES
Дедушка видел, что вчера вечером я крепко поцеловал в щеку отца.
Grandfather saw, that last night I.NOM tightly kissed on cheek father.ACC.
‘The grandfather saw that last night I firmly kissed my father on his cheek.’
Поцеловал ли отец меня в щеку?
Did the father kiss me on my cheek?
Нет / NO
30. Хозяйка, которая после прогулки нас сильно расстроила новостями, легла на диван в гостиной.
Housewife, who.NOM after walk us.ACC really upset by news, lay on couch in living_room.
‘The housewife, who after the walk really upset us with the news, lay on the couch in the living_room.’
Были ли мы расстроены хозяйкой?
Were we upset by the housewife?
Да / YES
Хозяйка, которую после прогулки мы сильно расстроили новостями, легла на диван в гостиной.
Housewife, who.ACC after walk we.NOM really upset by news, lay on couch in living_room.
‘The housewife, whom after walk we really upset with the news, lay on the couch in the living_room.’
Были ли мы расстроены хозяйкой?
Were we upset by the housewife?
Нет / NO
Хозяйка пожаловалась, что после прогулки нас сильно расстроила новостями тетушка.
Housewife complained, that after walk us.ACC really upset by news aunty.NOM.
‘The housewife complained that after walk the aunty really upset us with the news.’
Были ли мы расстроены тетушкой?
Were we upset by the aunty?
Да / YES
Хозяйка пожаловалась, что после прогулки мы сильно расстроили новостями тетушку.
Housewife complained, that after walk we.NOM really upset by news aunty.ACC.
‘The housewife complained that after walk the we really upset the aunty with the news.’
Были ли мы расстроены тетушкой?
Were we upset by the aunty?
Нет / NO
31. Администратор, который в понедельник нас строго упрекнул за маленькую оплошность, написал жалобу в гневе.
Administrator, who.NOM on Monday us.ACC severely reproached for little mistake, wrote complaint in anger.
‘The administrator, who severely reproached us for a little mistake on Monday, wrote a complaint in anger.’
Мы упрекнули администратора за маленькую оплошность?
Did we reproach the administrator for a little mistake?
НЕТ/ NO
Администратор, которого в понедельник мы строго упрекнули за маленькую оплошность, написал жалобу в гневе.
Administrator, who.ACC on Monday we.NOM severely reproached for little mistake, wrote complaint in anger.
‘The administrator, whom we severely reproached for a little mistake on Monday, wrote a complaint in anger.’
Мы упрекнули администратора за маленькую оплошность?
Did we reproach the administrator for a little mistake?
ДА/ YES
Администратор узнал, что в понедельник нас строго упрекнули за маленькую оплошность учителя.
Administrator found_out, that on Monday us.ACC severely reproached for little mistake teacher.NOM.
‘The administrator found out that the teacher severely reproached us for a little mistake on Monday.’
Мы упрекнули учителя за маленькую оплошность?
Did we reproach the teacher for a little mistake?
НЕТ/ NO
Администратор узнал, что в понедельник мы строго упрекнули за маленькую оплошность учителя.
Administrator found_out, that on Monday we.NOM severely reproached for little mistake teacher.ACC.
‘The administrator found out that we severely reproached the teacher for a little mistake on Monday.’
Мы упрекнули учителя за маленькую оплошность?
Did we reproach the teacher for a little mistake?
ДА/ YES

32. Монахиня, которая во время службы меня случайно задела локтем, замешкалась у алтаря.
Nun, who.NOM at time of_service me.ACC accidentally touched by_elbow, got_confused at altar.
‘The nun, who during the service accidentally touched me with her elbow, got confused at the altar.’
Задела ли я монахиню локтем?
Did I touch the nun with my elbow?
НЕТ/ NO
Монахиня, которую во время службы я случайно задела локтем, замешкалась у алтаря.
Nun, who at time of service I accidentally touched by_elbow, got_confused at altar.
‘The nun, whom during the service I accidentally touched with my elbow, got confused at the altar.’

Задела ли я монахиню локтем?
Did I touch the nun with my elbow?
ДА/YES

Монахиня увидела, что во время службы я случайно задела локтем прихожанку.
Nun saw, that at time of service me.accidentally touched on elbow parishioner.NOM.
‘The nun saw that during the service the parishioner accidentally touched me with her elbow.’

Задела ли я прихожанку локтем?
Did I touch the parishioner with my elbow?
НЕТ/NO

Пожарный, который сегодня днем нас случайно заметил в горящем доме, вызвал помощь по радио.
Fireman, who today afternoon us.accidentally noticed in burning house, called_for help on radio.
‘The fireman, who accidentally noticed us in the burning house this afternoon, called for help by radio.’

Были ли мы замечены пожарным в горящем доме?
Were we noticed by the fireman in the burning house?
ДА/YES
Fireman reported, that today afternoon we accidentally noticed in burning house policeman.
‘The fireman reported that the policeman accidentally noticed us in the burning house this afternoon.’
Были ли мы замечены полицейским в горящем доме?
Were we noticed by the policeman in the burning house?
ДА/YES

Fireman reported, that today afternoon we accidentally noticed in burning house policeman.
‘The fireman reported that we accidentally noticed the policeman in the burning house this afternoon.’
Были ли мы замечены полицейским в горящем доме?
Were we noticed by the policeman in the burning house?
НЕТ/NO

34. Барменша, которая около стойки бара меня грубо толкнула в плечо, уронила стакан с вином.
Barmaid, who near [the] bar me rudely pushed to shoulder, dropped glass with wine.
‘The barmaid, who near the bar rudely pushed me on my shoulder, dropped a glass of wine.’
Толкнула ли барменша меня в плечо?
Did the barmaid push me on my shoulder?
ДА/YES

Барменша, которую около стойки бара я грубо толкнула в плечо, уронила стакан с вином.
Barmaid, who rudely pushed to shoulder, dropped glass with wine.
‘The barmaid, whom near the bar I rudely pushed on her shoulder, dropped a glass of wine.’
Толкнула ли барменша меня в плечо?
Did the barmaid push me on my shoulder?
НЕТ/NO

Барменша увидела, что около стойки бара меня грубо толкнула в плечо официантка.
Barmaid saw, that near [the] bar me rudely pushed to shoulder waitress.
‘The barmaid saw that near the bar the waitress rudely pushed me on my shoulder.’
Толкнула ли официантка меня в плечо?
Did the waitress push me on my shoulder?
ДА/YES

Барменша увидела, что около стойки бара я грубо толкнула в плечо официантку.
Barmaid saw, that near [the] bar me rudely pushed to shoulder waitress.
‘The barmaid saw that near the bar I rudely pushed the waitress on her shoulder.’
Толкнула ли официантка меня в плечо?
Did the waitress push me on my shoulder?

Нет/No

35. Философ, который в прошлом месяце меня дословно процитировал на конференции, преподавал курс в Кембридже.

Philosopher, who.NOM on last month me.ACC literally quoted at conference, taught course at Cambridge.

‘The philosopher, who literally quoted me at the conference last month, taught a course at Cambridge.’

Был ли философ процитирован мной на конференции?
Was the philosopher quoted by me at the conference?

Нет/No

Философ, которого в прошлом месяце я дословно процитировал на конференции, преподавал курс в Кембридже.

Philosopher, who.ACC on last month I.NOM literally quoted at conference, taught course at Cambridge.

‘The philosopher, whom I literally quoted at the conference last month, taught a course at Cambridge.’

Был ли философ процитирован мной на конференции?
Was the philosopher quoted by me at the conference?

Да/Yes

Философ сказал, что в прошлом месяце меня дословно процитировал на конференции математик.

Philosopher said, that on last month me.ACC literally quoted at conference mathematician.NOM.

‘The philosopher said that the mathematician literally quoted me at the conference last month.’

Был ли математик процитирован мной на конференции?
Was the mathematician quoted by me at the conference?

Нет/No

Философ сказал, что в прошлом месяце я дословно процитировал на конференции математика.

Philosopher said, that on last month I.NOM literally quoted at conference mathematician.ACC.

‘The philosopher said that I literally quoted the mathematician at the conference last month.’

Был ли математик процитирован мной на конференции?
Was the mathematician quoted by me at the conference?

Да/Yes

36. Старшеклассница, которая после второго урока нас молча спровоцировала на драку, объяснила ситуацию после происшествия.

Higher_grade_student, who.NOM after second class us.ACC silently provoked for fight, explained situation after incident.

‘The student from a higher grade, who after the second class silently provoked us for a fight, explained the situation after the incident.’

Была ли старшеклассница спровоцирована нами на драку?
Was the student from a higher grade provoked for a fight?

Нет/ No

Старшеклассница, которую после второго урока мы молча спровоцировали на драку, объяснила ситуацию после происшествия.

Higher_grade_student, who,ACC after second class we,NOM silently provoked for fight, explained situation after incident.

‘The student from a higher grade, whom after the second class we silently provoked for a fight, explained the situation after the incident.’

Was the student from a higher grade provoked for a fight?

Да/ Yes

Старшеклассница объяснила, что после второго урока нас молча спровоцировала на драку одноклассница.

Higher_grade_student explained, that after second class us,ACC silently provoked for fight classmate, NOM.

‘The student from a higher grade explained that after the second class our classmate silently provoked us for a fight.’

Was the classmate provoked for a fight?

Нет/ No

Слесарь, который вчера вечером меня сильно ударил по голове, уволился с работы.

Locksmith, who,NOM yesterday night me, ACC strongly hit on head, quit from job.

‘The locksmith, who last night strongly hit me on my head, quit his job.’

Did the locksmith hit me on my head?

Да/ Yes

Слесарь, которого вчера вечером я сильно ударил по голове, уволился с работы.

Locksmith, who,ACC yesterday night I, NOM strongly hit on head, quit from job.

‘The locksmith, whom last night I strongly hit on his head, quit his job.’

Did the locksmith hit me on my head?

Нет/ No

Слесарь рассказал, что вчера вечером меня сильно ударил по голове механик.

Locksmith told, that yesterday night me, ACC strongly hit on head mechanic, NOM.

‘The locksmith said that last night the mechanic strongly hit me on his head.’
Меня ударил механик по голове?
Did the mechanic hit me on my head?
ДА/ YES
Слесарь рассказал, что вчера вечером я сильно ударил по голове механика.
Locksmith told, that yesterday night I.NOM strongly hit on head mechanic.ACC.
‘The locksmith said that last night I strongly hit the mechanic on his head.’
Меня ударил механик по голове?
Did the mechanic hit me on my head?
НЕТ/ NO

38. Ведущая, которая во время викторины нас явно озадачила своим комментарием, ответила вопросом на вопрос.
Show-host, who.NOM at time of quiz us.ACC clearly puzzled by her comment, answered question to question.
‘The show host, who during the quiz clearly puzzled us with her comment, answered the question with another question.’
Были ли мы озадачены комментарием ведущей?
Were we puzzled by the comment of the show host?
ДА/ YES
Ведущая, которую во время викторины мы явно озадачили своим комментарием, ответила вопросом на вопрос.
Show-host, who.ACC at time of quiz we.NOM clearly puzzled by our comment, answered question to question.
‘The show host, whom during the quiz we clearly puzzled with our comment, answered the question with another question.’
Были ли мы озадачены комментарием ведущей?
Were we puzzled by the comment of the show host?
НЕТ/ NO

Ведущая сказала, что во время викторины нас явно озадачила своим комментарием зрительницу.
Show-host said, that at time of quiz us.ACC clearly puzzled by her comment viewer.NOM.
‘The show host said that during the quiz the viewer clearly puzzled us by her comment.’
Были ли мы озадачены комментарием зрительницы?
Were we puzzled by the comment of the viewer?
ДА/ YES
Ведущая сказала, что во время викторины мы явно озадачили своим комментарием зрительницу.
Show-host said, that at time of quiz we.NOM clearly puzzled by our comment viewer.ACC.
‘The show host said that during the quiz we clearly puzzled the viewer by our comment.’
Были ли мы озадачены комментарием зрительницы?
Were we puzzled by the comment of the viewer?
НЕТ/ NO

39. Сержант, который с самого начала нас слегка недолюбливал за хвастовство, получил медаль за отвагу.
Sergeant, who from very beginning we slightly disliked for bragging, received medal for bravery.

‘The sergeant, who from the very beginning slightly disliked us for bragging, received a medal for his bravery.’

Недолюбливали ли мы сержанта за хвастовство?
Did we dislike the sergeant for bragging?
НЕТ/ NO

Сержант, которого с самого начала мы слегка недолюбливали за хвастовство, получил медаль за отвагу.

Sergeant, who from very beginning we slightly disliked for bragging, received medal for bravery.

‘The sergeant, whom from the very beginning we slightly disliked for bragging, received a medal for his bravery.’

Did we dislike the sergeant for bragging?
ДА/ YES

Сержант осознал, что с самого начала нас слегка недолюбливал за хвастовство майор.

Sergeant realized, that from very beginning we slightly disliked for bragging major.

