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An experimental study of argument extraction from presuppositional clauses in Russian

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Abstract

The paper discusses two acceptability rating studies testing wh-interrogative and relative extractions of arguments from *čto*-clauses of presuppositional predicates like *žalet'* 'regret', as contrasted with nonpresuppositional predicates like *nadejat'sja* 'hope' and nominalized (*to čto*) clauses. The results show a difference in extraction between bare and nominalized clauses but no difference between presuppositional and nonpresuppositional clauses, raising potential doubts about the analysis of presuppositional clauses as DPs with a silent D.

Keywords: syntactic islands, presuppositional clauses, nominalized clauses, Russian, experimental study

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Экспериментальное исследование выдвигания аргументов из пресуппозициональных клаузов в русском языке

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Аннотация

В статье обсуждаются два эксперимента на оценку приемлемости, проверяющие выдвигание аргументного вопросительного слова и относительного местоимения из клаузов со *что* при пресуппозициональных предикатах типа *жалеть* в сравнении с непресуппозициональными предикатами типа *надеяться*, а также номинализованными клаузами с *то, что*. Результаты показывают различие между выдвиганием из простых и номинализованных клаузов при отсутствии различий между пресуппозициональными и непресуппозициональными клаузами, создавая потенциальную проблему для анализа пресуппозициональных клаузов как DP-проекций с нулевым D.

Ключевые слова: синтаксические острова, пресуппозициональные клаузы, номинализованные клаузы, русский язык, экспериментальное исследование

1 Introduction

In Russian, complement clauses can be bare or nominalized, when preceded by the demonstrative *to* 'that' (Kobozeva, 2013, a.o.). It is usually assumed that nominalized CPs, as in (1a), are (strong) islands, whereas bare CPs, as in (1b), generally allow extraction, although it is considered marked for indicative (*čto*) clauses (Khomitsevich, 2007; Morgunova, 2021b).

- (1) a. **Komu₁ Lena nadeetsja na [DP to čto pomožet t₁ s kvartiroj]?*
to whom Lena hopes on that.ACC that will help with apartment
Intended: 'Who does Lena hope that she will help with the apartment?'

- b. ??*Komu*₁ *Lena nadeetsja* [_{CP} *čto pomožet t₁ s kvartiroj*]?
 to whom Lena hopes that will help with apartment
 Intended: ‘Who does Lena hope that she will help with the apartment?’

Extraction may also depend on the lexical semantic class of the predicate. Thus, complement clauses of *presuppositional* predicates, including cognitive and emotive factives like ‘remember’ or ‘regret’, are assumed to be more difficult to extract from, compared to *nonpresuppositional* predicates, including nonfactives like ‘say’ or ‘think’. Because this contrast is much stronger for adjunct compared to argument (object) extractions, presuppositional clauses are usually considered *weak islands* (Hegarty, 1992; Basse, 2008, a.o.). An influential account of presuppositional islands (Kastner, 2015) (see also (Honcoop, 1998)) explains them by analyzing presuppositional clauses as DPs (cf. (Kiparsky and Kiparsky, 1970)) headed by a silent definite determiner creating a barrier for extraction (in contrast to nonpresuppositional clauses analyzed as bare CPs). The crucial assumption of this account is that when D merges with a CP it creates a *weak* island.¹ However, there is also a prominent view that definite or presuppositional DPs create a *strong* island (Davies and Dubinsky, 2003; Sichel, 2018, a.o.), leading to uncertainty as to the validity of Kastner’s silent D analysis, at least for English (cf. (Haegeman, 2012; Djärv, 2019)).

