Chapter 42

The complementizer *čto* in Russian gapping and stripping

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I present four acceptability judgment experiments on the Russian complementizer *čto* 'that' in the context of two types of verb ellipsis: gapping and stripping. The complementizer is overall acceptable in elliptical constituents, which is in marked contrast to other languages like English and German. However, *čto* displays a nuanced acceptability pattern that is influenced by the choice of the coordinating conjunction. If the coordinator is *a* 'and', *čto* causes a degradation in acceptability ratings. If the coordinator is *i* 'and', *čto* causes no such degradation. This effect is independent of the ellipsis type, and of whether the conjuncts are elliptical at all. The experimental results provide evidence that gapping and stripping allow for clausal coordination in Russian. As for the sensitivity of *čto* to the coordinator, I sketch an analysis on the basis of the semantic relation between the conjuncts (contrast for *a*, parallelism for *i*).

Keywords: gapping, stripping, clausal embedding, complementizer, Russian, acceptability experiments

1 Introduction

When two coordinated clauses contain identical verbs, the second of these verbs can be deleted. This is illustrated in (1), where the finite verb *went* has undergone ellipsis in the second conjunct. This type of verb ellipsis is called gapping (Ross 1968, 1970, Sag 1977, Hankamer 1979, Johnson 2004, 2009, 2014, among many others).

(1) Alan went to the ballgame and John to the movies.

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One central issue in the literature on gapping has been the syntactic status of the elliptical conjunct (e.g. *John to the movies* in 1). While a number of approaches treat the elliptical conjunct as a clause (e.g. Wilder 1997, Hartmann 2000 among others), others make the assumption that what is coordinated are sub-clausal constituents (e.g. Johnson 2004 et seq., Coppock 2001). Many of these approaches focus on the formal implementation of one or the other option (or a mix of both, e.g. Potter et al. 2017).

One empirical question has received comparatively little attention in this discussion (but see, e.g., Wilder 1994, 1997, Taraldsen 2000, Hartmann 2000, Repp 2009, Broekhuis & Corver 2019 among others): Can the elliptical conjunct contain a complementizer when the whole coordination structure is embedded? The theoretic import of this question is clear: If the elliptical conjunct is indeed a clause, it should be able to contain a clausal head, i.e. a complementizer. For some languages (like English), the answer to this question is a clear no, see (2). Other languages such as Spanish (Bonke & Repp 2022) or Romanian (Hoyt & Teodorescu 2012) allow complementizers in embedded gapping, which suggests that clausal coordination gapping is available for these languages. See (3) for a naturally occurring example of the Spanish complementizer *que* 'that' in an embedded gapping structure.

(2) Jim claimed that Alan went to the ballgame and (*that) John to the movies. (Repp 2009: 13)

(3) El[sic] cree que el mundo es su empresa y que los mexicanos sus
he thinks that the world is his company and that the Mexicans his
lacayos.
lackeys
'He thinks that the world is his company and that the Mexicans are his lackeys.' (corpus example from Bonke & Repp 2022: 528)

The source of this cross-linguistic variation is still unknown, which is in part due to the lack of empirical data for many languages. This paper extends the empirical cross-linguistic picture of complementizers in gapping and a related type of verb ellipsis, stripping, by providing such data for Russian. (I will focus on gapping for the time being and introduce stripping in Section 2.) This data in turn sheds light on the aforementioned theoretical question of what syntactic objects are coordinated in gapping, i.e. clauses or sub-clausal constituents.

The object of study for this paper is the Russian complementizer *čto* 'that' in sentences like (4), i.e. the equivalent of English (2) or Spanish (3). The only publication I am aware of that briefly touches upon *čto* in embedded gapping is

Repp (2009), who reports the introspective judgment that the complementizer is ungrammatical, see (4).[1] This paper will show that even though Repp's (2009) judgment may not be outright wrong, quantitative data reveals that the acceptability of *čto* in embedded gapping is more nuanced than this singular judgment suggests and subject to subtle grammatical constraints.

(4) Ja dumaju, čto Petr ezdit v Indiju a (*čto) Pavel v Švejcariju.
I think that Peter is.going to India and that Pavel to Switzerland
'I think that Peter is going to India and that Pavel is going to Switzerland.'
(Repp 2009: 226)

I conducted four acceptability rating experiments to see whether *čto* in gapping is acceptable in general, what possible further constraints on *čto* might be, and whether these constraints are specific to ellipsis. To foreshadow the results, gapping with *čto* is degraded in comparison to the variant without *čto*. This degradation, however, does not imply outright unacceptability. Furthermore, the acceptability of *čto* is subject to constraints that relate to the way in which the conjuncts are connected. If the coordinating conjunction is *a* 'and', *čto* leads to a degradation in ratings. If, on the other hand, the coordinator is *i* 'and', *čto* does not lead to such a degradation. A comparison to non-elliptical sentences shows that this constraint is independent of ellipsis: Non-elliptical clauses show the same degradation with *čto*, and the same sensitivity to the coordinator.

The paper is structured as follows. In section 2, I turn to the existing discussion on the interaction of verb ellipsis and clausal embedding in Russian. Apart from Repp's (2009) singular judgment in (4) above there is (to my knowledge) no treatment of *čto* in embedded gapping in the literature. However, two related structures have received some attention: gapping with the interrogative complementizer *li…li* 'whether…or' in embedded questions, and structures with clausal embedding inside the elliptical conjunct. The discussion of these structures will motivate the hypotheses investigated in the experiments regarding the influence of coordinator choice (*i* vs. *a*) and ellipsis type (gapping vs. stripping)

Section 3 contains the design, results, and discussion of the experiments. In Section 4, I relate the experimental results to the theoretic issues raised above.

[1] See also Bassi & Bondarenko (2021: 595–597), who report that *čto* is ungrammatical in the second of two non-elliptical coordinate embedded clauses (e.g. *…a (*čto) Pavel* ezdit *v Švejcariju* '…and that Peter *is going* to Switzerland', cp. 4). They argue that these structures involve the coordination of matrix clauses rather than embedded clauses, plus ellipsis of the embedding clause in the second conjunct: **…a ~~ja dumaju~~ čto Pavel ezdit v Švejcariju* '…and ~~I think~~ that Pavel is going to Switzerland'. I do not follow this assumption in this paper and instead assume the direct coordination of embedded clauses.