‘The sergeant realized that from the very beginning the major slightly disliked us for bragging.’

Did we dislike the major for bragging?
НЕТ/ NO

Сержант осознал, что с самого начала мы слегка недолюбливали за хвастовство майора.

Sergeant realized, that from very beginning we slightly disliked for bragging major.

‘The sergeant realized that from the very beginning we slightly disliked the major for bragging.’

Did we dislike the major for bragging?
ДА/ YES

40. Стилистка, которая уже много лет меня сильно уважала за хорошую работу, пришла на встречу поздно.

Stylist, who already many years me strongly respected for good work, came to meeting late.

‘The stylist, who already for many years respected me a lot for good work, came to the meeting late.’

Did I respect the stylist for good work?
НЕТ/ NO

Стилистка, которую уже много лет я сильно уважала за хорошую работу, пришла на встречу поздно.
Stylist, who already many years I strongly respected for good work, came to meeting late.

‘The stylist, whom already for many years I respected a lot for good work, came to the meeting late.’

Уважала ли я стилистку за хорошую работу?
Did I respect the stylist for good work?
ДА/ YES

Стилистка знала, что уже много лет меня сильно уважала за хорошую работу.
Stylist knew, that already many years I strongly respected for good work.

‘The stylist knew that already for many years the manicurist respected me a lot for good work.’

Уважала ли я маникюршу за хорошую работу?
Did I respect the manicurist for good work?
НЕТ/ NO

Стилистка знала, что уже много лет я сильно уважала за хорошую работу.
Stylist knew, that already many years I strongly respected for good work.

‘The stylist knew that already for many years I respected the manicurist a lot for good work.’

Были ли мы унизены генералом у всех на глазах?
Were we humiliated by the general in front of everyone?
ДА/ YES

41. Генерал, который во время переговоров нас резко унизил у всех на глазах, допустил ошибку в битве.
General, who at time of negotiations us suddenly humiliated with all at eyes, made error in battle.

‘The general, who during the negotiations suddenly humiliated us in front of everyone, committed an error in battle.’

Были ли мы унизены генералом у всех на глазах?
Were we humiliated by the general in front of everyone?
НЕТ/ NO

Генерал доложил, что во время переговоров нас резко унизил у всех на глазах сержант.
General said, that at time of negotiations us.ACC suddenly humiliated with all at_eyes sergeant.NOM. 'The general said that during the negotiations the sergeant suddenly humiliated us in front of everyone.'

Были ли мы унизены сержантом у всех на глазах?

Were we humiliated by the sergeant in front of everyone?

ДА/ YES

Генерал доложил, что во время переговоров мы резко унизили у всех на глазах сержанта.

General said, that at time of negotiations we.NOM suddenly humiliated with all at_eyes sergeant.ACC. 'The general said that during the negotiations we suddenly humiliated the sergeant in front of everyone.'

Были ли мы унизены сержантом у всех на глазах?

Were we humiliated by the sergeant in front of everyone?

НЕТ/ NO

42. Медсестра, которая прошлой ночью меня потихоньку вызвала из процедурной, уехала домой пораньше.

Nurse, who.NOM last night me.ACC quietly called out_of procedural, went home early. 'The nurse, who quietly called me out of the procedural, went home early.'

Медсестра вызвала меня из процедурной?

Did the nurse call me out of the procedural?

ДА/ YES

Медсестра, которую прошлой ночью я потихоньку вызвала из процедурной, уехала домой пораньше.

Nurse, who.ACC last night I.NOM quietly called out of procedural, went home early. 'The nurse, whom I quietly called out of the procedural, went home early.'

Медсестра вызвала меня из процедурной?

Did the nurse call me out of the procedural?

НЕТ/ NO

Медсестра вспомнила, что прошлой ночью меня потихоньку вызвала из процедурной няню.

Nurse remembered, that last night me.ACC quietly called out_of procedural nanny.NOM. 'The nurse remembered that the nanny quietly called me out of the procedural.'

Няня вызвала меня из процедурной?

Did the nanny call me out of the procedural?

ДА/ YES

Медсестра вспомнила, что прошлой ночью я потихоньку вызвала из процедурной няню.

Nurse remembered, that last night I.NOM quietly called out of procedural nanny.ACC. 'The nurse remembered that I quietly called the nanny out of the procedural.'

Няня вызвала меня из процедурной?

Did the nanny call me out of the procedural?

НЕТ/ NO
43. Адвокат, который на прошлой неделе меня уверенно рекомендовал за мои заслуги, назначил встречу на вторник.

Lawyer, who NOM on last week me ACC confidently recommended for his services, arranged meeting on Tuesday.

‘The lawyer, who last week confidently recommended me for my services, arranged the meeting on Tuesday.’

Рекомендовал ли я адвоката за его заслуги?
Did I recommend the lawyer for his services?

НЕТ/ NO

Адвокат, которого на прошлой неделе я уверенно рекомендовал за его заслуги, назначил встречу на вторник.

Lawyer, who ACC on last week I NOM confidently recommended for his services, arranged meeting on Tuesday.

‘The lawyer, whom last week I confidently recommended for his services, arranged the meeting on Tuesday.’

Рекомендовал ли я адвоката за его заслуги?
Did I recommend the lawyer for his services?

ДА/ YES

Адвокат сказал, что на прошлой неделе меня уверенно рекомендовал за мои заслуги судья.

Lawyer said, that on last week me ACC confidently recommended for his services judge NOM.

‘The lawyer said that last week the judge confidently recommended me for my services.’

Рекомендовал ли я судью за его заслуги?
Did I recommend the judge for his services?

НЕТ/ NO

Адвокат сказал, что на прошлой неделе я уверенно рекомендовал за его заслуги судью.

Lawyer said, that on last week I NOM confidently recommended for his services judge ACC.

‘The lawyer said that last week I confidently recommended the judge for his services.’

Рекомендовал ли я судью за его заслуги?
Did I recommend the judge for his services?

ДА/ YES

44. Продавщица, которая ранним утром нас нагло оскорбила по телефону, приготовилась работать весь день.

Saleswoman, who NOM early morning us ACC rudely insulted on phone, prepared to work all day.

‘The saleswoman, who early in the morning rudely insulted us on the phone, prepared to work all day.’

Оскорбили ли мы продавщицу по телефону?

Did we insult the saleswoman on the phone?

НЕТ/ NO

Продавщица, которую ранним утром мы нагло оскорбли по телефону, приготовилась работать весь день.
Saleswoman, who.ACC early morning we.NOM rudely insulted on phone, prepared
to work all day.
‘The saleswoman, whom early in the morning we rudely insulted on the phone, prepared
to work all day.’
Оскорбили ли мы продавщицу по телефону?
Did we insult the saleswoman on the phone?
ДА / YES
Продавщица рассказала, что ранним утром нас нагло оскорбила по телефону
кладовщица.
Saleswoman told, that early morning us.ACC rudely insulted on phone
storekeeper.NOM.
‘The saleswoman said that early in the morning the storekeeper rudely insulted us on the
phone.’
Оскорбили ли мы кладовщицу по телефону?
Did we insult the storekeeper on the phone?
НЕТ / NO
Продавщица рассказала, что ранним утром мы нагло оскорбили по телефону
кладовщицу.
Saleswoman told, that early morning we.NOM rudely insulted on phone
storekeeper.ACC.
‘The saleswoman said that early in the morning we rudely insulted the storekeeper on the
phone.’
Оскорбили ли мы кладовщицу по телефону?
Did we insult the storekeeper on the phone?
ДА / YES

45. Гитарист, который с детства меня беззаветно любил за мой талант, основал
группу в 1988 году.
Guitarist, who.NOM from childhood me.ACC devotedly loved for my talent, established
band in 1988 year.
‘The guitarist, who from childhood devotedly loved me for my talent, established the
band in 1988.’
Был ли я любим гитаристом за мой талант?
Was I loved by the guitarist for my talent?
ДА / YES
Гитарист, которого с детства я беззаветно любил за его талант, основал группу в
1988 году.
Guitarist, who.ACC from childhood I.NOM devotedly loved for his talent, established
band in 1988 year.
‘The guitarist, whom from childhood I devotedly loved for his talent, established the
band in 1988.’
Был ли я любим гитаристом за мой талант?
Was I loved by the guitarist for my talent?
НЕТ / NO
Гитарист знал, что с детства меня беззаветно любил за мой талант басист.
Guitarist knew, that from childhood me.ACC devotedly loved for my talent bassist.NOM.
'The guitarist knew that from childhood the bassist devotedly loved me for my talent.'
Was I loved by the bassist for my talent?
ДА / YES
Гитарист знал, что с детства я беззаветно любил за его талант басиста.
Guitarist knew, that from childhood I devotedly loved for his talent bassist.
‘The guitarist knew that from childhood I devotedly loved the bassist for his talent’
Was I loved by the bassist for my talent?
НЕТ / NO
46. Скрипачка, которая во время репетиции нас жестоко разгневала своим поведением, отменила концерт в пятницу.
Violinist, who.NOM at time of rehearsal us.ACC brutally angered by her behavior, cancelled concert on Friday.
‘The violinist, who during the rehearsal brutally angered us by her behavior, cancelled the concert on Friday.’
Были ли мы разгневаны поведением скрипачки?
Were we angered by the violinist's behavior?
ДА / YES
Скрипачка, которую во время репетиции мы жестоко разгневали своим поведением, отменила концерт в пятницу.
Violinist, who.ACC at time of rehearsal we.NOM brutally angered by our behavior, cancelled concert on Friday.
‘The violinist, whom during the rehearsal we brutally angered by our behavior, cancelled the concert on Friday.’
Были ли мы разгневаны поведением скрипачки?
Were we angered by the violinist's behavior?
НЕТ / NO
Скрипачка подозревала, что во время репетиции нас жестоко разгневала своим поведением баянистка.
Violinist suspected, that at time of rehearsal us.ACC brutally angered by her behavior accordionist.NOM.
‘The violinist suspected that during the rehearsal the accordionist brutally angered us by her behavior.’
Были ли мы разгневаны поведением баянистки?
Were we angered by the accordionist's behavior?
ДА / YES
Скрипачка подозревала, что во время репетиции мы жестоко разгневали своим поведением баянистку.
Violinist suspected, that at time of rehearsal we.NOM brutally angered by our behavior accordionist.ACC.
‘The violinist suspected that during the rehearsal we brutally angered the accordionist by our behavior.’
Были ли мы разгневаны поведением баянистки?
Were we angered by the accordionist's behavior?
47. Сенатор, который сегодня днем нас заметно обеспокоил после саммита, послал письмо в конгресс.
Senator, who.NOM today afternoon us.ACC obviously disturbed after summit, sent letter to Congress.
‘The Senator, who this afternoon obviously disturbed us after the summit, sent a letter to Congress.’
Был ли сенатор обеспокоен нами после саммита?
Was the Senator disturbed by us after the summit?
НЕТ/ NO
Сенатор, которого сегодня днем мы заметно обеспокоили после саммита, послал письмо в конгресс.
Senator, who.ACC today afternoon we.NOM obviously disturbed after summit, sent letter to Congress.
‘The Senator, whom this afternoon we obviously disturbed after the summit, sent a letter to Congress.’
Был ли сенатор обеспокоен нами после саммита?
Was the Senator disturbed by us after the summit?
ДА/ YES
Сенатор сказал, что сегодня днем нас заметно обеспокоил после саммита премьер министр.
Senator said, that today afternoon us.ACC obviously disturbed after summit Prime Minister.NOM.
‘The Senator said that this afternoon the Prime Minister obviously disturbed us after the summit’
Был ли премьер министр обеспокоен нами после саммита?
Was the Prime Minister disturbed by us after the summit?
НЕТ/ NO
Сенатор сказал, что сегодня днем мы заметно обеспокоили после саммита премьер министра.
Senator said, that today afternoon we.NOM obviously disturbed after summit Prime Minister.ACC.
‘The Senator said that this afternoon we obviously disturbed the Prime Minister after the summit’
Был ли премьер министр обеспокоен нами после саммита?
Was the Prime Minister disturbed by us after the summit?
ДА/ YES
48. Танцовщица, которая до выступления меня бессовестно опозорила своими словами, ушла в расстроенных чувствах.
Dancer, who.NOM before performance me.ACC shamelessly disgraced by _ her words, left in sad feelings.
‘The dancer, who before the performance shamelessly disgraced me with her words, left sad.’
Была ли танцовщица опозорена моими словами?
Was the dancer disgraced by my words?
ДА/ YES

The dancer understood that before the performance the pianist shamelessly disgraced me with her words.

Was the pianist disgraced by my words?

НЕТ/ NO

The dancer, whom before the performance I shamelessly disgraced with my words, left in sad feelings.

The dancer understood that before the performance I shamelessly disgraced the pianist with my words.

Was the pianist disgraced by my words?