The main goal of this paper is to experimentally investigate the contrast in extraction from presuppositional and nonpresuppositional clauses in Russian in order to examine the predictions of Kastner’s silent D analysis, which was recently adopted to presuppositional *čto* clauses in (Knyazev, 2022) (based on independent considerations).² The present paper looks only at *argument* extractions and thus provides a test of the *strong island version* of the silent D analysis, i.e. testing the latter under the assumption that (definite) D is an absolute barrier for extraction in Russian, whether in general (Pereltsvaig, 2007; Lyutikova, 2010) or specifically when it merges with a CP (Bondarenko, 2022). With this qualification, the silent D analysis predicts a contrast in (argument) extraction between presuppositional *čto* clauses, as in (2b), and nonpresuppositional clauses in (1b). It further predicts that extraction from presuppositional clauses should not differ from the corresponding extraction from *to čto* clauses, as in (2a).

- (2) a. **Komu*₁ *Vasya žaleet o tom, čto odolžil den’gi t₁*?
 to whom Vasya regrets about that.PREP that lent money
 Intended: ‘Who does Vasya regret that he has lent the money to?’
 b. **Komu*₁ *Vasya žaleet* [_{PP} \emptyset_P [_{DP} \emptyset_D [_{CP} *čto odolžil den’gi t₁*]]]?
 to whom Vasya regrets that lent money
 Intended: ‘Who does Vasya regret that he has lent the money to?’

Because extraction from presuppositional vs. nonpresuppositional CPs to my knowledge has not been experimentally tested in Russian, the paper also aims to clarify the empirical picture in this regard.

The paper also examines whether nominalized (*to čto*) clauses are indeed strong islands, which to my knowledge also has not been shown experimentally. In particular, it is important to control for the acceptability of *to čto* clauses in the baseline (no extraction) condition since they may be independently degraded for some verbs (Kobozeva, 2013). To address this confound, the paper focuses on *oblique/PP-taking* predicates like *nadejat’sja* ‘hope’ and *žalet* ‘regret’ (cf. (1)–(2)), for which *to čto* clauses are systematically allowed. Two additional questions are also addressed: is there is a difference in extraction between *čto*- and *čto-by*-clauses? and between wh-interrogative and relative clause dependencies?

Two acceptability rating studies were conducted, one with wh-interrogative extractions (Section 2) and the other with relativization (Section 3). The results confirm the view that nominalized CPs uniformly block extraction. At the same time, they do not show a contrast between presuppositional and nonpresuppositional CPs, contrary to the silent D view and in line with the null hypothesis, according to which presuppositional clauses are bare CPs (Bondarenko, 2022). An alternative interpretation of the results in terms of the weak island version of the silent D analysis is also discussed (Section 4).

¹More precisely, silent D is assumed to merge directly with a CP creating a weak island, whereas overt D is assumed to merge with (possibly null) N + CP creating a strong (complex NP) island (Kastner, 2015, p.168).

²Island data are not discussed in (Knyazev, 2022).

2 Experiment 1

2.1 Design, Materials and Procedure

The experiment had a $2 \times 2 \times 2$ design, with factors: (i) predicate class (presuppositional vs. nonpresuppositional); (ii) presence/absence of extraction; and (iii) complement type (*čto*- vs. *to čto*-clause). The 4 conditions with extraction were shown in (1)–(2); the baseline/no extraction conditions are given in (3).³

- (3) a. *Lena nadeetsja (na to), čto pomožet Vane s kvartiroj.*
Lena hopes on that.ACC that will help to Vanya with apartment
'Lena hopes that she will help Vanya with the apartment.'
- b. *Vasya žaleet (o tom), čto odolžil den'gi Andreju.*
Vasya regrets about that.PREP that lent money to Andrey
'Vasya regrets that he lent money to Andrey.'

4 verbs were used in each class, given in (4) (with subcategorization). The nonpresuppositional class had 4 nonfactive belief/speech predicates; the presuppositional class had 3 emotive factive predicates (*žalet* 'regret', *rad* 'glad', *gordit'sja* 'proud') and 1 communicative factive *priznat'sja* 'confess'.⁴

- (4) a. nonpresuppositional: *nadejat'sja (na ACC)* 'hope', *uveren (v PREP)* 'certain', *namekat' (na ACC)* 'hint', *xvastat'sja (INS)* 'boast'
- b. presuppositional: *žalet' (o PREP)* 'regret', *rad (DAT)* 'glad', *gordit'sja (INS)* 'proud', *priznat'sja (v PREP)* 'confess'

With each predicate, 4 lexically matched sets, crossing extraction and complement type, were created. The 32 experimental sentences were distributed among 4 lists in a Latin Square design (i.e. participants saw each predicate in 1 of the 4 conditions). There were 19 fillers (including practice items, 9 unacceptable and 9 acceptable); the unacceptable fillers contained 4 complex NP violations and 5 selectional violations; 1 sentence contained extraction from the complement of *dumat* 'think', used as a baseline.