Specifically, I argue that the overall acceptability of *čto* provides evidence for clausal coordination gapping in Russian. As for the sensitivity of ratings to the coordinator, I argue that the different semantic relations between conjuncts that determine coordinator choice (parallelism for *i*, contrast for *a*) interact with the function of *čto* and thus impact acceptability. Section 5 concludes.

2 Clausal embedding and verb ellipsis in Russian

As mentioned in Section 1, with the exception of a brief discussion in Repp (2009) the complementizer *čto* 'that' has played no role in the theoretical literature on Russian gapping. This lack of attention to *čto* is unexpected given its role in the structural question in gapping, i.e. the question of whether the elliptical conjunct is a clause or a sub-clausal constituent. Under the standard assumption that complementizers like *čto* are heads of clauses (i.e. CPs), the elliptical conjunct should, all else being equal, allow the presence of *čto* if it is a clause, and disallow *čto* if it is a sub-clausal constituent.

However, investigating complementizers other than *čto*, as well as scrutinizing structural environments involving clausal embedding more generally are by no means new approaches to the structure of gapping in Russian. The literature discusses two phenomena in this regard: gapping in embedded questions with the interrogative complementizer *li…li* 'whether…or', and gapping in which embedding occurs within the second (i.e. elliptical) conjunct. Looking at these two structures will lead to predictions as to the general acceptability of *čto* in embedded gapping, and to hypotheses as to further constraints on *čto*.

First, Kalinin (2020) discusses gapping in coordinated embedded questions as in (5). The crucial property of (5) is that the elliptical conjunct hosts the element *li*, which Kalinin and some of the syntactic literature analyze as a complementizer (King 1994, Schwabe 2004, Agafonova 2013). If *li* is indeed a complementizer, (5) provides straightforward evidence that Russian gapping allows for clausal coordination, since *li* is in the usual complementizer position as the head of CP. This predicts that *čto* should be equally acceptable in embedded gapping, since *čto*, like *li*, is a complementizer.

(5) Ja ne znaju, myši li zašuršat na čerdake, krysy li v podvale.
I not know mice whether rustle on attic rats or in basement
'I don't know whether mice rustle in the attic or rats in the basement.'
(Kalinin 2020: 7)

However, there is some debate as to the syntactic status of *li*. Korotkova (2023) assumes that *li* is not a complementizer but a quantifier particle, in order to

account for its distribution outside embedded questions (see also Rudnitskaya 2000). I have nothing to contribute to this question; but for my purposes, this controversy on the status of *li* casts doubt on whether *li* should be employed as a diagnostic for syntactic structure. Instead, an uncontroversial complementizer like *čto* provides a more appropriate diagnostic for clausehood.

The second structure that relates gapping to clausal embedding involves the embedding of the elliptical constituent within the second conjunct, to the exclusion of the clause in the first conjunct. This structure is illustrated in (6) for English, where the elliptical constituent *that Jones rice* is embedded under the verb *thought*. The resulting sentence is ungrammatical. For the purposes of this paper, I will refer to this structure as SINGLE CONJUNCT EMBEDDED GAPPING (SCEG). This is to keep it apart from the structure I'm primarily interested in where both conjuncts are jointly embedded, which I will continue to call embedded gapping.

(6) * Smith ate sushi and everyone thought that Jones rice. (Johnson 2018: 602)

In the following, I will devote some discussion to SCEG, even though this structure is not the primary object of this paper. However, as will become clear in the discussion, there is ample reason to scrutinize SCEG in some detail: It is structurally similar to embedded gapping, but unlike embedded gapping, its relevance to the structural question was noticed early on in gapping research (e.g. Ross 1968, 1970, Sag 1977, Hankamer 1979) and it has received continuous attention in the literature since then. The discussion of the existing literature on Russian SCEG will show that introspective data on this construction is inconsistent across publications and that the construction seems to be constrained by several properties of the clause. The discussion of these properties, in turn, will make it possible to derive hypotheses as to constraints governing *čto* in embedded gapping, which will form the basis of the experiments in Section 3.

The structural similarity between embedded gapping and SCEG lies in the identical "building blocks" that make up the two structures, albeit in different configurations: clausal coordination, verb ellipsis, and clausal subordination with a declarative complementizer (English *that*, Russian *čto*). It may therefore shed light on similar theoretic issues such as the syntactic status of the elliptical conjunct. In fact, SCEG has been used frequently as a diagnostic for syntactic structure in gapping, most prominently in the influential work by Johnson (2004 et seq). Simplifying somewhat, Johnson argues that the ungrammaticality of (6) indicates that (English) gapping involves the coordination of sub-clausal constituents (specifically *v*Ps), which rules out the sentence in (6) since the second conjunct contains a full clause (i.e. the embedding clause *everyone thought that* …).

However, sentences like (6) drastically improve in acceptability when the elliptical constituent does not feature the complementizer (Weir 2014, Johnson 2018, Bîlbîie et al. 2023). To illustrate, compare (6) above to (7). While perhaps not fully acceptable, the complementizerless variant (7) is noticeably more acceptable than its version with *that* in (6) above. The ungrammaticality of SCEG with *that* then may be captured more accurately by a constraint on the structure of the elliptical constituent itself, rather than by a constraint on coordination. Specifically, ungrammaticality seems to be triggered by the presence of the complementizer in the elliptical constituent. Notice that this means that SCEG is constrained in an identical way that embedded gapping is constrained: In both structures, the presence of the complementizer leads to ungrammaticality, which reinforces the tight link between these two structures.

(7) ? Smith ate sushi and everyone thought Jones rice.