Experimental Items for Experiment 2b

These materials are similar to those for Experiment 2a; the difference is that third-person pronoun was used instead of the first-person inside the embedded clause. The questions were constructed similarly (half passive, half active voice) for the same reasons as in Experiment 2a (see details above). The context sentences were added before each item. Conditions are marked for the first item. The rest of the items are presented in the same order of conditions. Detailed descriptions can be found in the introduction for Experiment 2b (Chapter 7).

1. a. SRC [embedded-clause word order: OV (non-canonical, preferred)]

Some employees of the state apparatus resigned.
Диктатор, который недавно их напрочь возненавидел за предательство, произнес речь на собрании.
Dictator, who.NOM recently them.ACC irreversibly came_to_hate for treason, pronounced speech at meeting.
‘The dictator, who recently came to irreversibly hate them for treason, made a speech at the meeting.’
Comprehension Question: Возненавидел ли диктатор работников за предательство?
Did the dictator hate the employees for treason?
Answer: ДА/ YES
b. Control CC for SRC [embedded-clause word order: OVS (non-canonical, dispreferred)]
Context Sentence: Некоторые работники государственного аппарата подали в отставку.
Some employees of the state apparatus resigned.
Диктатор, которого недавно они напрочь возненавидели за предательство, произнес речь на собрании.
Dictator, whom.ACC recently they.NOM irreversibly came_to_hate for treason, pronounced speech at meeting.
‘The dictator, whom recently they came to irreversibly hate for treason, made a speech at the meeting.’
Comprehension Question: Возненавидел ли диктатор работников за предательство?
Did the dictator hate the employees for treason?
Answer: НЕТ/ NO
c. ORC [embedded-clause word order: SV (canonical, preferred)]
Context Sentence: Некоторые работники государственного аппарата подали в отставку.
Some employees of the state apparatus resigned.
Диктатор отметил, что недавно их напрочь возненавидел за предательство чиновник.
Dictator noted, that recently them.ACC irreversibly came_to_hate for treason officer.NOM.
‘The dictator noted that recently the officer came to irreversibly hate them for treason.’
Comprehension Question: Возненавидел ли чиновник работников за предательство?
Did the officer hate employees for treason?
Answer: ДА/ YES
d. Control CC for ORC [embedded-clause word order: SVO (canonical, preferred)]
Context Sentence: Некоторые работники государственного аппарата подали в отставку.
Some employees of the state apparatus resigned.
Диктатор отметил, что недавно они напрочь возненавидели за предательство чиновника.
Dictator noted, that recently they.NOM irreversibly came_to_hate for treason officer.ACC.

‘The dictator noted that recently they came to irreversibly hate the officer for treason.’

Comprehension Question: Did the officer hate employees for treason?

Answer: NO

2. В соревнованиях между мужчинами и женщинами принимал участие француз.

In the competition between men and women participated Frenchman.

Шведка, которая не в первый раз его беспощадно обыграла в теннисном матче, уронила ракетку на корт.

Swedish_woman, who.NOM not for first time him.ACC mercilessly beat in tennis match, dropped racket on court.

‘The Swedish woman, who not for the first time mercilessly beat him in the tennis match, dropped her racket on court.’

Был ли француз обыгран шведкой в теннисном матче?

Was the French man beaten by the Swedish woman in the tennis match?

ДА/ YES

В соревнованиях между мужчинами и женщинами принимал участие француз.

In the competition between men and women participated Frenchman.

Шведка, которую не в первый раз он беспощадно обыграл в теннисном матче, уронила ракетку на корт.

Swedish_woman, whom.ACC not for first time he.NOM mercilessly beat in tennis match, dropped racket on court.

‘The Swedish woman, whom not for the first time mercifully beat him in the tennis match, dropped her racket on court.’

Был ли француз обыгран шведкой в теннисном матче?

Was the French man beaten by the Swedish woman in the tennis match?

НЕТ/ NO

В соревнованиях между мужчинами и женщинами принимал участие француз.

In the competition between men and women participated Frenchman.

Шведка отметила, что не в первый раз его беспощадно обыграла в теннисном матче украинка.

Swedish_woman noted, that not for first time him.ACC mercilessly beat in tennis match Ukrainian_woman.NOM.

‘The Swedish woman noted that not for the first time the Ukrainian mercilessly beat him in the tennis match.’

Был ли француз обыгран украинкой в теннисном матче?

Was the French man beaten by the Ukrainian woman in the tennis match?

ДА/ YES

В соревнованиях между мужчинами и женщинами принимал участие француз.

In the competition between men and women participated Frenchman.

Шведка отметила, что не в первый раз он беспощадно обыграл в теннисном матче украинку.

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Swedish woman noted, that not for first time he.NOM mercilessly beat in tennis match Ukrainian woman.ACC.

‘The Swedish woman noted that not for the first time he mercilessly beat the Ukrainian in the tennis match.’

Был ли француз обыгран украинкой в теннисном матче?

Was the French man beaten by the Ukrainian woman in the tennis match?

НЕТ/ NO

3. Биолог была активной сторонницей научной деятельности.
The biologist was an active supporter of scientific activity.

Химик, который на прошлой неделе ее радостно поздравил с публикацией статьи, получил приз за исследования.

Chemist, who.NOM last week her.ACC happily congratulated with publication of_article, won prize for research.

‘The chemist, who happily congratulated her on publication of the article last week, won a prize for his research.’

Биолог поздравила химика?
Did the biologist congratulate the chemist?

НЕТ/ NO

Биолог была активной сторонницей научной деятельности.
The biologist was an active supporter of scientific activity.

Химик, которого на прошлой неделе она радостно поздравила с публикацией статьи, получил приз за исследования.

Chemist, whom.ACC last week she.NOM happily congratulated with publication of_article, won prize for research.

‘The chemist, whom she happily congratulated on publication of the article last week, won a prize for his research.’

Биолог поздравила химика?
Did the biologist congratulate the chemist?

ДА/ YES

Биолог была активной сторонницей научной деятельности.
The biologist was an active supporter of scientific activity.

Химик отметил, что на прошлой неделе ее радостно поздравил с публикацией статьи физик.

Chemist noted, that last week her.ACC happily congratulated with publication of_article physicist.NOM.

‘The chemist noted that physicist happily congratulated her on publication of the article last week.’

Биолог поздравила физика?
Did the biologist congratulate the physicist?

НЕТ/ NO

Биолог была активной сторонницей научной деятельности.
The biologist was an active supporter of scientific activity.

Химик отметил, что на прошлой неделе она радостно поздравила с публикацией статьи физика.
Chemist noted, that last week she.NOM happily congratulated with publication of_ article physicist.ACC.

‘The chemist noted that she happily congratulated the physicist on publication of the article last week.’

Биолог поздравила физика?
Did the biologist congratulate the physicist?
ДА/ YES

4. Консультанты недавно были наняты в фирму на полставки.
The consultants have recently been hired by a firm part time.

Бухгалтерша, которую перед собранием их быстро предупредила об ошибке,
подвела итоги в спешке.

Accountant, who.NOM before the meeting them.ACC quickly warned about error,
summarized results in a hurry.

‘The accountant, who before the meeting quickly warned them about the error,
summarized the results in a hurry.’

Была ли бухгалтерша предупреждена консультантами об ошибке?
Was the accountant warned by the consultants about the error?
НЕ/NO

Консультанты недавно были наняты в фирму на полставки.
The consultants have recently been hired by a firm part time.

Бухгалтерша, которую перед собранием они быстро предупредили об ошибке,
подвела итоги в спешке.

Accountant, whom.ACC before the meeting they.NOM quickly warned about error,
summarized results in a hurry.

‘The accountant, whom before the meeting they quickly warned about the error,
summarized the results in a hurry.’

Была ли бухгалтерша предупреждена консультантами об ошибке?
Was the accountant warned by the consultants about the error?
ДА/YES

Консультанты недавно были наняты в фирму на полставки.
The consultants have recently been hired by a firm part time.

Бухгалтерша сказала, что перед собранием их быстро предупредила об ошибке
аудитору.

Accountant said, that before the meeting them.ACC quickly warned about error
auditor.NOM.

‘The accountant said that before the meeting the auditor quickly warned them about the
error.’

Была ли аудиторша предупреждена консультантами об ошибке?
Was the auditor warned by the consultants about the error?
НЕ/NO

Консультанты недавно были наняты в фирму на полставки.
The consultants have recently been hired by a firm part time.

Бухгалтерша сказала, что перед собранием они быстро предупредили об ошибке
аудиторшу.
The accountant said that before the meeting they quickly warned the auditor about the error.

The accountant said that before the meeting they quickly warned the auditor about the error.

Was the auditor warned by the consultants about the error?

ДА / YES

No.

The cyclist loved to ride on the roadway of the highway.

The cyclist loved to ride on the roadway of the highway.

Did the motorcyclist ignore the cyclist at the intersection?

ДА / YES

Велосипедистка любила ездить по проезжей части шоссе.

Велосипедистка любила ездить по проезжей части шоссе.

Did the motorcyclist ignore the cyclist at the intersection?

НЕТ / NO

The cyclist loved to ride on the roadway of the highway.

The cyclist loved to ride on the roadway of the highway.

Did the motorcyclist ignore the cyclist at the intersection?

ДА / YES

Велосипедистка любила ездить по проезжей части шоссе.

Велосипедистка любила ездить по проезжей части шоссе.

Was the taxi-driver warned by the consultants about the error?

ДА / YES

Велосипедистка любила ездить по проезжей части шоссе.

Велосипедистка любила ездить по проезжей части шоссе.
The motorcyclist remembered that this morning she shamelessly ignored the taxi-driver at the intersection.

Did the taxi-driver ignore the cyclist at the intersection?

НЕТ/ NO

6. Коллекционеры посетили выставку абстракционистов.
The collectors visited the exhibition of abstract art.

Художница, которая во время беседы их постепенно утомила своим рассказом, свернула холст с портретом.

Artist, who at time of conversation them gradually tired by her story, rolled up canvas with portrait.

‘The artist, who during the conversation gradually tired them with her story, rolled up the canvas with the portrait.’

Были ли коллекционеры утомлены рассказом художницы?

Were the collectors tired with the artist's story?

ДА/ YES

Коллекционеры посетили выставку абстракционистов.
The collectors visited the exhibition of abstract art.

Художница, которую во время беседы они постепенно утомили своим рассказом, свернула холст с портретом.

Artist, whom at time of conversation they gradually tired by our story, rolled up canvas with portrait.

‘The artist, whom during the conversation they gradually tired with our story, rolled up the canvas with the portrait.’

Были ли коллекционеры утомлены рассказом художницы?

Were the collectors tired with the artist's story?

НЕТ/ NO

Коллекционеры посетили выставку абстракционистов.
The collectors visited the exhibition of abstract art.

Художница поняла, что во время беседы они постепенно утомили своим рассказом скупщицу картин.

Artist understood, that at time of conversation them gradually tired by her story art_buyer.

‘The artist understood that during the conversation the art buyer gradually tired them with her story.’

Были ли коллекционеры утомлены рассказом скупщицы картин?

Were the collectors tired with the art buyer's story?

ДА/ YES

Коллекционеры посетили выставку абстракционистов.
The collectors visited the exhibition of abstract art.

Художница поняла, что во время беседы они постепенно утомили своим рассказом скупщицу картин.
Artist understood, that at time of conversation they gradually tired by our story. 
'The artist understood that during the conversation they gradually tired the art buyer with our story.'

Были ли коллекционеры утомлены рассказом скупицы картин?
Were the collectors tired with the art buyer's story?

НЕТ/ NO

7. Аналитики работали в соседнем отделе.
The analysts worked in the neighboring department.

Инженер, который уже не один год их сильно раздражал своими манерами, уволился с работы.
Engineer, who already not one year them. strongly irritated by his manners, quit his job.

'The engineer, who for several years already strongly irritated them by his manners, quit his job.'

Раздражали ли аналитики инженера своими манерами?
Did the analysts irritate the engineer by their manners?

НЕТ/ NO

Аналитики работали в соседнем отделе.
The analysts worked in the neighboring department.

Инженера, которого уже не один год они сильно раздражали своими манерами, уволил с работы.
Engineer, whom already not one year they. strongly irritated by their manners, quit his job.

'The engineer, whom for several years already they strongly irritated by their manners, quit his job.'

Раздражали ли аналитики инженера своими манерами?
Did the analysts irritate the engineer by their manners?

ДА/ YES

Аналитики работали в соседнем отделе.
The analysts worked in the neighboring department.

Инженер понял, что уже не один год их сильно раздражал своими манерами экономист.
Engineer realized, that already not one year them. strongly irritated by his manners. 

'The engineer realized that for several years already the economist strongly irritated them by his manners.'

Раздражали ли аналитики экономиста своими манерами?
Did analysts irritate the economist by their manners?

НЕТ/ NO

Аналитики работали в соседнем отделе.
The analysts worked in the neighboring department.

Инженер понял, что уже не один год они сильно раздражали своими манерами экономиста.
Engineer realized, that already not one year they strongly irritated by their manners economist.

‘The engineer realized that for several years already they strongly irritated the economist by their manners.’