The task was to rate the naturalness of the sentences on a 1–7 scale. The experiment was hosted on PCIBex Farm (<https://farm.pcibex.net/>) and was completed by 45 people.

2.2 Analysis and Predictions

Data from 44 participants who complied with the task were analyzed. A linear mixed effects model was fitted to z-score transformed data, as implemented by the *lmerTest* package for R. Predicate class (with nonpresuppositional as baseline), complement type (with bare as baseline) and extraction were entered as fixed effects and a maximum random effects structure that allowed for convergence was used.

The silent D analysis predicts an interaction between all 3 factors such that with nonpresuppositional predicates extractions from nominalized CPs should be less acceptable compared to extractions from bare CPs (relative to the baseline condition), whereas with presuppositional predicates there should be no difference between extractions from nominalized and bare CPs. By contrast, the alternative analysis, whereby presuppositional clauses are bare CPs, predicts an interaction only between complement type and extraction (for both predicate classes). Both analyses also predict the main effect of extraction such that extraction from bare CPs should be less acceptable compared to the baseline, due to the markedness of extractions from *čto*-clauses in Russian (Khomitsevich, 2007; Morgunova, 2021b).

The predictions of the analyses can be visualized by plotting for each predicate class an interaction plot with the mean ratings for the 4 conditions (with extraction plotted on the x-axis and complement type represented by line type). The silent D analysis predicts non-parallel lines for nonpresuppositional predicates, with a steeper slope for the line corresponding to nominalized CPs but parallel lines for presuppositional predicates, whereas the CP analysis predicts non-parallel lines for both predicate classes.

³All sentences involved extraction of accusative or dative objects.

⁴No independent tests for presuppositionality of the predicates were done for this (and the next) experiment; the classification relied on usual treatments of their translational equivalents in the literature, e.g. it matches (Anand et al., 2019), except that *priznat'sja* 'confess' was analyzed as a (semi-)factive ((Sheehan and Hinzen, 2011)). On problems with classification of factive predicates see (Degen and Tonhauser, 2022).

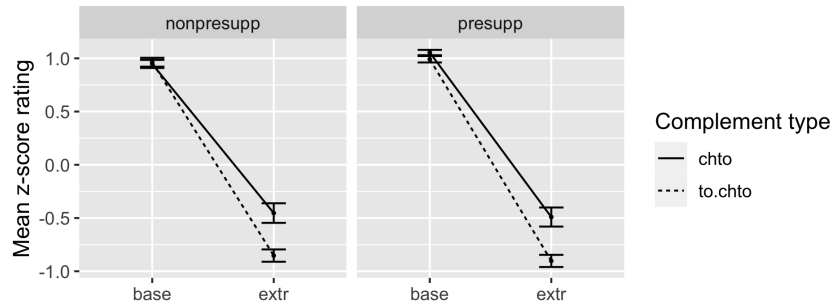


Figure 1: Condition means of Experiment 1.

2.3 Results and Discussion

The results are summarized in Figure 1. As can be seen, the plots are in line with the CP analysis. This was confirmed statistically. The model with item as a random effect showed the effect of extraction (Estimate = -1.39 , SE = 0.08 , $p < 0.001$) such that extractions from bare CPs were mildly unacceptable, with the ratings of $-0.45/-0.49$, similar to extractions with *dumat* ‘think’ in the fillers (-0.42), confirming the view that *čto*-clauses are not fully transparent (Morgunova, 2021b).⁵

The model also showed an interaction between extraction and complement type (Estimate = -0.4 , SE = 0.01 , $p < 0.001$) such that the decrease in acceptability due to extraction was stronger for nominalized compared to bare CPs. Extractions from nominalized CPs had the ratings of $-0.85/-0.9$, similar to complex NP (-1.04) and selectional violations (-0.89), confirming their status as strong islands.