The tight link between SCEG and embedded gapping seems to be cross-linguistically robust. German, Dutch and French pattern like English in categorically disallowing complementizers in both structures (Bonke 2024). But even in languages that do allow complementizers in gapping we find similar constraints in both structures: in Spanish, the same types of embedding verbs constrain the acceptability of SCEG (Bîlbîie & de la Fuente 2019) and the complementizer *que* 'that' in embedded gapping (Bonke & Repp 2022). This cross-linguistic pattern, together with the general structural similarity of SCEG and embedded gapping discussed above, gives rise to the hypothesis that in Russian, constraints on SCEG may constrain embedded gapping, too. Against this background, let us turn to the question of whether SCEG in Russian is subject to any such constraints. The existing discussion on Russian SCEG in the literature features the examples in (8-10).

(8) * Maša budet čitat' knigu, a Lena dumala, čto Ivan gazetu.
Masha will read book and Lena thought that Ivan newspaper
'Masha will be reading a book and Lena thought that Ivan will be reading a newspaper.' (Grebenyova 2012: 69)

(9) * Vasja poedet v Moskvu, i ja dumaju, čto Petja v Peterburg.
Vasja will.go to Moscow and I think that Petja to St. Petersburg
'Vasja will go to Moscow and I think that Pete will go to St. Petersburg.' (Kazenin 2010: 88, Bailyn & Bondarenko 2018: 1010)

(10) Vasja p'jot samogon i mne kažetsja što[sic] Oleg vodku.
Vasja drinks moonshine and to.me seems that Oleg vodka
'Vasja drinks moonshine and it seems to me that Oleg drinks vodka.'
(Erschler 2018: 5, 65)

Notice the disagreement on acceptability: (8) and (9) are judged to be unacceptable, while Erschler (2018: 64, fn. 29) considers his example (10) acceptable in colloquial speech. Erschler (2018: 64, fn. 29) acknowledges this disagreement in acceptability judgments but does not further discuss it. The empirical base of Russian SCEG thus does not seem straightforward, and further research is required on potential factors influencing the acceptability of SCEG. Based on (8-10), one such potential factor might be the choice of the coordinating conjunction.

Russian has two coordinating conjunctions, *i* and *a*, which both roughly correspond to English *and*. The semantic and pragmatic differences between *i* and *a* have long been the subject of discussions, see e.g. Mendoza (1996), Jasinskaja & Zeevat (2008, 2009) and references therein. I will set aside the empirical and theoretical details of *i* vs. *a*, and for the purposes of this paper adopt the following reasonably well functioning generalisation: The coordinator is *i* when the two conjuncts are in a parallel (Mendoza 1996), i.e. non-contrastive relation to each other. For the specific sentence type discussed in this paper, this means that the two clauses have identical TPs, while the subjects differ. The coordinator is *a* when the conjuncts are in a contrastive relation (Tauscher & Kirschbaum 1970: 408). This means that in addition to different TPs, the two conjuncts also contain different subjects. In gapping, the conjuncts are usually contrastive in this sense (see e.g. Kuno 1976, Winkler 2005, 2006, Repp 2009). As a result, *a* is the default coordinator in gapping (Agafonova 2013), although *i* is also possible in certain restricted contexts (Herrmann 1984, 1985).[2] Generally, coordinator selection seems to be subject to nuance rather than a categorical rule, see the illustrating examples in (11) and (12) further below.

Returning to the SCEG examples in (8-10), notice that the coordinator varies: In (8) the coordinator is *a*, in (9) and (10) it is *i*. This difference should be interpreted with caution, given that two of the examples are judged to be unacceptable. It is nevertheless striking that (9) and the acceptable (10) contain *i*, even though the TPs in the first conjuncts contrast with the elliptical TPs, which means the coordinator should be *a*. Without the embedding clause, the sentences in (8-10) are only fully acceptable with *a*; compare for instance the non-embedded (11) to its embedded equivalent (9) above. However, coordinator selection seems to be a

[2]This preference for *a* shows in frequency: In the AGRR19 corpus (Ponomareva et al. 2019), 62% of gapping sentences contain coordinating *a*. In only 3% of sentences the coordinator is *i*.

soft constraint, since the version of (11) with *i* is not outright unacceptable (Bonke 2024).

(11) Vasja poedet v Moskvu, {a / ?i } Petja v Peterburg.
Vasja will.go to Moscow and and Petja to St. Petersburg
'Vasja will go to Moscow and Pete to St. Petersburg.'

These divergent judgments from the literature suggest that the selection of the coordinator might interact with the embeddability of gapping. Let us hypothesize on the basis of the acceptable example (10) that only *i* licenses SCEG. This assumption straightforwardly explains the judgments in (8) and (10), because the coordinator is either the one that does not license embedding (*a* in 8), or the one that does (*i* in 10). The problematic example is (9) because it is judged unacceptable even though it has *i*. Here, the (soft) coordinator constraint might be at play: For Kazenin (2010) and Bailyn & Bondarenko (2018), the coordinator *i* in a context where *a* is preferred might cause a degradation in acceptability that is strong enough to indicate outright unacceptability for their example (9). For Erschler (2018), there may also be a degradation, which however does not constitute outright unacceptability. I take Erschler's (2018) remark that SCEG is limited to informal registers as tentative evidence of this degradation.

This interaction of embedding and coordinator choice also shows in environments that require the coordinator *i*. This is the case when, for instance, the elliptical conjunct contains the polarity particle *tože* 'too', as in (12). The coordinator is *i* because the TP in the first conjunct *will go to St. Petersburg* is identical to the elided TP in the second conjunct.

(12) Vika poedet v Peterburg, {?a / i } Maša tože.
Vika will.go to St. Petersburg and and Masha too
'Vika will go to St. Petersburg and Masha, too.'

In such an environment, the elliptical constituent seems to be embeddable without issue, see (13). This provides more reason to hypothesize that coordinator choice is connected to embeddability; specifically, that only *i* licenses the embedding of elliptical constituents.