Did analysts irritate the economist by their manners?

ДА/ YES

8. Пловец пришел тренироваться рано утром.
The swimmer came to practice early in the morning.

Ныряльщица, которая во время тренировки его нечаянно испугала в большом бассейне, упала в сторону.

Diver, who at time of practice him accidentally scared in big swimming_pool, swam to side.

‘The diver, who during the practice accidentally scared him in the big swimming pool, swam to the side.’

Was the diver scared by the swimmer during the practice?

НЕТ/ NO

Пловец пришел тренироваться рано утром.
The swimmer came to practice early in the morning.

Ныряльщица, которую во время тренировки он нечаянно испугал в большом бассейне, упала в сторону.

Diver, whom at time of practice he accidentally scared in big swimming_pool, swam to side.

‘The diver, whom during the practice he accidentally scared in the big swimming pool, swam to the side.’

Was the diver scared by the swimmer during the practice?

ДА/ YES

Пловец пришел тренироваться рано утром.
The swimmer came to practice early in the morning.

Ныряльщица сказала, что во время тренировки его нечаянно испугала в большом бассейне синхронистка.

Diver said, that at time of practice him accidentally scared in big swimming_pool synchronized_swimmer.

‘The diver said that during the practice the synchronized swimmer accidentally scared him in the big swimming pool.’

Was the synchronized swimmer scared by the swimmer during the practice?

НЕТ/ NO

Пловец пришел тренироваться рано утром.
The swimmer came to practice early in the morning.

Ныряльщица сказала, что во время тренировки он нечаянно испугал в большом бассейне синхронистку.
Diver said, that at time of practice he accidentally scared in big swimming pool synchronized swimmer.

"The diver said that during the practice he accidentally scared the synchronized swimmer in the big swimming pool."

Was the synchronized swimmer scared by the swimmer during the practice?
ДА / YES

The patients were dissatisfied with the treatment.

The doctor, who before noon them reluctantly visited in hospital, recorded recommendations on notepad.

"The doctor, who reluctantly visited them in the hospital before noon, recorded his recommendations on a notepad."

Did the doctor visit the patients?
ДА / YES

The patients were dissatisfied with the treatment.

The doctor, whom before noon they reluctantly visited in hospital, recorded recommendations on notepad.

"The doctor, whom they reluctantly visited in the hospital before noon, recorded his recommendations on a notepad."

Did the doctor visit the patients?
НЕТ / NO

The patients were dissatisfied with the treatment.

Doctor noted, that before noon them reluctantly visited in hospital paramedic.

"The doctor noted that the paramedic reluctantly visited them in the hospital before noon."

Did the paramedic visit the patients?
ДА / YES
10. On the wedding day, of course, the brother of the groom.

At the wedding was, of course, the brother of the groom.

The bride, who while getting ready he joyfully entertained him with her jokes, ate some chocolates from the table.

Did the bride entertain the groom's brother with her jokes?

YES

11. The suspected woman guessed that she was being followed.
The detective, who immediately noticed her near the restaurant tonight, pulled his cap over his eyes.

Was the detective immediately noticed by the suspected_woman near the restaurant? NO

The suspected_woman guessed that she was being followed.

The detective reported that she immediately noticed the policeman near the restaurant tonight.

Was the policeman immediately noticed by the suspected_woman near the restaurant? YES
Nurse, who on last week them completely confused at time of reception, read prescription once again.

‘The nurse, who last week completely confused them during the doctor’s visit, read the prescription once again.’

Was the nurse confused by the patients during the visit?

Нет / No

The patients were buying drugs directly at the hospital.

Была ли медсестра запутана пациентами на приеме?

Нет / No

Нет / No

The nurse, whom on last week they completely confused at time of reception, read prescription once again.

‘The nurse, whom last week they completely confused during the doctor’s visit, read the prescription once again.’

Was the nurse confused by the patients during the visit?

Да / Yes

The patients were buying drugs directly at the hospital.

Was the pharmacist confused by the patients during the visit?

Нет / No

The criminal managed to escape after the arrest.
Полицейский, который вчера ночью ее неожиданно ранил в живот, обронил револьвер во время погони.
Policeman, who.NOM last night her.ACC accidentally wounded in stomach, dropped revolver at_time pursuit.
‘The policeman, who accidentally wounded her in the stomach, dropped his revolver during the chase.’

Была ли преступница ранена в живот?
Was the criminal wounded in the stomach?
ДА/ YES

Преступнице удалось сбежать после задержания.
The criminal managed to escape after the arrest.

Полицейский, которого вчера ночью она неожиданно ранила в живот, обронил револьвер во время погони.
Policeman, whom.ACC last night she.NOM accidentally wounded in stomach, dropped revolver at_time pursuit.
‘The policeman, whom she accidentally wounded in the stomach, dropped his revolver during the chase.’

Была ли преступница ранена в живот?
Was the criminal wounded in the stomach?
НЕТ/ NO

Преступнице удалось сбежать после задержания.
The criminal managed to escape after the arrest.

Полицейский видел, что вчера ночью ее неожиданно ранил в живот охранник.
Policeman saw, that last night her.ACC accidentally wounded in stomach guard.NOM.
‘The policeman saw that the guard accidentally wounded her in the stomach.’

Была ли преступница ранена в живот?
Was the criminal wounded in the stomach?
ДА/ YES

Преступнице удалось сбежать после задержания.
The criminal managed to escape after the arrest.

Полицейский видел, что вчера ночью она неожиданно ранила в живот охранника.
Policeman saw, that last night she.NOM accidentally wounded in stomach guard.ACC.
‘The policeman saw that she accidentally wounded the guard in the stomach.’

Была ли преступница ранена в живот?
Was the criminal wounded in the stomach?
НЕТ/ NO

14. Во все время курортного сезона у уборщиков было полно работы.
During the holiday season the cleaners had a lot of work.

Официантка, которая после обеда их громко поблагодарила за помощь, продолжала работать.
Waitress, who.NOM after lunch them.ACC loudly thanked for help, continued to_work.
‘The waitress, who loudly thanked them for help after lunch, continued to work.’

Официантка поблагодарила уборщиков за помощь?
Did the waitress thank the cleaners for help?
ДА/ YES
Во все время курортного сезона у уборщиков было полно работы.
During the holiday season the cleaners had a lot of work.
Официантка, которую после обеда они громко поблагодарили за помощь, продолжила работать.
Waitress, whom.ACC after lunch they.NOM loudly thanked for help, continued to work.
‘The waitress, whom they loudly thanked for help after lunch, continued to work.’
Официантка поблагодарила уборщиков за помощь?
Did the waitress thank the cleaners for help?
НЕТ / NO

Во все время курортного сезона у уборщиков было полно работы.
During the holiday season the cleaners had a lot of work.
Официантка услышала, что после обеда их громко поблагодарила за помощь буфетчица.
Waitress heard, that after lunch them.ACC loudly thanked for help barmaid.NOM.
‘The waitress heard that the barmaid loudly thanked them for help after lunch.’
Буфетчица поблагодарила уборщиков за помощь?
Did the barmaid thank the cleaners for help?
ДА / YES

15. Студенты юридического факультета проходили практику в полиции.
The law students did internship at the police.
Репортер, который еще до рассвета их поспешно уведомил о краже, описал происшествие в деталях.
Reporter, who.NOM already before dawn them.ACC hastily informed about theft, described incident in detail.
‘The reporter, who already before dawn hastily informed them about the theft, described the incident in detail.’
Был ли репортер уведомлен студентами о краже?
Was the reporter informed by the students about the theft?
НЕТ / NO

Студенты юридического факультета проходили практику в полиции.
The law students did internship at the police.
Репортер, которого еще до рассвета они поспешно уведомили о краже, описал происшествие в деталях.
Reporter, whom.ACC already before dawn they.NOM hastily informed about theft, described incident in detail.
‘The reporter, whom already before dawn they hastily informed about the theft, described the incident in detail.’

Был ли репортер уведомлен студентами о краже?
Was the reporter informed by the students about the theft?
ДА/ YES

Студенты юридического факультета проходили практику в полиции.
The law students did internship at the police.

Репортер записал, что еще до рассвета их поспешно уведомил о краже следователь.
Reporter wrote down, that already before dawn them.ACC hastily informed about theft investigator.NOM.

‘The reporter wrote down that already before dawn the investigator hastily informed them about the theft.’

Был ли следователь уведомлен студентами о краже?
Was the investigator informed by the students about the theft?
НЕТ/ NO

Студенты юридического факультета проходили практику в полиции.
The law students did internship at the police.

Репортер записал, что еще до рассвета они поспешно уведомили о краже следователя.
Reporter wrote down, that already before dawn they.NOM hastily informed about theft investigator.ACC.

‘The reporter wrote down that already before dawn they hastily informed the investigator about the theft.’

Был ли следователь уведомлен студентами о краже?
Was the investigator informed by the students about the theft?
ДА/ YES

16. Гример только недавно начал работать в театре.
The make-up artist has only recently begun to work in the theater.

Костюмерша, которая после спектакля его жестоко раскритиковала за медлительность, хотела написать жалобу.
Dresser, who.NOM after performance him.ACC severely criticized for slowness, wanted to_write complaint.

‘The dresser, who after the performance severely criticized him for slowness, wanted to write a complaint.’

Критиковал ли гример костюмершу за медлительность?
Did the make-up artist criticize the dresser for slowness?
НЕТ/ NO

Гример только недавно начал работать в театре.
The make-up artist has only recently begun to work in the theater.

Костюмерша, которую после спектакля он жестоко раскритиковал за медлительность, хотела написать жалобу.
Dresser, whom.ACC after performance he.NOM severely criticized for slowness, wanted to_write complaint.

‘The dresser, whom after the performance he severely criticized for slowness, wanted to write a complaint.’
Критиковал ли гример костюмершу за медлительность?
Did the make-up artist criticize the dresser for slowness?
ДА/ YES
Гример только недавно начал работать в театре.
The make-up artist has only recently begun to work in the theater.
Костюмерша догадалась, что после спектакля его жестоко раскритиковала за
медлительность парикмахершу.
Dresser guessed, that after performance him.ACC severely criticized for slowness
hairdresser.NOM.
‘The dresser guessed that after the performance the hairdresser severely criticized him for
slowness.’
Критиковал ли гример парикмахершу за медлительность?
Did the make-up artist criticize the hairdresser for slowness?
НЕТ/ NO
Гример только недавно начал работать в театре.
The make-up artist has only recently begun to work in the theater.
Костюмерша догадалась, что после спектакля он жестоко раскритиковал за
медлительность парикмахершу.
Dresser guessed, that after performance he.NOM severely criticized for slowness
hairdresser.ACC.
‘The dresser guessed that after the performance he severely criticized the hairdresser for
slowness.’
Были ли князья обмануты королем?
Were the dukes deceived by the king?
ДА/ YES
17. Некоторые князья были особо приближенными при дворе.
Some dukes were particularly close (to the king) at the court.
Король, который давным-давно их по-крупному обманул в денежных вопросах,
obещал хранить тайну вовеки.
King, who.NOM long ago them.ACC largely deceived in money issues, promised
to_keep secret forever.
‘The king, who long ago largely deceived them about the treasure, promised to keep the
secret forever.’
Были ли князья обмануты королем?
Were the dukes deceived by the king?
ДА/ YES
Некоторые князья были особо приближенными при дворе.
Some dukes were particularly close (to the king) at the court.
Король, которого давным-давно они по-крупному обманули в денежных вопросах,
obещал хранить тайну вовеки.
King, whom.ACC long ago they.NOM largely deceived in money issues, promised
to_keep secret forever.
‘The king, whom long ago they largely deceived about the treasure, promised to keep the
secret forever.’
Were the dukes deceived by the king?
НЕТ/ NO
Некоторые князья были особо приближенными при дворе.
Some dukes were particularly close (to the king) at the court.
Король сказал, что давным-давно их по-крупному обманули в денежных вопросах принц.
King said, that long ago them.ACC largely deceived in money issues prince.NOM.
‘The king said that long ago the prince largely deceived them about the treasure.’
Были ли князья обманутиы принцем?
Were the dukes deceived by the prince?
ДА/ YES
Некоторые князья были особо приближенными при дворе.
Some dukes were particularly close (to the king) at the court.
Король сказал, что давным-давно они по-крупному обманули в денежных вопросах принц.
King said that long ago they.NOM largely deceived in money issues prince.ACC.
‘The king said that they long ago largely deceived the prince about the treasure.’
Были ли князья обмануны принцем?
Were the dukes deceived by the prince?
НЕТ/ NO