Other effects were not significant, including crucially the 3-way interaction ($p = 0.85$), suggesting that there was no contrast in argument extraction between presuppositional and nonpresuppositional CPs, contrary to the silent D hypothesis. This is further supported by the fact that the interaction effect for individual predicates (measured by DD-scores) did not pattern according to presuppositionality, e.g. the DD-scores for presuppositional predicates *gordit’sja* ‘be proud’ (0.60) and *rad* ‘glad’ were higher than for the nonpresuppositional predicate *nadejat’sja* ‘hope’ (0.18).⁶ To summarize, the results are consistent with the bare CP view but do not provide support for the silent D analysis. (For an alternative interpretation in terms of the weak island version of the latter analysis see Section 4.)

3 Experiment 2

3.1 Design

The experiment was similar to Experiment 1 but tested extractions of the relative pronoun (*kotoryj* ‘which’), which may lead to weaker (compared to *wh*-interrogative extractions) or no island effects with some island types (Sprouse et al., 2016) (cf. (Morgunova, 2021a, p.54–55)). In addition, it also tested *čtoby*-clauses, which are considered more transparent for extraction (Demina, 2021). The experiment had a $3 \times 2 \times 2$ design, as in (5)–(6), which was similar to Experiment 1, except that predicate class had 3 levels: *čto*-nonpresuppositional, *čto*-presuppositional and *čtoby*.⁷

- (5) a. *Akcii, kotorye on byl uveren (v tom), čto budut aktivno pokupat’,*
 shares which.PL.ACC he was certain in that.PREP that will actively buy
neožidanno ruxnuli.
 unexpectedly crashed
 ‘Shares that he was certain that people would actively buy unexpectedly crashed.’

⁵“Estimate” refers to the estimated coefficient, or slope, of a predictor in the model; “SE” refers to the standard error of the estimate; “p” refers to the p-value for a coefficient estimate (using Satterthwaite approximation of degrees of freedom).

⁶DD-scores were calculated using the formula $DD = (mean_{chto[extr]} - mean_{to.chto[extr]}) - (mean_{chto[base]} - mean_{to.chto[base]})$ (Sprouse et al., 2016).

⁷All sentences involved extraction of *kotoryj* ‘which’ from the accusative object position.

- b. *Kniga, ktoruju on gordilsja (tem), što napisal v soavtorstve s nobelevskim laureatom, ne imela uspeha.*
 'book which.SG.ACC he was proud that.INS that wrote in coauthorship with Nobel laureate not had success.'
 'The book which he was proud that he wrote with a Nobel laureate was not successful.'
- c. *Stat'ja, ktoruju on nastajval (na tom), čtoby studenty pročitali, okazalas' nedostupna dlja skačivanija.*
 article which.SG.ACC he insisted on that.PREP that.SUBJ students read turned out unavailable for download
 'The article that he insisted that students should read was not available for downloading.'
- (6) a. *On byl uveren (v tom), što eti akcii budut aktivno pokupat'.*
 he was certain in that.PREP that these shares will actively buy
 'He was certain that people will actively buy these shares.'
- b. *On gordilsja (tem), što napisal knigu v soavtorstve s nobelevskim laureatom.*
 he was proud that.INS that wrote book in coauthorship with Nobel laureate
 'He was proud that he wrote a book with a Nobel laureate.'
- c. *On nastajval (na tom), čtoby studenty pročitali etu stat'ju.*
 he insisted on that.PREP that.SUBJ students read this article
 'He insisted that students should read this article'.