(13) Vanja skazal, čto Vika poedet v Peterburg, i ja dumaju, čto
Vanja said that Vika will.go to St. Petersburg and I think that
Maša tože.
Masha too
'Vanja said that Vika will go to St. Petersburg, and I think that Masha will go to St. Petersburg too.' (Bailyn & Bondarenko 2018: 1004)

There is, however, a possible confound: The difference between sentences like (11) and (12) does not only lie in the choice of the coordinator and the presence of *tože*. The ellipsis in (12) and (13) targets a larger constituent than just the finite verb (i.e. the TP *will go to St. Petersburg*), and is thus typically treated not as gapping, but as a distinct ellipsis type, namely stripping. In stripping, all but one clausal constituent (e.g. the subject *Masha* in 12) plus optionally a polarity particle like *tože* are deleted. I will refer to a stripping constituent that is embedded within its own conjunct as SINGLE CONJUNCT EMBEDDED STRIPPING (SCES).

Bailyn & Bondarenko (2018) argue that it is stripping that is embeddable – as opposed to gapping, and irrespective of the coordinator. They do not discuss the issue of coordinator choice explicitly, but provide the example in (14) of SCES with *a*, which is unexpected under the hypothesis that only *i* licenses SCEG/SCES.

(14) Vanja skazal, čto Vika tebja pozvala guljat', a ja dumal, čto menja.
Vanja said that Vika you invited stroll but I thought that me
'Vanja said that Vika invited you to go on a walk but I thought that Vika invited me to go for a walk.' (Bailyn & Bondarenko 2018: 1004)

The question of what grammatical property is crucial in licensing SCEG/SCES (coordinator vs. ellipsis type) adds to the empirical puzzle on SCEG and SCES. I won't attempt to solve this issue in this paper, since my primary interest lies with embedded gapping. The point of the discussion of SCEG/SCES has been to generate hypotheses on *čto* in embedded gapping, which I can test experimentally.

As mentioned above, I assume that SCEG is structurally related to embedded gapping with *čto* and I will make the same assumption for SCES and embedded stripping. The observations in this section therefore serve as a basis for investigating *čto* in embedded gapping and stripping. Specifically, they allow me to hypothesize that *čto* is constrained by the coordinating conjunction (*i* vs. *a*), as the discussion of examples (8-10) and the facts on SCES with *tože* suggest. Alternatively, the constraint might not be the coordinator itself, but the type of ellipsis (gapping vs. stripping), as argued for SCEG and SCES by Bailyn & Bondarenko (2018). I explore these hypotheses in Section 3.

A more general point to be taken from this section concerns methodology. The discussion of the SCEG examples from the literature in (8-10) show disagreement on basic acceptability judgments. Whatever the source of this disagreement, it shows the necessity of a more systematic approach that has the power to carve out subtle acceptability patterns of *čto* in embedded gapping/stripping. I pursue this in Section 3 by means of acceptability judgment experiments.

Before turning to the experiments, let me briefly touch upon the possibility of using corpus data to investigate embedded gapping/stripping. I found no instances of embedded gapping with *čto* in the AGRR19 corpus, a corpus that contains approximately 8000 sentences with gapping in Russian (Ponomareva et al. 2019). I did however find 202 instances of embedded gapping without *čto*, like the one in (15), which suggests that the complementizerless variant is the unmarked one.

(15) Kto-to pišet, čto moe lico napominaet testo, a volosy — paklju.
some write that my face resembles dough and hair tow
'Some say that my face looks like dough and my hair like tow.' [AGRR19]

The absence of embedded gapping with *čto* in the AGRR19 corpus does not indicate that *čto* in gapping is ungrammatical. There are in fact instances of *čto* in embedded verb ellipsis in other corpora, see (16) and (17) from the ruTenTen11 corpus. Both examples contain *tože* and the coordinator *i*, but they represent distinct ellipsis types: In (16), the elliptical conjunct contains more than one clausal constituent (subject and object), and only the finite verb is elided, which makes it gapping. In (17) everything in the clause is elided except for one constituent (the subject) and the polarity particle *tože*, which makes it stripping. These two examples suggest that it is indeed the coordinator *i* that makes *čto* acceptable, independently of the type of ellipsis.

(16) ja načala dumat' čto ljublju ee i čto ona menja tože
I began think that love her and that she me too
'I began to think that I loved her and that she loved me too.' [ruTenTen11]

(17) Ja […] počuvstvoval, čto p'janeju sverh vsjakoj mery i čto vse
I felt that get.drunk above any measure and that all
ostal'nnye – tože...
others too
'I felt that I was getting drunk beyond all measure and that everyone else was getting drunk beyond all measure, too.' [ruTenTen11]

However, (16) and (17) are only two examples of *čto* in embedded gapping and stripping, respectively, so their significance to the question whether the coordinator or the ellipsis type determines acceptability is limited. Also, my informants have indicated that (17) is somewhat marked and perhaps not fully acceptable. This uncertainty, just like the discrepancy in acceptability ratings for SCEG in (8-10), highlights the need for a systematic, quantitative collection of acceptability data.

3 Experiments

The overarching goal of this section is to find out whether Russian generally allows complementizers in embedded gapping and/or stripping. In addition, the discussion of SCEG and SCES in Section 2 has resulted in two more detailed hypotheses as to how *čto* might be constrained; one concerning the coordinating conjunction, see Hypothesis 1 in the list below, and one concerning the type of ellipsis, see Hypothesis 2. Whatever the acceptability pattern of *čto* in the context of verb ellipsis, the corresponding non-elliptical sentences should be examined as well. This is to see whether the patterns of *čto* are particular to contexts of verb ellipsis, or general properties of coordinated embedded clauses, see Hypothesis 3.

Hypotheses

1. Coordinator: *čto* is acceptable with *i* and unacceptable with *a*.
2. Ellipsis type: *čto* is acceptable with stripping and unacceptable with gapping.
3. Ellipsis itself: *čto* patterns differently in elliptical vs. non-elliptical clauses.[3]

To test these three hypotheses, I conducted the four acceptability judgment experiments in the list below. All experiments compare sentences with *čto* in the second conjunct to sentences without *čto* in the second conjunct. Experiments 1 and 2 additionally contrast gapping with the standard/unmarked coordinator *a* (Herrmann 1984, 1985, Agafonova 2013) and stripping with *tože* and the preferred coordinator *i*. The two sentence types of Experiments 1 and 2 thus differ in two dimensions: Ellipsis type (gapping vs. stripping) and coordinator (*a* vs. *i*).