18. Посетитель заказал себе порцию водки у барной стойки.
The visitor ordered a shot of vodka at the bar.
Стриптизерша, которая во время выступления его сразу узнала по волосам,
скрылась в темноте клуба.
Stripper, who.NOM at time of_performance him.ACC immediately recognized by hair,
disappeared in darkness of_club.
‘The stripper, who during the performance immediately recognized him by his hair,
disappeared in the darkness of the club.’
Стриптизёрша узнала посетителя по волосам?
Did the stripper recognize the customer by his hair?
ДА/ YES
Посетитель заказал себе порцию водки у барной стойки.
The visitor ordered a shot of vodka at the bar.
Стриптизерша, которую во время выступления он сразу узнал по волосам,
скрылась в темноте клуба.
Stripper, whom.ACC at time of_performance he.NOM immediately recognized by hair,
disappeared in darkness of club.
‘The stripper, whom during the performance he immediately recognized by her hair,
disappeared in the darkness of the club.’
Стриптизёрша узнала посетителя по волосам?
Did the stripper recognize the customer by his hair?
НЕТ/ NO
Посетитель заказал себе порцию водки у барной стойки.
The visitor ordered a shot of vodka at the bar.
Стриптизерша сказала, что во время выступления его сразу узнала по волосам официантка.
Striper said, that at time of_performance him.ACC immediately recognized by hair waitress.NOM.
‘The stripper said that during the performance the waitress immediately recognized him by his hair.’
Официантка узнала посетителя по волосам?
Did the waitress recognize the customer by his hair?
ДА/ YES
49. Посетитель заказал себе порцию водки у барной стойки.
The visitor ordered a shot of vodka at the bar.
Стриптизерша сказала, что во время выступления он сразу узнал по волосам официантку.
Striper said, that at time of_performance he.NOM immediately recognized by hair waitress.ACC.
‘The stripper said that during the performance he immediately recognized the waitress by her hair.’
Официантка узнала посетителя по волосам?
Did the waitress recognize the customer by his hair?
НЕТ/ NO

19. Риэлтор была известна за свой талант в ведении бизнеса.
The realtor was known for her talent in business.
Предприниматель, который еще в декабре ее легко заинтересовал сделкой, рассмотрел предложение о сотрудничестве.
Entrepreneur, who.NOM yet in December her.ACC easily interested by_deal, considered offer of collaboration.
‘The entrepreneur, who had easily interested her by the deal in December, considered the offer of collaboration.’
Был ли предприниматель заинтересован сделкой риэлтора?
Was the entrepreneur interested by the realtor's deal?
НЕТ/ NO
Риэлтор была известна за свой талант в ведении бизнеса.
The realtor was known for her talent in business.
Предприниматель, которого еще в декабре она легко заинтересовала сделкой, рассмотрел предложение о сотрудничестве.
Entrepreneur, whom.ACC yet in December she.NOM easily interested by_deal, considered offer of collaboration.
‘The entrepreneur, whom she had easily interested by the deal in December, considered the offer of collaboration.’
Был ли предприниматель заинтересован сделкой риэлтора?
Was the entrepreneur interested by the realtor's deal?
ДА/ YES
Предприниматель отметил, что еще в декабре ее легко заинтересовал сделкой банкир.
Entrepreneur noted, that yet in December her.ACC easily interested by_deal banker.NOM.
‘The entrepreneur noticed that the banker had easily interested her by the deal in December.’
Был ли банкир заинтересован сделкой риэлтора?
Was the banker interested by the realtor's deal?
НЕТ/ NO
50. Риэлтор была известна за свой талант в ведении бизнеса.
The realtor was known for her talent in business.
Предприниматель отметил, что еще в декабре она легко заинтересовала сделкой банкира.
Entrepreneur noted, that yet in December she.NOM easily interested by_deal banker.ACC.
‘The entrepreneur noticed that she had easily interested the banker by the deal in December.’
Был ли банкир заинтересован сделкой риэлтора?
Was the banker interested by the realtor's deal?
ДА/ YES
20. Родственники невесты сидели в зале в первом ряду.
The bride's relatives sat in the auditorium in the first row.
Свидетельница, которая перед церемонией их грубо оскорбила без причины, зацепилась платьем за ветку.
Bridesmaid, who.NOM before ceremony them.ACC roughly insulted without reason, got_caught by_dress on branch.
‘The bridesmaid, who roughly insulted them with no reason before the ceremony, got caught her dress on a branch.
Оскорбили ли родственники невесты свидетельницу?
Did the bride's relatives insult the bridesmaid?
НЕТ/ NO
Родственники невесты сидели в зале в первом ряду.
The bride's relatives sat in the auditorium in the first row.
Свидетельница, которую перед церемонией они грубо оскорбили без причины, зацепилась платьем за ветку.
Bridesmaid, whom.ACC before ceremony they.NOM roughly insulted without reason, got_caught by_dress on branch.
‘The bridesmaid, whom they roughly insulted with no reason before the ceremony, got caught her dress on a branch.
Оскорбили ли родственники невесты свидетельницу?
Did the bride's relatives insult the bridesmaid?
ДА/ YES
Родственники невесты сидели в зале в первом ряду.
The bride's relatives sat in the auditorium in the first row.
Свидетельница вспомнила, что перед церемонией их грубо оскорбила без причины тамада.

Bridesmaid remembered, that before ceremony them.ACC roughly insulted without reason toastmaster.NOM.

‘The bridesmaid remembered that the toastmaster roughly insulted them with no reason before the ceremony.’

Оскорбили ли родственники невесты тамаду?

Did the bride's relatives insult the toastmaster?

НЕТ/ NO

51. Родственники невесты сидели в зале в первом ряду.

The bride's relatives sat in the auditorium in the first row.

Свидетельница вспомнила, что перед церемонией они грубо оскорбили без причины тамаду.

Bridesmaid remembered, that before ceremony they.NOM roughly insulted without reason toastmaster.ACC.

‘The bridesmaid remembered that they roughly insulted the toastmaster with no reason before the ceremony.’

Оскорбили ли родственники невесты тамаду?

Did the bride's relatives insult the toastmaster?

ДА/ YES

21. Менеджер не могла полностью посвятить себя работе из-за болезни.

The manager wasn't able to fully devote herself to work because of illness.

Эксперт, который в конце года ее страшно разочаровал цифрами в отчете, прервал контракт с фирмой.

Expert, whom.ACC at end of year she.NOM terribly disappointed by figures in report, broke contract with firm.

‘The expert, whom at the end of the year she terribly disappointed by the figures in the report, broke off contract with the firm.

Была ли менеджер разочарована экспертом?

Was the manager disappointed by the expert?

ДА/ YES

Менеджер не могла полностью посвятить себя работе из-за болезни.

The manager wasn't able to fully devote herself to work because of illness.

Эксперт, которого в конце года она страшно разочаровала цифрами в отчете, прервал контракт с фирмой.

Expert, whom.ACC at end of year she.NOM terribly disappointed by figures in report, broke contract with firm.

‘The expert, whom at the end of the year she terribly disappointed by the figures in the report, broke off contract with the firm.

Была ли менеджер разочарована экспертном?

Was the manager disappointed by the expert?

НЕТ/ NO

Менеджер не могла полностью посвятить себя работе из-за болезни.

The manager wasn't able to fully devote herself to work because of illness.
Эксперт знал, что в конце года ее страшно разочаровал цифрами в отчете бухгалтер.
Expert knew, that at end of year her.ACC terribly disappointed by figures in report accountant.NOM.
‘The expert knew that at the end of the year the accountant terribly disappointed her by the figures in the report.’
Была ли менеджер разочарована бухгалтером?
Was the manager disappointed by the accountant?
ДА/ YES
52. Менеджер не могла полностью посвятить себя работе из-за болезни.
The manager wasn't able to fully devote herself to work because of illness.
Эксперт знал, что в конце года она страшно разочаровала цифрами в отчете бухгалтера.
Expert knew, that at end of year she.NOM terribly disappointed by figures in report accountant.ACC.
‘The expert knew that at the end of the year she terribly disappointed the accountant by the figures in the report.’
Была ли менеджер разочарована бухгалтером?
Was the manager disappointed by the accountant?
НЕТ/ NO
22. Конькобежцы в последний момент решили участвовать в эстафете.
The skaters at the last moment decided to participate in the relay.
Фигуристка, которая перед соревнованиями их случайно заметила на трибуне, спряталась в раздевалке.
Figure_skater, who.NOM before competition them.ACC by_chance saw on platform, hid in locker_room.
‘The figure-skater, who before the competition accidently saw them on the platform, hid in the locker room.’
Были ли конькобежцы замечены фигуриской на трибуне?
Were the skaters seen by the figure_skater on the platform?
ДА/ YES
Конькобежцы в последний момент решили участвовать в эстафете.
The skaters at the last moment decided to participate in the relay.
Фигуристка, которую перед соревнованиями они случайно заметили на трибуне, спряталась в раздевалке.
Figure_skater, whom.ACC before competition they.NOM by_chance saw on platform, hid in locker_room.
‘The figure-skater, whom before the competition they accidently saw on the platform, hid in the locker room.’
Были ли конькобежцы замечены фигуриской на трибуне?
Were the skaters seen by the figure_skater on the platform?
НЕТ/ NO
Конькобежцы в последний момент решили участвовать в эстафете.
The skaters at the last moment decided to participate in the relay.
Фигуристка рассказала, что перед соревнованиями их случайно заметила на трибуне лыжница.

Figure skater told, that before competition they ACC by chance saw on platform skier NOM.

‘The figure-skater said that before the competition the skier accidently saw them on the platform.’

Были ли конькобежцы замечены лыжницей на трибуне?
Were the skaters seen by the skier on the platform?
ДА/ YES

53. Конькобежцы в последний момент решили участвовать в эстафете.
The skaters at the last moment decided to participate in the relay.

Фигуристка рассказала, что перед соревнованиями они случайно заметили на трибуне лыжницу.

Figure skater told, that before competition they NOM by chance saw on platform skier ACC.

‘The figure-skater said that before the competition they accidently saw the skier on the platform.’

Были ли конькобежцы замечены лыжницей на трибуне?
Were the skaters seen by the skier on the platform?
НЕТ/ NO

23. Специалисты усердно работали над предвыборной кампанией.
The specialists worked hard in the election campaign.

Губернатор, который во вторник их неожиданно обрадовал после пресс-конференции, ожидал успеха на выборах.

Governor, who NOM on Tuesday them ACC unexpectedly pleased after press-conference expected success in elections.

‘The Governor, who unexpectedly pleased them after the press-conference on Tuesday, expected success in the elections.’

Специалисты неожиданно обрадовали губернатора?
Did the specialists unexpectedly please the Governor?
НЕТ/ NO

Специалисты усердно работали над предвыборной кампанией.
The specialists worked hard in the election campaign.

Губернатор, которого во вторник они неожиданно обрадовали после пресс-конференции, ожидал успеха на выборах.

Governor, whom ACC on Tuesday we ACC unexpectedly pleased after press-conference expected success in elections.

‘The Governor, whom they unexpectedly pleased after the press-conference on Tuesday, expected success in the elections.’

Специалисты неожиданно обрадовали губернатора?
Did specialists unexpectedly please the Governor?
ДА/ YES

Специалисты усердно работали над предвыборной кампанией.
The specialists worked hard in the election campaign.
Губернатор сказал, что во вторник их неожиданно обрадовал после пресс-конференции юрист.
Governor said, that on Tuesday them.ACC unexpectedly pleased after press-conference lawyer.NOM.
‘The Governor said that the lawyer unexpectedly pleased them after the press-conference on Tuesday.’
Специалисты неожиданно обрадовали юриста?
Did specialists unexpectedly please the lawyer?
НЕТ/ NO
54. Специалисты усердно работали над предвыборной кампанией.
The specialists worked hard in the election campaign.
Губернатор сказал, что во вторник они неожиданно обрадовали после пресс-конференции юриста.
Governor said, that on Tuesday they.NOM unexpectedly pleased after press-conference lawyer.ACC.
‘The Governor said that they unexpectedly pleased the lawyer after the press-conference on Tuesday.’
Специалисты неожиданно обрадовали юриста?
Did specialists unexpectedly please the lawyer?
ДА/ YES
24. Колдун был известен тем, что всем строил козни.
The sorcerer was well known for plotting against everyone.
Ведьма, которая во время пира его небрежно толкнула в огненную яму, знала все заклинания.
Witch, who.NOM at time of feast him.ACC carelessly pushed into fiery pit, knew all spells.
‘The witch, who during the feast carelessly pushed him into the fiery pit, knew all the spells.’
Колдун толкнул ведьму в огненную яму?
Did the sorcerer push the witch into the fiery pit?
НЕТ/ NO
Колдун был известен тем, что всем строил козни.
The sorcerer was well known for plotting against everyone.
Ведьма, которую во время пира он небрежно толкнул в огненную яму, знала все заклинания.
Witch, whom.ACC at time of feast he.NOM carelessly pushed into fiery pit, knew all spells.
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Колдун толкнул ведьму в огненную яму?
Did the sorcerer push the witch into the fiery pit?
ДА/ YES
Колдун был известен тем, что всем строил козни.
The sorcerer was well known for plotting against everyone.
Ведьма знала, что во время пира его небрежно толкнула в огненную яму волшебница.
Witch knew, that at time of feast he.NOM carelessly pushed into fiery pit fairy.ACC.
‘The witch knew that during the feast he carelessly pushed the fairy into the fiery pit.’