3.2 Materials and Procedure

12 predicates, as in (7), were tested, including 4 from Experiment 1.⁸ The nonpresuppositional class (with *što*) had 4 nonfactive predicates. The presuppositional class had 3 emotive factives *žalet'* 'regret', *gordit'sja* 'proud' and *udivlěn* 'surprised' and 1 response-stance verb *soglasit'sja* 'agree'.⁹

- (7) a. *što*-nonpresuppositional: *uveren* (v PREP) 'certain', *namekat'* (na ACC) 'hint', *nastajvat'* (na PREP) 'insist', *mečtat'* (o PREP) 'dream'
- b. *što*-presuppositional: *žalet'* (o PREP) 'regret', *gordit'sja* (INS) 'proud', *udivlěn* (DAT) 'surprised', *soglasit'sja* (s INS) 'agree'
- c. *čtoby*: *nastajvat'* (na PREP) 'insist', *mečtat'* (o PREP) 'dream', *stremi'sja* (k DAT) 'strive', *sledit'* (za INS) 'see to (it)'

As in Experiment 1, with each predicate, 4 sentence sets were constructed, distributed among 4 lists. There were 18 filler sentences (including 2 practice items): 10 acceptable (6 without extraction and 4 with relative extractions with *sčitat'* 'believe', *predpologat'* 'suppose', *xotet'* 'want' and *prosit'* 'ask', used as baselines) and 8 unacceptable (2 with complex NP and 6 with selectional violations).

The procedure was as in Experiment 1. The experiment was completed by 49 people.

3.3 Analysis

5 participants (who rated complex NP violations higher than acceptable extractions from *čtoby*-clauses) were excluded. The analysis was similar to Experiment 1, except that predicate class was coded using 2 contrasts (for an easier comparison with Experiment 1): (A) *što* vs. *čtoby*; and (B) nonpresuppositional vs. presuppositional (for the *što* classes).

As in Experiment 1, the silent D analysis predicts a 3-way interaction involving contrast B. By contrast, the CP analysis predicts only a two-way interaction between extraction and complement type.

Both analyses also predict a 3-way interaction with contrast A such that extractions from bare *čtoby*-clauses should be more acceptable compared to bare *što*-clauses (relative to the baseline), whereas extractions from nominalized *što*- and *čtoby*-clauses should be equally unacceptable.

⁸Two predicates in the *što*-nonpresuppositional and *čtoby* class, i.e. *nastajvat'* 'insist' and *mečtat'* 'dream', coincided in order to test the effect of *čtoby* directly.

⁹Response-stance predicates (Cattel, 1978) are classified as presuppositional, along with factives (Hegarty, 1992, a.o.). Accordingly, they receive a silent D analysis in (Kastner, 2015).

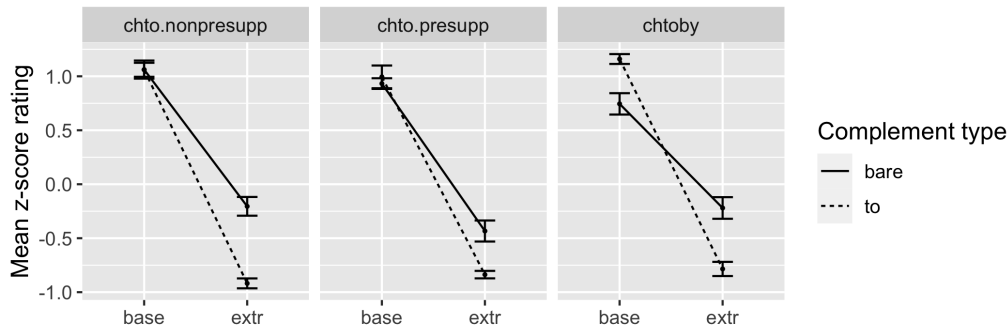


Figure 2: Condition means of Experiment 2.