Experiments

1. Gapping with *a* vs. *tože*-stripping with *i*.
2. Gapping with *a* vs. *tože*-stripping with *i* (= replication of Exp. 1).

[3]The reason to assume that elliptical and non-elliptical sentences pattern differently (rather than uniformly) w.r.t. complementizers stems from cross-linguistic comparison: In English and German, complementizers are only ungrammatical in gapping and stripping, but fully grammatical in their non-elliptical counterparts. In Spanish, subtle constraints related to the type of embedding verb on the complementizer only appear in gapping, not in its non-elliptical equivalent (Bonke & Repp 2022).

3. Non-elliptical equivalents of Exp. 1.

4. Stripping with *net* 'not' vs. equivalent non-elliptical sentences with *ne* 'not' (both with connecting *a*).

Experiments 1 and 2 differ in the types of embedding verbs. In Experiment 1, the embedding verbs are verbs of saying and thinking. In Experiment 2, the embedding verbs are emotive verbs. The reason for making a distinction between these two verb types is Bonke & Repp's (2022) finding that in Spanish, the verb type constrains the acceptability of the complementizer in embedded gapping. Since I find no comparable constraint in Russian, I will not further discuss the different verb types. Instead, I will treat Experiment 2 as a replication of Experiment 1. To see whether the patterns found in Experiments 1 and 2 are particular to ellipsis, Experiment 3 contains the non-elliptical equivalents of Experiment 1. If the patterns from Experiments 1 and 2 are indeed particular to ellipsis, it is to be expected that the sentences in Experiment 3 show different patterns (whatever these may be).

Experiment 4 disentangles the two dimensions of the sentences in Experiments 1 and 2 by testing stripping with the negative polarity particle *net* 'not', which requires the coordinator *a*, see (18).[4]

(18) Maša govorit, čto koška est žarenuju kuricu a sobaka – net.
Masha says that cat eats fried chicken and dog not
'Masha says that the cat eats fried chicken and the dog doesn't.'

If the ellipsis type is the crucial factor, it is to be expected that *net*-stripping patterns like *tože*-stripping from Experiments 1 and 2. If instead the coordinator is crucial, *net*-stripping is expected to pattern like gapping from Experiments 1 and 2, because both take the coordinator *a*.

The overall design was identical for all four experiments (2×2 factorial Latin square); the differences were only in the experimental materials. I will illustrate the experimental design in detail only for Experiment 1 and limit the descriptions of Experiments 2 to 4 to differences in the materials. The materials from Experiments 1 and 2 were largely translation equivalents of the Spanish and German experiments in Bonke & Repp (2022) and Bonke (2024).

[4]This type of ellipsis with *net* is sometimes treated as "polarity ellipsis" rather than stripping (Kazenin 2006, Bailyn & Bondarenko 2018). However, there are striking similarities between stripping and "polarity ellipsis", which are both conceptual (*tože*, like *net*, indicates polarity) and structural (see Bailyn & Bondarenko 2018: 1006). I therefore subsume ellipsis with *net* and *tože* under the same ellipsis type, stripping.

3.1 Experiment 1: Gapping with *a* vs. *tože*-stripping with *i*

The two factors of the 2×2 design in Experiment 1 were complementizer (*čto* vs. Ø) and ellipsis type (gapping vs. *tože*-stripping). In the gapping conditions, the coordinator was *a*; in the stripping conditions, the coordinator was *i*. See (19) and (20) for a sample item in the gapping and stripping conditions, respectively.

(19) *Sample Item Experiment 1 – Gapping conditions*
Maša govorit, čto koška est žarenuju kuricu a {čto / Ø} sobaka – kotlety.
Masha says that cat eats fried chicken and that dog cutlets
'Masha says that the cat eats fried chicken and the dog cutlets.'

(20) *Sample Item Experiment 1* – tože-*Stripping conditions*
Maša govorit, čto koška est žarenuju kuricu i {čto / Ø} sobaka – tože.
Masha says that cat eats fried chicken and that dog too
'Masha says that the cat eats fried chicken and the dog, too.'

Notice that the condition stripping without *čto* is potentially ambiguous between the intended embedded reading (*the dog eats fried chicken, too*), and an (implausible) matrix reading (*the dog says that…too*). The sentences were constructed so that there was a greater parallelism between the embedded subjects (rather than the matrix subject and one of the embedded subjects), thus favouring the intended interpretation.

The experimental materials consisted of 24 embedded clauses and twelve embedding verbs. The embedding verbs were verbs of saying and thinking. Each embedding verb combined with two of the embedded clauses for a total of 24 sentences. With the four conditions, this made a total of 96 items. The items were distributed across four lists, so that each list contained each embedded clause once, each embedding verb twice, and each condition six times (= Latin square).

To get a baseline for acceptability and unacceptability, each list contained 36 filler items that were either acceptable (n = 18), or grammatically or semantically unacceptable (n = 18). Each participant judged all items on one of the four lists, i.e. 60 items. All items were preceded by a context (1-2 sentences) that aimed to prepare the lexical content of the item, as well as further encourage the embedded interpretation of the elliptical clause in the ambiguous condition.

The questionnaire was hosted online via SoSci Survey (Leiner 2024). Participants judged the naturalness of the items on a continuous scale (thus providing the possibility of intermediate ratings), whose endpoints were labelled *očen' neestestvenno* 'very unnatural' and *očen' estestvenno* 'very natural'. The judgments were coded as integers from 0 to 100.

After judging each item, participants answered a control question on the next page of the questionnaire. This was to filter out judgments for items which had received the incorrect interpretation (especially in the ambiguous condition). All control questions were polar questions with the answer options *yes* and *no*. For the ambiguous condition in (20) the control question was *Does Masha say that the dog eats fried chicken?*. Items that were answered incorrectly (e.g. in this case with *no*) did not enter the analysis.