ДА/ YES
Местные хакеры участвовали в ограблении банка впервые.
The local hackers participated in the robbery of the bank for the first time.
Гангстер, который прошлой ночью их несомненно подставил во время ограбления, спрятал выручку в сейфе.
Gangster, whom.ACC last night they.NOM undoubtedly framed at time robbery, hid loot in safe.
‘The gangster, whom they undoubtedly framed during the robbery last night, hid the loot in the safe.’

НЕТ/ NO
Местные хакеры участвовали в ограблении банка впервые.
The local hackers participated in the robbery of the bank for the first time.
Гангстер, который прошлой ночью они несомненно подставили во время ограбления, спрятал выручку в сейфе.
Gangster, who.NOM last night them.ACC undoubtedly framed at time robbery, hid loot in safe.
‘The gangster, who undoubtedly framed them during the robbery last night, hid the loot in the safe.’

Были ли хакеры подставлены гангстером во время ограбления?
Were the hackers framed by the gangster during the robbery?

ДА/ YES
Местные хакеры участвовали в ограблении банка впервые.
The local hackers participated in the robbery of the bank for the first time.
Гангстер, который прошлой ночью они несомненно подставили во время ограбления, спрятал выручку в сейфе.
Gangster, whom.ACC last night they.NOM undoubtedly framed at time robbery, hid loot in safe.
‘The gangster, whom they undoubtedly framed during the robbery last night, hid the loot in the safe.’

НЕТ/ NO
Местные хакеры участвовали в ограблении банка впервые.
The local hackers participated in the robbery of the bank for the first time.
Гангстер сказал, что прошлой ночью их несомненно подставил во время ограбления напарник.
Gangster said, that last night them.ACC undoubtedly framed at time robbery partner.NOM.
The gangster said that their partner undoubtedly framed them during the robbery last night.
Were the hackers framed by the partner during the robbery?
ДА/ YES
Местные хакеры подставлены напарником во время ограбления?
Были ли хакеры подставлены напарником во время ограбления?
Were the hackers framed by the partner during the robbery?
НЕТ/ NO
26. Садовник работал в этом доме уже много лет.
The gardener worked in this house for many years.
Уборщица, которая среди белого дня его незаслуженно обвинила в воровстве, ушла домой без оплаты.
Cleaning_lady, who.NOM during white day him.ACC undeservedly accused of stealing, went home without pay.
‘The cleaning lady, who during a high day undeservedly accused him of stealing, went home without pay.’
Уборщица обвинила садовника в воровстве?
Did the cleaning lady accuse the gardener of stealing?
ДА/ YES
Садовник работал в этом доме уже много лет.
The gardener worked in this house for many years.
Уборщица, которую среди белого дня он незаслуженно обвинил в воровстве, ушла домой без оплаты.
Cleaning_lady, whom.ACC during white day he.NOM undeservedly accused of stealing, went home without pay.
‘The cleaning lady, whom during a high day he undeservedly accused of stealing, went home without pay.’
Уборщица обвинила садовника в воровстве?
Did the cleaning lady accuse the gardener of stealing?
НЕТ/ NO
Садовник работал в этом доме уже много лет.
The gardener worked in this house for many years.
Уборщица разболтала, что среди белого дня его незаслуженно обвинила в воровстве няня.
Cleaning_lady told_everybody, that during white day him.ACC undeservedly accused of stealing nanny.NOM.
The cleaning lady told everybody that during a high day the nanny undeservedly accused him of stealing.

Did the nanny accuse the gardener of stealing?

DA/ YES

Садовник работал в этом доме уже много лет.
The gardener worked in this house for many years.

Уборщица разболтала, что среди белого дня он незаслуженно обвинил в воровстве няню.

Did the nanny accuse the gardener of stealing?

НЕТ/ NO

27. Кардиолог была выпускницей престижного вуза, но в больнице работала недавно.
The cardiologist was a graduate of a prestigious university, but in the hospital she worked recently.

Терапевт, который позавчера ее неспроста обвинил в некомпетентности, проверил в кабинете файлы.

Did the therapist accuse the cardiologist of incompetence?

НЕТ/ NO

Кардиолог была выпускницей престижного вуза, но в больнице работала недавно.
The cardiologist was a graduate of a prestigious university, but in the hospital she worked recently.

Терапевт, который позавчера она неспроста обвинила в некомпетентности, проверил в кабинете файлы.

Was the therapist accused by the cardiologist of incompetence?

ДА/ YES
Therapist agreed, that day_before_yesterday her.ACC not_without_cause accused of incompetence surgeon.NOM.

‘The therapist agreed that the surgeon justly accused her of incompetence the day before yesterday.’

Был ли хирург обвинен кардиологом в некомпетентности?
Was the surgeon accused by the cardiologist of incompetence?
НЕТ/ NO

Кардиолог была выпускницей престижного вуза, но в больнице работала недавно.
The cardiologist was a graduate of a prestigious university, but in the hospital she worked recently.

Терапевт сказал, что позавчера она неспроста обвинила в некомпетентности хирурга.

Therapist agreed, that day_before_yesterday she.NOM not_without_cause accused of incompetence surgeon.ACC.

‘The therapist agreed that she justly accused the surgeon of incompetence the day before yesterday.’

Был ли хирург обвинен кардиологом в некомпетентности?
Was the surgeon accused by the cardiologist of incompetence?
ДА/ YES

28. Заморские гости плохо говорили по-русски.
The overseas guests poorly spoke Russian.

Принцесса, которая после бала их дружелюбно поприветствовала улыбкой, споткнулась о корень дуба.

Princess, who.NOM after ball them.ACC friendly welcomed by_smile, tripped on root of_oak_tree.

‘The princess, who after the ball friendly welcomed them with the smile, tripped on a root of the oak tree.’

Поприветствовали ли гости принцессу улыбкой?
Did the guests welcome the princess with the smile?
НЕТ/ NO

Заморские гости плохо говорили по-русски.
The overseas guests poorly spoke Russian.

Принцесса, которую после бала они дружелюбно поприветствовали улыбкой, споткнулась о корень дуба.

Princess, whom.ACC after ball they.NOM friendly welcomed by_ smile, tripped on root of_oak_tree.

‘The princess, whom after the ball they friendly welcomed with the smile, tripped on a root of the oak tree.’

Поприветствовали ли гости принцессу улыбкой?
Did the guests welcome the princess with the smile?
ДА/ YES

Заморские гости плохо говорили по-русски.
The overseas guests poorly spoke Russian.

Принцесса рассказала, что после бала их дружелюбно поприветствовала улыбкой королева.
Princess told, that after ball they.NOM friendly welcomed by_smile queen.ACC.
‘The princess told that after the ball they friendly welcomed them with the smile.’
Did the guests welcome the queen with the smile?
НЕТ/ NO

Заморские гости плохо говорили по-русски.
The overseas guests poorly spoke Russian.

Princess told, that after ball they.NOM friendly welcomed by_smile queen.ACC.
‘The princess told that after the ball they friendly welcomed the queen with the smile.’
Did the guests welcome the queen with the smile?
ДА/ YES

29. Внучка была всеобщей любимицей.
The granddaughter was everybody's favorite.

Дедушка, который вчера вечером ее крепко поцеловал в щеку, рассказал историю про слона.
Grandfather, who.NOM last night her.ACC tightly kissed on cheek, told story about elephant.
‘The grandfather, who last night firmly kissed her on her cheek, told a story about an elephant.’

Поприветствовали ли гости королеву улыбкой?

Внучка была всеобщей любимицей.

Дедушка, которого вчера вечером он крепко поцеловал в щеку, рассказал историю про слона.
Grandfather, whom.ACC last night she.NOM tightly kissed on cheek, told story about elephant.
‘The grandfather, whom last night she firmly kissed on his cheek, told a story about an elephant.’

Поцеловал ли дедушка внучку в щеку?

Внучка была всеобщей любимицей.
The granddaughter was everybody's favorite.

Дедушка, который вчера вечером она крепко поцеловала в щеку, рассказал историю про слона.
Grandfather, whom.ACC last night she.NOM tightly kissed on cheek, told story about elephant.
‘The grandfather, whom last night she firmly kissed on her cheek, told a story about an elephant.’

Поцеловал ли дедушка внучку в щеку?

Внучка была всеобщей любимицей.

Дедушка, которое вчера вечером его крепко поцеловал в щеку отец.

Grandfather saw, that last night her.ACC tightly kissed on cheek father.NOM.
‘The grandfather saw that last night the father firmly kissed her on her cheek.’

Поцеловал ли отец внучку в щеку?

Внучка была всеобщей любимицей.
The granddaughter was everybody's favorite.
Дедушка видел, что вчера вечером она крепко поцеловала в щеку отца.
Grandfather saw, that last night she.NOM tightly kissed on cheek father.ACC.
‘The grandfather saw that last night she firmly kissed her father on his cheek.’

Полезовал ли отец внучку в щеку?
Did the father kiss the granddaughter on her cheek?
НЕТ/ NO

30. Пожилые соседки любили посплетничать.
The elderly neighbors loved to gossip.
Хозяйка, которая после прогулки их сильно расстроила новостями, легла на диван в гостиной.
Housewife, who.NOM after walk them.ACC really upset by news, lay on couch in living_room.
‘The housewife, who after the walk really upset them with the news, lay on the couch in the living room.’
Были ли соседки расстроены хозяйкой?
Were the neighbors upset by the housewife?
ДА/ YES

Пожилые соседки любили посплетничать.
The elderly neighbors loved to gossip.
Хозяйка, которую после прогулки они сильно расстроили новостями, легла на диван в гостиной.
Housewife, whom.ACC after walk they.NOM really upset by news, lay on couch in living_room.
‘The housewife, whom after the walk they really upset with the news, lay on the couch in the living room.’
Были ли соседки расстроены хозяйкой?
Were the neighbors upset by the housewife?
НЕТ/ NO

Пожилые соседки любили посплетничать.
The elderly neighbors loved to gossip.
Хозяйка пожаловалась, что после прогулки их сильно расстроила новостями тетушка.
Housewife complained, that after walk them.ACC really upset by news aunty.NOM.
‘The housewife complained that after the walk the aunty really upset them with the news.’
Были ли соседки расстроены тетушкой?
Were the neighbors upset by the aunty?
ДА/ YES

Пожилые соседки любили посплетничать.
The elderly neighbors loved to gossip.
Хозяйка пожаловалась, что после прогулки они сильно расстроили новостями тетушку.
Housewife complained, that after walk they.NOM really upset by news aunty.ACC.
‘The housewife complained that after the walk they really upset the aunty with the news.’
Были ли соседки расстроены тетушкой?
Were the neighbors upset by the aunty?
НЕТ/ NO

31. Работники библиотеки вели себя неподобающе.
The library staff behaved inappropriately.
Администратор, который в понедельник их строго упрекнул за маленькую оплошность, написал жалобу в гневе.
Administrator, who.NOM on Monday them.ACC severely reproached for little mistake, wrote complaint in anger.
‘The administrator, who severely reproached them for a little mistake on Monday, wrote a complaint in anger.’
Работники упрекнули администратора за маленькую оплошность?
Did the library workers reproach the administrator for a little mistake?
НЕТ/ NO

Работники библиотеки вели себя неподобающе.
The library staff behaved inappropriately.
Администратор узнал, что в понедельник их строго упрекнули за маленькую оплошность учителем.
Administrator found out, that on Monday them.ACC severely reproached for little mistake teacher.NOM.
‘The administrator found out that the teacher severely reproached them for a little mistake on Monday.’
Работники упрекнули учителя за маленькую оплошность?
Did library workers reproach the teacher for a little mistake?
ДА/ YES

Работники библиотеки вели себя неподобающе.
The library staff behaved inappropriately.
Администратор узнал, что в понедельник они строго упрекнули за маленькую оплошность учителя.
Administrator found out, that on Monday they.NOM severely reproached for little mistake teacher.ACC.
‘The administrator found out that they severely reproached the teacher for a little mistake on Monday.’
Работники упрекнули учителя за маленькую оплошность?
Did library workers reproach the teacher for a little mistake?
ДА / YES

32. Батюшка проводил службу в воскресенье как обычно.
The priest conducted the service on Sunday as usual.
Монахиня, которая во время службы его случайно задела локтем, замешкалась у алтаря.
Nun, who NOM at time of service him ACC accidentally touched by elbow got confused at altar.
‘The nun, who during the service accidentally touched him with her elbow, got confused at the altar.’

Задел ли батюшка монахиню локтем?
Did the priest touch the nun with his elbow?
НЕТ / NO

Батюшка проводил службу в воскресенье как обычно.
The priest conducted the service on Sunday as usual.
Монахиня, которую во время службы он случайно задел локтем, замешкалась у алтаря.
Nun, whom ACC at time of service he NOM accidentally touched by elbow got confused at altar.
‘The nun, whom during the service he accidentally touched with his elbow, got confused at the altar.’