3.4 Results and Discussion

The results are summarized in Figure 2. The model with item, subject and by-item complement type as random effects showed the effect of extraction (Estimate = -1.21 , SE = 0.06 , $p < 0.001$) and an interaction between extraction and complement type (Estimate = -0.73 , SE = 0.09 , $p < 0.001$) such that extractions from nominalized CPs were less acceptable compared to bare CPs. Although this interaction is visually larger for the nonpresuppositional (*čto*) class than for the presuppositional class, as expected on the silent D analysis, the 3-way interaction with contrast B was not significant (Estimate = -0.11 , SE = 0.11 , $p = 0.31$). Also, the by-predicate DD-scores did not consistently differ according to presuppositionality, e.g. the DD-scores for *žaleť* ‘regret’ (1.30) were higher than the DD-scores for all nonpresuppositional verbs (0.31 – 1.19). Thus, like in Experiment 1, the results suggest that extractions from presuppositional *čto*-clauses (-0.43) do not significantly differ from extractions from nonpresuppositional clauses (-0.20) but at the same time are significantly more acceptable than extraction from *to čto* clauses (-0.84). This is in line with the CP analysis and contrary to the silent D view.

The results also showed a 3-way interaction with contrast A (Estimate = -0.14 , SE = 0.06 , $p = 0.02$).¹⁰ This interaction is best interpreted by fitting separate models for bare and nominalized CPs (with subject and item as random effects). The model for bare CPs showed the effect of extraction (Estimate = -1.26 , SE = 0.07 , $p < 0.001$), the effect of contrast A (Estimate = -0.10 , SE = 0.04 , $p = 0.04$) and an interaction (Estimate = 0.15 , SE = 0.05 , $p = 0.002$), such that although *čtoby*-clauses were rated as lower than *čto*-clauses in the baseline condition this difference disappeared in the extraction condition, suggesting that extractions from *čtoby*-clauses are more acceptable than extractions from *čto*-clauses *relative to the baseline* (cf. the steeper slope of the solid line in the leftmost panels in Figure 2), in accordance with the literature (Khomitsevich, 2007; Demina, 2021).¹¹ By contrast, the model for nominalized CPs showed only the effect of extraction (Estimate = -1.92 , SE = 0.05 , $p < 0.001$), confirming that nominalized CPs are strong islands, which is further supported by the fact that extractions from nominalized CPs had the mean ratings ranging from -0.92 to -0.78 , close to complex NP violations (-1.01).

Finally, there was no clear difference between relative and wh-interrogative extractions.

4 General Discussion and Conclusion

What can we conclude from these results? The fact that argument extractions from presuppositional *čto*-clauses were only mildly unacceptable (in contrast to severely degraded extractions from *to čto*-clauses) and did not differ from extractions from nonpresuppositional clauses is inconsistent with the (strong

¹⁰The model also showed the effect of *to* (Estimate = 0.16 , SE = 0.07 , $p = 0.03$), the effect of contrast A (Estimate = -0.09 , SE = 0.03 , $p = 0.01$), as well as its interaction with extraction (Estimate = 0.13 , SE = 0.04 , $p = 0.002$) and with *to* (Estimate = 0.13 , SE = 0.05 , $p = 0.02$). Other effects were not significant.

¹¹Interestingly, extractions from *čtoby*- and (nonpresuppositional) *čto*-clauses did not differ in *absolute* terms (-0.22 and -0.20), although the corresponding contrast did show up in the fillers (0.07 and -0.46).

island version of the) silent D analysis of presuppositional clauses in (2)b), as proposed in (Knyazev, 2022), following (Kastner, 2015). Instead, it supports the null hypothesis view that both presuppositional and nonpresuppositional clauses are bare CPs (Bondarenko, 2022, p.338–340) (see also footnote 14).

As mentioned in Section 1, an alternative way to interpret the results is to assume the weak island version of the silent D analysis, i.e. that D creates only a weak island when it merges with a CP, as suggested in (Kastner, 2015). On this view, we should not expect a contrast between presuppositional and nonpresuppositional clauses, assuming that weak islands do not block argument extractions.