I used Prolific (prolific.com) to recruit native speakers of Russian who grew up monolingual. In total, 40 participants completed the questionnaire. Those participants who made no statistically significant difference between acceptable and unacceptable filler items (as determined by a one-sided *t*-test per participant) were excluded from the analysis. This procedure applied to two participants; the data of the remaining 38 participants entered the analysis.[5]

The results are given in Table 1 and Figure 1.[6] To calculate the means in the results tables, I used R (R Core Team 2023) and the function `SummarySEwithin()` from the `Rmisc`-package (Hope 2022), which removes inter-subject variability. The abbreviations in the results tables are: N = number of observations, sd = standard deviation, se = standard error of the mean, ci = 95% confidence interval. Plots were generated with `ggplot2` (Wickham 2016).

Table 1: Results of Experiment 1.

Ellipsis type	Complementizer	N	Mean rating	sd	se	ci
Gapping	*čto*	212	52.5	32.0	2.2	4.3
Gapping	Ø	221	79.9	25.6	1.7	3.4
tože-Stripping	*čto*	223	53.7	24.5	1.6	3.2
tože-Stripping	Ø	227	58.8	27.7	1.8	3.6

The only condition that received a relatively high mean rating was gapping without *čto*. The other three conditions (gapping with *čto*, and stripping with and

[5]Participants who answered more than 20% of control questions for the filler items incorrectly were likewise excluded from the analysis. In Experiment 1, this criterion did not lead to the exclusion of any participants.

[6]All experimental materials, data, and analyses for the four experiments presented in this paper are available on OSF: https://osf.io/g84m7/.

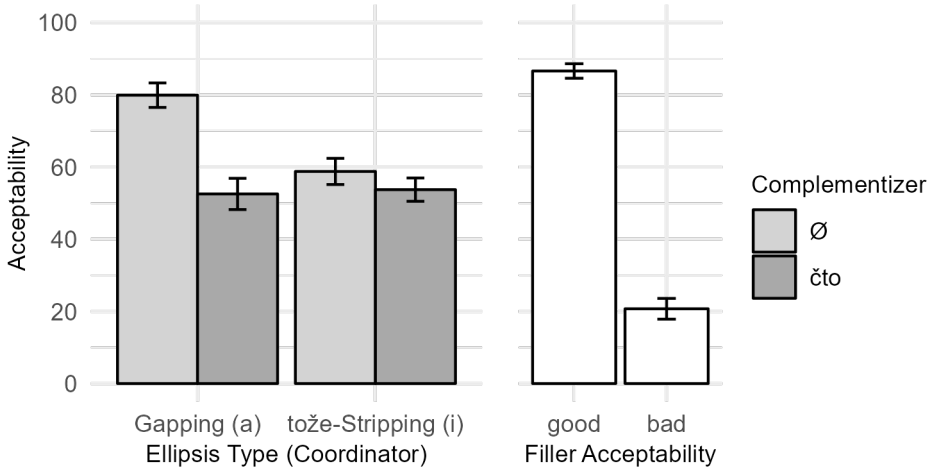

Figure 1: Results for experimental conditions and filler items, Experiment 1. Bars indicate mean values; error bars indicate 95% confidence intervals

without *čto*) were noticeably degraded. However, comparing the experimental conditions to the controls in Figure 1 revealed a noticeable difference between these three conditions and the unacceptable control items.

I used the `afex`-package for `R` (Singmann et al. 2022) to fit a linear mixed effects model with the two experimental factors and the interaction as the fixed effects. The factors were sum-to-zero contrast coded to facilitate the interpretation of the interactions. The random effects structure was the maximal possible structure for items and participants (random intercepts and random slopes for both factors and for the interaction). The model indicated significant main effects for ellipsis type ($b = -4.9$, $SE = 1.3$, $t = -3.7$, $p < 0.001$) and the complementizer ($b = -8.1$, $SE = 1.6$, $t = -5.2$, $p < 0.001$). The interaction effect was significant as well ($b = 5.5$, $SE = 1.2$, $t = 4.6$, $p < 0.001$).

To resolve the interaction, I fitted a model each to the gapping and stripping subsets of the data. The effect of the complementizer was only significant within the gapping set ($b = -13.6$, $SE = 2.3$, $t = -6.0$, $p < 0.001$), but not within the stripping set ($b = -2.6$, $SE = 1.6$, $t = -1.6$, $p = 0.12$).

3.2 Experiment 2: Replication of Experiment 1

Experiment 2 contained different embedding verbs from Experiment 1, but was otherwise identical in design. The embedding verbs in Experiment 2 were emo-

tive verbs, such as *kritikuet* 'criticizes' in (21) and (22). The type of embedding verb will turn out to be of no consequence to the acceptability of *čto*, which is why I will not discuss this aspect of the design in detail. Some of the contexts from Experiment 1 were adjusted to accommodate the meaning of the new embedding verbs.

(21) *Sample Item Experiment 2 – Gapping conditions*
Maša kritikuet, čto koška est žarenuju kuricu a {čto / Ø} sobaka –
Masha criticizes that cat eats fried chicken and that dog
kotlety.
cutlets
'Masha criticizes that the cat eats fried chicken and the dog cutlets.'

(22) *Sample Item Experiment 2* – tože-*Stripping conditions*
Maša kritikuet, čto koška est žarenuju kuricu i {čto / Ø} sobaka –
Masha criticizes that cat eats fried chicken and that dog
tože.
too
'Masha criticizes that the cat eats fried chicken and the dog, too.'

42 participants who did not take part in Experiment 1 completed the questionnaire. All participants made a statistically significant difference between acceptable and unacceptable control items. One participant answered more than 60% of the control questions to the filler items incorrectly and therefore did not enter the analysis.