Задел ли батюшка монахиню локтем?
Did the priest touch the nun with his elbow?
ДА / YES

Батюшка проводил службу в воскресенье как обычно.
The priest conducted the service on Sunday as usual.
Монахиня увидела, что во время службы он случайно задел локтем прихожанку.
Nun saw, that at time of service him ACC accidentally touched on elbow parishioner NOM.
‘The nun saw that during the service the parishioner accidentally touched him with her elbow.’

Задел ли батюшка прихожанку локтем?
Did the priest touch the parishioner with his elbow?
НЕТ / NO

Батюшка проводил службу в воскресенье как обычно.
The priest conducted the service on Sunday as usual.
Монахиня увидела, что во время службы он случайно задел локтем прихожанку.
Nun saw, that at time of service he NOM accidentally touched on elbow parishioner ACC.
‘The nun saw that during the service he accidentally touched the parishioner with his elbow.’

Задел ли батюшка прихожанку локтем?
Did the priest touch the parishioner with his elbow?
ДА / YES

33. Добровольцы-спасатели часто выезжали на места происшествий.
The volunteer rescuers often traveled to the places of incidents.

The brunet was a frequent visitor to the restaurant.
The barmaid, who near the bar rudely pushed him on his shoulder, dropped a glass of wine.

Did the barmaid push the brunette on his shoulder?

ДА / YES

The brunette was a frequent visitor to the restaurant.

The barmaid, whom near the bar he rudely pushed on her shoulder, dropped a glass of wine.

Did the waitress push the brunette on his shoulder?

НЕТ / NO

The barmaid saw that near the bar he rudely pushed the waitress on her shoulder.

The philosopher, who literally quoted her at the conference last month, taught a course at Cambridge.

Философ, который в прошлом месяце ее дословно процитировал на конференции, преподавал курс в Кембридже.

The linguist was famous for her speeches about artificial intelligence.
Was the philosopher quoted by the linguist at the conference?

ДА/YES

The philosopher, whom she literally quoted at the conference last month, taught a course at Cambridge.

The philosopher said, that on last month she literally quoted at conference mathematician.

Was the mathematician quoted by the linguist at the conference?

ДА/YES

The student from a higher grade, who after the second period silently provoked them for a fight, explained the situation after the incident.

Was the student from a higher grade provoked by the hooligans for a fight?
Местные хулиганы не оставляли некоторых учеников в покое.
Local hooligans did not leave some students alone.
Старшеклассница, которую после второго урока они молча спровоцировали на драку, объяснила ситуацию после происшествия.
Higher_grade_student, whom.ACC after second period they.NOM silently provoked for fight, explained situation after incident.
‘The student from a higher grade, whom after the second period they silently provoked for a fight, explained the situation after the incident.’
Была ли старшеклассница спровоцирована хулиганами на драку?
Was the student from a higher grade provoked by the hooligans for a fight?
ДА/ YES
Местные хулиганы не оставляли некоторых учеников в покое.
Local hooligans did not leave some students alone.
Старшеклассница объяснила, что после второго урока их молча спровоцировала на драку одноклассница.
Higher_grade_student explained, that after second period they.NOM silently provoked for fight classmate.NOM.
‘The student from a higher grade explained that after the second period their classmate silently provoked them for a fight.’
Была ли одноклассница спровоцирована хулиганами на драку?
Was the classmate provoked by the hooligans for a fight?
НЕТ/ NO
Местные хулиганы не оставляли некоторых учеников в покое.
Local hooligans did not leave some students alone.
Старшеклассница объяснила, что после второго урока они молча спровоцировали на драку одноклассницу.
Higher_grade_student explained, that after second period they.NOM silently provoked for fight classmate.ACC.
‘The student from a higher grade explained that after the second period they silently provoked their classmate for a fight.’
Была ли одноклассница спровоцирована хулиганами на драку?
Was the classmate provoked by the hooligans for a fight?
ДА/ YES

37. Вахтерша обычно работала допоздна.
The janitor usually worked late.
Слесарь, который вчера вечером ее сильно ударил по голове, уволился с работы.
Locksmith, who.NOM yesterday night her.ACC strongly hit on head, quit from job.
‘The locksmith, who last night strongly hit her on my head, quit his job.’
Ударил слесарь вахтершу по голове?
Did the locksmith hit the janitor on her head?
ДА/ YES
Вахтерша обычно работала допоздна.
The janitor usually worked late.
Слесарь, которого вчера вечером она сильно ударила по голове, уволился с работы.
Locksmith, whom yesterday night she strongly hit on head, quit from job.

‘The locksmith, whom last night she strongly hit on his head, quit his job.’

Did the locksmith hit the janitor on her head?

НЕТ/ NO

The janitor usually worked late.

The janitor usually worked late.

Locksmith told, that yesterday night she strongly hit on head plumber.

‘The locksmith said that last night the plumber strongly hit her on her head.’

Did the plumber hit the janitor on her head?

ДА/ YES

The janitor usually worked late.

The janitor usually worked late.

Locksmith told, that yesterday night she strongly hit on head plumber.

‘The locksmith said that last night she strongly hit the plumber on his head.’

Did the plumber hit the janitor on her head?

НЕТ/ NO

38. Участники программы были приглашены из лучших школ страны.

The show participants were invited from the best schools of the country.

Ведущая, которая во время викторины их явно озадачила своим комментарием, ответила вопросом на вопрос.

Show-host, whom at time of quiz they clearly puzzled by their comment, answered question to question.

‘The show host, whom during the quiz they clearly puzzled with their comment, answered the question with another question.’

Были ли участники озадачены комментарием ведущей?

Were the participants puzzled by the comment of the show host?

НЕТ/ NO

Участники программы были приглашены из лучших школ страны.

The show participants were invited from the best schools of the country.

Ведущая, которую во время викторины они явно озадачили своим комментарием, ответила вопросом на вопрос.

Show-host, whom at time of quiz they clearly puzzled by their comment, answered question to question.

‘The show host, whom during the quiz they clearly puzzled with their comment, answered the question with another question.’

Были ли участники озадачены комментарием ведущей?

Were the participants puzzled by the comment of the show host?

НЕТ/ NO

Участники программы были приглашены из лучших школ страны.

The show participants were invited from the best schools of the country.
Ведущая сказала, что во время викторины их явно озадачила своим комментарием зрительница.
Show-host said, that at time of quiz them.ACC clearly puzzled by her comment viewer.NOM.
‘The show host said that during the quiz the viewer clearly puzzled them by her comment.’
Были ли участники озадачены комментарием зрительницы?
Were the participants puzzled by the comment of the viewer?
ДА/ YES
Участники программы были приглашены из лучших школ страны.
The show participants were invited from the best schools of the country.
Ведущая сказала, что во время викторины они явно озадачили своим комментарием зрительницу.
Show-host said, that at time of quiz they.NOM clearly puzzled by their comment viewer.ACC.
‘The show host said that during the quiz they clearly puzzled the viewer by their comment.’
Были ли участники озадачены комментарием зрительницы?
Were the participants puzzled by the comment of the viewer?
НЕТ/ NO

39. Солдаты имели отличную боевую подготовку.
The soldiers had excellent military training.
Сержант, который с самого начала их слегка недолюбливал за хвастовство,
получил строгий выговор.
Sergeant, who.NOM from very beginning them.ACC slightly disliked for bragging, received strict reprimand.
‘The sergeant, who from the very beginning slightly disliked them for bragging, received a strict reprimand.’
Недолюбливали ли солдаты сержанта за хвастовство?
Did the soldiers dislike the sergeant for bragging?
НЕТ/ NO
Солдаты имели отличную боевую подготовку.
The soldiers had excellent military training.
Сержант, которого с самого начала они слегка недолюбливали за хвастовство,
получил строгий выговор.
Sergeant, whom.ACC from very beginning they.NOM slightly disliked for bragging, received strict reprimand.
‘The sergeant, whom from the very beginning they slightly disliked for bragging, received a strict reprimand.’
Недолюбливали ли солдаты сержанта за хвастовство?
Did the soldiers dislike the sergeant for bragging?
ДА/ YES
Солдаты имели отличную боевую подготовку.
The soldiers had excellent military training.
Сержант осознал, что с самого начала их слегка недолюбливал за хвастовство майор.
Sergeant realized, that from very beginning them.ACC slightly disliked for bragging major.NOM.
‘The sergeant realized that from the very beginning the major slightly disliked them for bragging.’

Недолюбливали ли солдаты майора за хвастовство?
Did the soldiers dislike the major for bragging?
НЕТ/ NO

Солдаты имели отличную боевую подготовку.
The soldiers had excellent military training.
Сержант осознал, что с самого начала они слегка недолюбливали за хвастовство майора.
Sergeant realized, that from very beginning they.NOM slightly disliked for bragging major.ACC.
‘The sergeant realized that from the very beginning they slightly disliked the major for bragging.’

Недолюбливали ли солдаты майора за хвастовство?
Did the soldiers dislike the major for bragging?
ДА/ YES

40. За свою карьеру парикмахер был награжден несколькими премиями.
During his career, the barber was awarded several prizes.
Стилистка, которая уже много лет его очень уважала за хорошую работу, опоздала на встречу.
Stylist, who.NOM already many years him.ACC strongly respected for good work, came to meeting late.
‘The stylist, who already for many years respected him a lot for good work, came to the meeting late.’

Уважал ли парикмахер стилистку за хорошую работу?
Did the barber respect the stylist for good work?
НЕТ/ NO

За свою карьеру парикмахер был награжден несколькими премиями.
During his career, the barber was awarded several prizes.
Стилистка, которую уже много лет он очень уважал за хорошую работу, опоздала на встречу.
Stylist, whom.ACC already many years he.NOM strongly respected for good work, came to meeting late.
‘The stylist, whom already for many years he respected a lot for good work, came to the meeting late.’

Уважал ли парикмахер стилистку за хорошую работу?
Did the barber respect the stylist for good work?
ДА/ YES

За свою карьеру парикмахер был награжден несколькими премиями.
During his career, the barber was awarded several prizes.

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Стилистка знала, что уже много лет его очень уважала за хорошую работу маникюриша.
Stylist knew, that already many years he strongly respected for good work manicurist.com.
‘The stylist knew that already for many years he respected the manicurist a lot for good work.’

Уважал ли парикмахер маникюришу за хорошую работу?
Did the barber respect the manicurist for good work?
НЕТ/ NO

За свою карьеру парикмахер был награжден несколькими премиями.
During his career, the barber was awarded several prizes.

Стилистка знала, что уже много лет он очень уважал за хорошую работу маникюришу.
Stylist knew, that already many years him strongly respected for good work manicurist.com.
‘The stylist knew that already for many years he respected the manicurist a lot for good work.’

Уважал ли парикмахер маникюришу за хорошую работу?
Did the barber respect the manicurist for good work?
ДА/ YES

41. Шифровальщики отвечали за секретность передачи данных во время войны.
The coders were responsible for the secrecy of the data transfer during the war.

Генерал, который во время переговоров их сильно унизил у всех на глазах, допустил ошибку в бое.
General, who at time of negotiations them suddenly humiliated with all at eyes, made error in battle.
‘The general, who during the negotiations suddenly humiliated them in front of everyone, committed an error in battle.’

Были ли шифровальщики уножены генералом у всех на глазах?
Were the coders humiliated by the general in front of everyone?
ДА/ YES

Шифровальщики отвечали за секретность передачи данных во время войны.
The coders were responsible for the secrecy of the data transfer during the war.

Генерал, которого во время переговоров они сильно унизили у всех на глазах, допустил ошибку в бое.
General, whom suddenly humiliated with all at eyes, made error in battle.
‘The general, whom during the negotiations they suddenly humiliated in front of everyone, committed an error in battle.’

Были ли шифровальщики уножены генералом у всех на глазах?
Were the coders humiliated by the general in front of everyone?
НЕТ/ NO

Шифровальщики отвечали за секретность передачи данных во время войны.
The coders were responsible for the secrecy of the data transfer during the war.
Генерал доложил, что во время переговоров их сильно унизил у всех на глазах сержант.
General said, that at time of negotiations them.ACC suddenly humiliated with all at_eyes sergeant.NOM.
‘The general said that during the negotiations the sergeant suddenly humiliated them in front of everyone.’

Были ли шифровальщики унижены сержантом у всех на глазах?
Were the coders humiliated by the sergeant in front of everyone?

ДА / YES
Шифровальщики отвечали за секретность передачи данных во время войны.
The coders were responsible for the secrecy of the data transfer during the war.

General said, that at time of negotiations they.NOM suddenly humiliated with all at_eyes sergeant.ACC.
‘The general said that during the negotiations they suddenly humiliated the sergeant in front of everyone.’

Были ли шифровальщики унижены сержантом у всех на глазах?
Were the coders humiliated by the sergeant in front of everyone?

НЕТ / NO

42. Акушер всегда работал в ночной смену.
The obstetrician always worked the night shift.