There are two main issues with this alternative. First, it has been proposed that *čto*-clauses are *generally* weak islands (Bailyn, 2020), providing a potential account of the fact in Russian extractions even from nonpresuppositional clauses are marked (Morgunova, 2021b), as we also saw in the experiments.¹² Yet, if weak islandhood is to be explained by merging of a (definite) D on top of a CP, then *both* presuppositional and nonpresuppositional clauses should have a silent D, unlike in (Kastner, 2015).¹³

The second, and more important, issue is that Kastner’s view that silent D + CP creates a weak island depends on his assumption that *overt* D creates a strong island by virtue of having the structure with a null N (D + N + CP), as in complex NP island (see footnote 1). However, there is convincing evidence that overtly nominalized (*to čto*) clauses in Russian have the structure D + CP, with no null N (Knyazev, 2022; Bondarenko, 2022). Yet, if silent D is associated with the same structure as overt D, we should normally expect it to similarly create a strong island, contrary to Kastner’s view.

This is indeed what (Bondarenko, 2022, p.328) proposes, deriving the strong islandhood of D + CP from Anti-Locality (see references therein). Evidence for this view comes from verbs like *ob’jasnjat’* ‘explain’, *komentirovat’* ‘comment’ and others, which are ambiguous between the presuppositional (‘CP = fact explained/commented on’) and the nonpresuppositional reading (‘CP = content of explanation/comment’). Bondarenko argues that the presuppositional reading corresponds to the structure with a (possibly silent) D, whereas the nonpresuppositional reading corresponds to bare CP. Crucially, the presuppositional reading categorically blocks extraction regardless of the overtness of D, as in (8), supporting the view that D + CP creates a strong island.¹⁴

- (8) **Kogo*₁ *Lena argumentirovala* [\emptyset_D / *to* *čto Zenit legko odoleet* *t*₁]?
 who.ACC Lena argued that.ACC that Zenit easily will win
 ‘Who did Lena argue (for the position) that Zenit will easily defeat?’ (Bondarenko, 2022, p. 326–327)

A potential objection to this argument is that overtness of D may sometimes matter for islandhood, e.g. in the case of subjunctive clauses with factive verbs under negation, where extraction is blocked only by overt but crucially *not* silent D, as in (9) (Bondarenko, 2022, p.329), suggesting that non-overtness of D may obviate Anti-Locality (Erlewine, 2016).¹⁵ Something similar might be going on with presuppositional clauses studied in this paper.

- (9) *Kogo*₁ *Katja ne pomnit* (**takogo* / **togo*), *čtoby* *Ira priglašala* *t*₁?
 who.ACC Katya not remembers such.GEN that.GEN that.SUBJ Ira invited
 ‘Who does Katya not remember Ira inviting?’ (Bondarenko, 2022, p. 329)

To conclude, while the present experimental results do not necessarily falsify the silent D analysis of presuppositional clauses, they provide no specific evidence for it. Thus, to the extent that the burden of proof is on the proponents of silent D, the CP analysis seems preferable. However, further data, particularly on adjunct extractions, are ultimately needed to decide between the two alternatives.

¹²But see (Demina, 2021), which did not find a contrast between argument and adjunct extractions from *čto*-clauses in experimental data (as would be expected on their weak island status).

¹³Incidentally, this (across-the-board) version of the silent D analysis was proposed in (Knyazev, 2016).

¹⁴On Bondarenko’s view, the D + CP structure depends on whether the clause is a true argument (as opposed to a modifier, corresponding to bare CP), rather than to presuppositionality per se. This allows her to maintain the view that presuppositional clauses of oblique/PP-taking verbs like *žalet’* ‘regret’/ *gordit’sja’/sja* ‘be proud’ are bare CPs required by her treatment of silent D is restricted to the *accusative* position—provided they can be analyzed as modifiers (Bondarenko, 2022, p.338–340). While she does not discuss extraction with the latter predicates, the present results can be taken to support the CP analysis for them.

¹⁵Such clauses are assumed to be DPs based on independent semantic considerations (Bondarenko, 2022).

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