The results are given in Table 2 and Figure 2. Gapping without *čto* is the experimental condition that received the highest ratings. The other three conditions received degraded ratings, which were not so low as to indicate outright unacceptability. Participants made a noticeable distinction between the degraded conditions and the unacceptable controls. The results thus parallel the results of Experiment 1.

Table 2: Results of Experiment 2.

Ellipsis type	Complementizer	N	Mean Rating	sd	se	ci
Gapping	*čto*	237	52.1	28.0	1.8	3.6
Gapping	Ø	242	69.3	31.6	2.0	4.0
tože-Stripping	*čto*	242	52.3	23.8	1.5	3.0
tože-Stripping	Ø	240	52.5	24.2	1.6	3.1

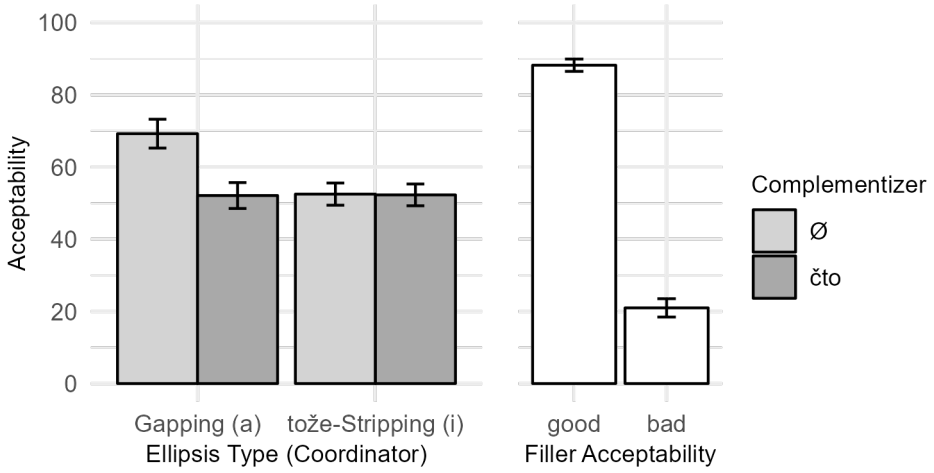

Figure 2: Results for experimental conditions and filler items, Experiment 2. Bars indicate mean values; error bars indicate 95% confidence intervals

The statistical model was identical in structure to the one used in Experiment 1. It indicated significant main effects for ellipsis type ($b = -4.2$, $SE = 1.4$, $t = -3.0$, $p < 0.01$) and the complementizer ($b = -4.4$, $SE = 1.1$, $t = -4.2$, $p < 0.001$). The interaction effect was also significant ($b = 4.2$, $SE = 0.8$, $t = 5.0$, $p < 0.001$). I fitted a model each to the gapping and stripping subsets of the data to resolve the interaction. The effect of the complementizer was only significant within the gapping set ($b = -8.6$, $SE = 1.8$, $t = -4.8$, $p < 0.001$), and not within the stripping set ($b = -0.2$, $SE = 0.9$, $t = -0.2$, $p = 0.83$). In terms of statistical significance, Experiment 2 thus replicates Experiment 1.

The parallel results and replicated significance values in Experiments 1 and 2 indicate that the different embedding verbs in the two experiments (verbs of saying and thinking vs. emotives) do not seem to interact with the acceptability of *čto* in embedded gapping and stripping. This result is different from what Bonke & Repp (2022) find for Spanish, where the acceptability of the complementizer is sensitive to the type of the embedding verb.

3.3 Experiment 3: Non-elliptical equivalents of Experiment 1

Experiment 3 tested the non-elliptical counterparts to the items of Experiment 1. This means that the items equivalent to gapping in Experiment 3 contained the finite verb in the second embedded clause, e.g. *est* 'eats' in (23), and the items

equivalent to stripping contained the TP in the second embedded conjunct, e.g. *est žarenuju kuricu* 'eats fried chicken' in (24).

(23) *Sample Item Experiment 3 – Gapping equivalent conditions*
Maša govorit, čto koška est žarenuju kuricu a {čto / Ø} sobaka
Masha says that cat eats fried chicken and that dog
est kotlety.
eats cutlets
'Masha says that the cat eats fried chicken and that the dog eats cutlets.'

(24) *Sample Item Experiment 3* – tože-*Stripping equivalent conditions*
Maša govorit, čto koška est žarenuju kuricu i {čto / Ø} sobaka
Masha says that cat eats fried chicken and that dog
tože est žarenuju kuricu.
too eats fried chicken
'Masha says that the cat eats fried chicken and that the dog eats fried chicken, too.'

39 participants who did not participate in Experiments 1 or 2 completed the questionnaire. Two participants made no statistically significant difference between acceptable and unacceptable control items. The data of 37 participants thus entered the analysis.

The results are given in Table 3 and Figure 3. The gapping equivalent sentences without *čto* were the highest rated condition. The other three conditions received intermediate mean ratings, which were notably higher than that of the unacceptable controls. The experimental conditions for the non-elliptical items thus pattern like those in the elliptical items of Experiments 1 and 2.

Table 3: Results of Experiment 3.

Ellipsis type equiv.	Complementizer	N	Mean rating	sd	se	ci
Gapping	*čto*	217	46.8	27.1	1.8	3.6
Gapping	Ø	213	73.4	32.5	2.2	4.4
tože-Stripping	*čto*	220	42.1	19.4	1.3	2.6
tože-Stripping	Ø	219	40.2	20.3	1.4	2.7

The statistical model was identical in structure to that of Experiments 1 and 2. It indicated significant main effects for ellipsis type equivalent ($b = -9.5$, $SE = 1.5$, $t = -6.5$, $p < 0.001$) and the complementizer ($b = -6.2$, $SE = 1.4$, $t = -4.5$, $p < 0.001$). The interaction effect was also significant ($b = 7.1$, $SE = 1.1$, $t = 6.5$, $p < 0.001$). I fitted seperate models to the gapping equivalent and stripping equivalent