Медсестра, которая прошлой ночью его потихоньку вызвала из процедурной, уехала домой пораньше.
Nurse, who.NOM last night him.ACC quietly called out of procedural, went home early.
‘The nurse, who quietly called him out of the procedural, went home early.’

Медсестра вызвала акушера из процедурной?
Did the nurse call the obstetrician out of the procedural?

ДА / YES
Акушер всегда работал в ночной смену.
The obstetrician always worked the night shift.

Медсестра, которую прошлой ночью он потихоньку вызвал из процедурной, уехала домой пораньше.
Nurse, whom.ACC last night he.NOM quietly called out of procedural, went home early.
‘The nurse, whom he quietly called out of the procedural, went home early.’

Медсестра вызвала акушера из процедурной?
Did the nurse call the obstetrician out of the procedural?

НЕТ / NO
Акушер всегда работал в ночной смену.
The obstetrician always worked the night shift.

Медсестра вспомнила, что прошлой ночью его потихоньку вызвала из процедурной нянича.
Nurse remembered, that last night him.ACC quietly called out of procedural nanny.NOM.
‘The nurse remembered that the nanny quietly called him out of the procedural.’
Нянечка вызвала акушера из процедурной?
Did the nanny call the obstetrician out of the procedural?
ДА/ YES
Акушер всегда работал в ночной смену.
The obstetrician always worked the night shift.
Медсестра вспомнила, что прошлой ночью он потихоньку вызвал из процедурной няню.
Nurse remembered, that last night he quietly called out_of procedural nanny.ACC.
‘The nurse remembered that he quietly called the nanny out of the procedural.’
Нянечка вызвала акушера из процедурной?
Did the nanny call the obstetrician out of the procedural?
НЕТ/ NO

43. Прокурор вошла в зал суда.
The prosecutor entered the courtroom.
Адвокат, который на прошлой неделе ее уверенно рекомендовал за заслуги, назначил встречу на вторник.
Lawyer, who.NOM on last week her.ACC confidently recommended for services, arranged meeting on Tuesday.
‘The lawyer, who last week confidently recommended her for her services, arranged the meeting on Tuesday.’
Рекомендовала ли прокурор адвоката за его заслуги?
Did the prosecutor recommend the lawyer for his services?
НЕТ/ NO
Прокурор вошла в зал суда.
The prosecutor entered the courtroom.
Адвокат, которого на прошлой неделе она уверенно рекомендовала за заслуги, назначил встречу на вторник.
Lawyer, whom.ACC on last week she.NOM confidently recommended for services, arranged meeting on Tuesday.
‘The lawyer, whom last week she confidently recommended for services, arranged the meeting on Tuesday.’
Рекомендовала ли прокурор адвоката за его заслуги?
Did the prosecutor recommend the lawyer for his services?
ДА/ YES
Прокурор вошла в зал суда.
The prosecutor entered the courtroom.
Адвокат сказал, что на прошлой неделе ее уверенно рекомендовал за заслуги судья.
Lawyer said, that on last week her.ACC confidently recommended for services judge.NOM.
‘The lawyer said that last week the judge confidently recommended her for her services.’
Рекомендовала ли прокурор судью за его заслуги?
Did the prosecutor recommend the judge for his services?
НЕТ/ NO
Прокурор вошла в зал суда.
The prosecutor entered the courtroom.
Адвокат сказал, что на прошлой неделе она уверенно рекомендовала за заслуги судью.
Lawyer said, that on last week she confidently recommended for services judge.
‘The lawyer said that last week she confidently recommended the judge for his services.’

Рекомендовала ли прокурор судью за его заслуги?
Did the prosecutor recommend the judge for his services?
ДА/ YES

44. Несколько покупателей были недовольны качеством продуктов.
Several buyers were dissatisfied with the quality of the products.
Продавщица, которая ранним утром их нагло оскорбила по телефону, приготовилась работать весь день.
Saleswoman, who early morning them rudely insulted on phone, prepared to work all day.
‘The saleswoman, who early in the morning rudely insulted them on the phone, prepared to work all day.’

Оскорбили ли покупатели продавщицу по телефону?
Did the buyers insult the saleswoman on the phone?
НЕТ/ NO

Несколько покупателей были недовольны качеством продуктов.
Several buyers were dissatisfied with the quality of the products.
Продавщица, которую ранним утром они нагло оскорбили по телефону, приготовилась работать весь день.
Saleswoman, whom early morning they rudely insulted on phone, prepared to work all day.
‘The saleswoman, whom early in the morning they rudely insulted on the phone, prepared to work all day.’

Оскорбили ли покупатели продавщицу по телефону?
Did the buyers insult the saleswoman on the phone?
ДА/ YES

Несколько покупателей были недовольны качеством продуктов.
Several buyers were dissatisfied with the quality of the products.
Продавщица рассказала, что ранним утром их нагло оскорбила по телефону кладовщица.
Saleswoman told, that early morning them rudely insulted on phone storekeeper.
‘The saleswoman said that early in the morning the storekeeper rudely insulted them on the phone.’

Оскорбили ли покупатели кладовщицу по телефону?
Did the buyers insult the storekeeper on the phone?
НЕТ/ NO

Несколько покупателей были недовольны качеством продуктов.
Several buyers were dissatisfied with the quality of the products.
Продавщица рассказала, что ранним утром они нагло оскорбили по телефону кладовщицу.
Saleswoman told, that early morning they rudely insulted on phone storekeeper.

‘The saleswoman said that early in the morning they rudely insulted the storekeeper on the phone.’

Оскорбили ли покупатели кладовщицу по телефону?
Did the buyers insult the storekeeper on the phone?
ДА/ YES

45. Солистка была известна по всей Европе.
The soloist was known throughout Europe.

Гитарист, который с детства ее безгранично любил за талант, основал группу в 1988 году.
Guitarist, who from childhood her devotedly loved for talent, established band in 1988 year.

‘The guitarist, who from childhood devotedly loved her for her talent, established the band in 1988.’

Была ли солистка любима гитаристом за ее талант?
Was the soloist loved by the guitarist for her talent?
ДА/ YES

Солистка была известна по всей Европе.
The soloist was known throughout Europe.

Гитарист, которого с детства она безгранично любила за талант, основал группу в 1988 году.
Guitarist, whom from childhood she devotedly loved for talent, established band in 1988 year.

‘The guitarist, whom from childhood she devotedly loved for his talent, established the band in 1988.’

Была ли солистка любима гитаристом за ее талант?
Was the soloist loved by the guitarist for her talent?
НЕТ/ NO

Солистка была известна по всей Европе.
The soloist was known throughout Europe.

Гитарист знал, что с детства ее безгранично любил за талант бassist.
Guitarist knew, that from childhood her devotedly loved for talent bassist.

‘The guitarist knew that from childhood the bassist devotedly loved her for her talent’

Была ли солистка любима басистом за ее талант?
Was the soloist loved by the bassist for her talent?
ДА/ YES

Солистка была известна по всей Европе.
The soloist was known throughout Europe.

Гитарист знал, что с детства она безгранично любила за талант басиста.
Guitarist knew, that from childhood she devotedly loved for talent bassist.

‘The guitarist knew that from childhood she devotedly loved the bassist for his talent’

Была ли солистка любима басистом за ее талант?
Was the soloist loved by the bassist for her talent?
НЕТ/ NO
46. Флейтисты не имели большого опыта работы с оркестром.
The flute-players have not had much experience with the orchestra.
Скрипачка, которая во время репетиции их жестоко разгневала своим поведением, отказалась выступать на концерте.
Violinist, who.NOM at time of_rehearsal them.ACC brutally angered by_her behavior, refused to perform at concert.
‘The violinist, who during the rehearsal brutally angered them by her behavior, refused to perform at the concert.’
Были ли флейтисты разгневаны поведением скрипачки?
Were the flute-players angered by the violinist's behavior?
ДА/ YES
Флейтисты не имели большого опыта работы с оркестром.
The flute-players have not had much experience with the orchestra.
Скрипачка, которую во время репетиции они жестоко разгневали своим поведением, отказалась выступать на концерте.
Violinist, whom.ACC at time of_rehearsal they.NOM brutally angered by_their behavior, refused to perform at concert.
‘The violinist, whom during the rehearsal they brutally angered by their behavior, refused to perform at the concert.’
Были ли флейтисты разгневаны поведением скрипачки?
Were the flute-players angered by the violinist's behavior?
НЕТ/ NO
Флейтисты не имели большого опыта работы с оркестром.
The flute-players have not had much experience with the orchestra.
Скрипачка подозревала, что во время репетиции их жестоко разгневала своим поведением баянистка.
Violinist suspected, that at time of_rehearsal them.ACC brutally angered by_her behavior accordionist.NOM.
‘The violinist suspected that during the rehearsal the accordionist brutally angered them by her behavior.’
Были ли флейтисты разгневаны поведением баянистки?
Were the flute-players angered by the accordionist's behavior?
ДА/ YES
Флейтисты не имели большого опыта работы с оркестром.
The flute-players have not had much experience with the orchestra.
Скрипачка подозревала, что во время репетиции они жестоко разгневали своим поведением баянистку.
Violinist suspected, that at time of_rehearsal they.NOM brutally angered by_their behavior accordionist.ACC.
‘The violinist suspected that during the rehearsal they brutally angered the accordionist by their behavior.’
Были ли флейтисты разгневаны поведением баянистки?
Were the flute-players angered by the accordionist's behavior?
НЕТ/ NO

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47. Спецагенты обеспечивали безопасность во время переговоров на высшем уровне.
The special agents provided security during the negotiations at the highest level.
Сенатор, который сегодня днем их заметно обеспокоил после саммита, решил покинуть резиденцию.
Senator, who NOM today afternoon them ACC obviously disturbed after summit, decided to leave residence.
‘The Senator, who this afternoon obviously disturbed them after the summit, decided to leave the residence.’
Был ли сенатор обеспокоен спецагентами после саммита?
Was the Senator disturbed by the agents after the summit?
НЕТ/NO
Спецагенты обеспечивали безопасность во время переговоров на высшем уровне.
The special agents provided security during the negotiations at the highest level.
Сенатор, которого сегодня днем они заметно обеспокоили после саммита, решил покинуть резиденцию.
Senator, whom ACC today afternoon they NOM obviously disturbed after summit, decided to leave residence.
‘The Senator, whom this afternoon they obviously disturbed after the summit, decided to leave the residence.’
Был ли сенатор обеспокоен спецагентами после саммита?
Was the Senator disturbed by the agents after the summit?
ДА/YES
Спецагенты обеспечивали безопасность во время переговоров на высшем уровне.
The special agents provided security during the negotiations at the highest level.
Сенатор сказал, что сегодня днем их заметно обеспокоил после саммита премьер министр.
Senator said, that today afternoon them ACC obviously disturbed after summit Prime Minister NOM.
‘The Senator said that this afternoon the Prime Minister obviously disturbed them after the summit’
Был ли премьер министр обеспокоен спецагентами после саммита?
Was the Prime Minister disturbed by the agents after the summit?
НЕТ/NO
Спецагенты обеспечивали безопасность во время переговоров на высшем уровне.
The special agents provided security during the negotiations at the highest level.
Сенатор сказал, что сегодня днем они заметно обеспокоили после саммита премьер министра.
Senator said, that today afternoon they NOM obviously disturbed after summit Prime Minister ACC.
‘The Senator said that this afternoon they obviously disturbed the Prime Minister after the summit’
Был ли премьер министр обеспокоен спецагентами после саммита?
Was the Prime Minister disturbed by the agents after the summit?
ДА/YES
48. Певец прекрасно пел, но имел сложный характер.
The singer sang beautifully, but had a difficult character.
Танцовщица, которая накануне его бессовестно опозорила своим поведением, ушла в расстроенных чувствах.
Dancer, who.NOM before performance him.ACC shamelessly disgraced by her behavior, left in sad feelings.
‘The dancer, who before the performance shamelessly disgraced him with her behavior, left sad.’
Была ли танцовщица опозорена поведением певца?
Was the dancer disgraced by the singer's behavior?
НЕТ/ NO
Певец прекрасно пел, но имел сложный характер.
The singer sang beautifully, but had a difficult character.
Танцовщица поняла, что накануне он бессовестно опозорил своим поведением пианистку.
Dancer understood, that before performance him.ACC shamelessly disgraced by her behavior pianist.NOM.
‘The dancer understood that before the performance the pianist shamelessly disgraced him with her behavior.’
Была ли пианистка опозорена поведением певца?
Was the pianist disgraced by the singer's behavior?
НЕТ/ NO
Певец прекрасно пел, но имел сложный характер.
The singer sang beautifully, but had a difficult character.
Танцовщица поняла, что накануне он бессовестно опозорил своим поведением пианистку.
Dancer understood, that before performance he.NOM shamelessly disgraced by his behavior pianist.ACC.
‘The dancer understood that before the performance he shamelessly disgraced the pianist with his behavior.’
Была ли пианистка опозорена поведением певца?
Was the pianist disgraced by the singer's behavior?
ДА/ YES
REFERENCES