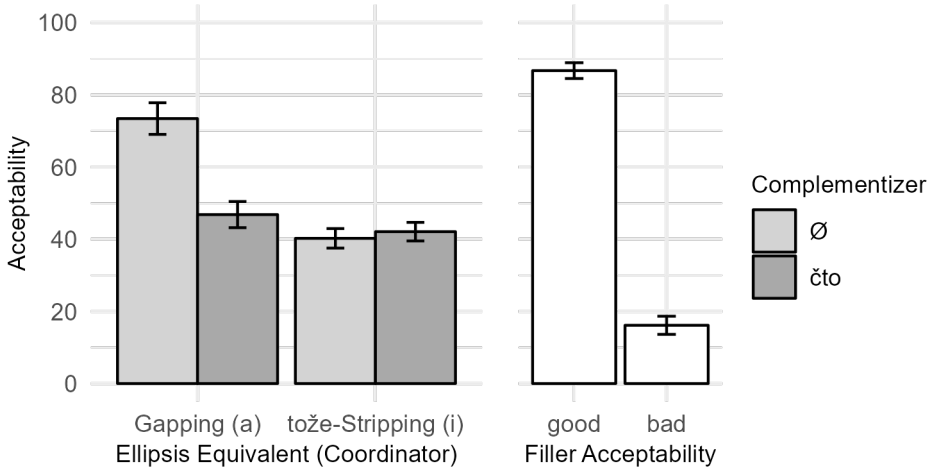

Figure 3: Results for experimental conditions and filler items, Experiment 3. Bars indicate mean values; error bars indicate 95% confidence intervals

subsets of the data to resolve the interaction. The effect of the complementizer was only significant within the gapping set ($b = -13.3$, $SE = 2.3$, $t = -5.8$, $p < 0.001$), and not within the stripping set ($b = 1.0$, $SE = 0.7$, $t = 1.3$, $p = 0.19$). In terms of statistical significance, Experiment 3 thus replicates Experiments 1 and 2.

3.4 Experiment 4: Stripping with *net* 'not' vs. non-elliptical sentences with *ne* 'not'

Experiment 4 tested stripping with the negative polarity particle *net* 'not' against the corresponding non-elliptical sentences with *ne* 'not', see (25) and (26), respectively. The items for the stripping conditions were the same as for the stripping items with *tože* from Experiment 1, except that *net* replaced *tože* and *a* replaced *i*. The non-elliptical items were formed back to full sentences from the elliptical items. The embedding verbs were the verbs of saying and thinking from Experiment 1.

(25) *Sample item Experiment 4* – net-*Stripping conditions*
Maša govorit, čto koška est žarenuju kuricu a {čto / Ø} sobaka – net.
Masha says that cat eats fried chicken and that dog not
'Masha says that the cat eats fried chicken and (that) the dog doesn't.'

(26) *Sample item Experiment 4 – Non-elliptical conditions*
Maša govorit, čto koška est žarenuju kuricu a {čto / Ø} sobaka ne est žarenuju kuricu.
Masha says that cat eats fried chicken and that dog not eats fried chicken
'Masha says that the cat eats fried chicken and (that) the dog doesn't eat fried chicken.'

41 participants completed the questionnaire. 28 of these participants had also each participated in one of Experiments 1 to 3 (13, 8, and 7 participants, respectively). There was an eight month gap between Experiment 4 and the last of the preceding experiments, which makes it unlikely that participants remembered the details of their previous experiment. Experiment 4 contained no control questions. All participants made a statistically significant difference between acceptable and unacceptable controls. The data of all 41 participants thus entered the analysis.

The results are given in Table 4 and Figure 4. Overall, the elliptical conditions were rated higher than the non-elliptical conditions, and the conditions without *čto* were rated higher than the conditions with *čto*. All conditions except for elliptical sentences without *čto* received intermediate ratings, with non-elliptical sentences with *čto* having a visibly lower mean rating than the other two conditions. However, all conditions still received notably higher ratings than the unacceptable controls.

Table 4: Results of Experiment 4.

Sentence type	Complementizer	N	Mean rating	sd	se	ci
net-Stripping	*čto*	246	52.9	23.6	1.5	3.0
net-Stripping	Ø	246	76.4	25.6	1.6	3.2
Non-ellipsis	*čto*	246	39.9	20.3	1.3	2.5
Non-ellipsis	Ø	246	54.3	21.1	1.3	2.7

The statistical model was identical in structure to those of Experiments 1 to 3. It returned a significant main effects for sentence type ($b = 8.8$, $SE = 1.3$, $t = 6.9$,

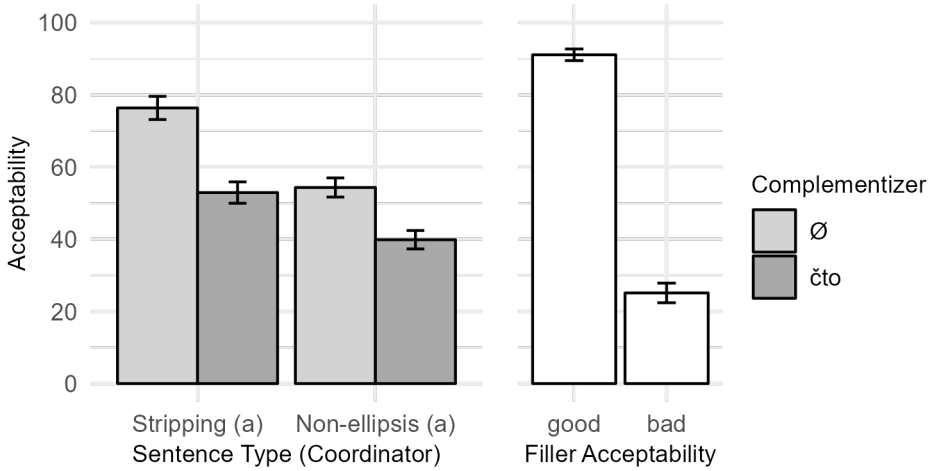

Figure 4: Results for experimental conditions and filler items, Experiment 4. Bars indicate mean values; error bars indicate 95% confidence intervals.

$p < 0.001$) and the complementizer ($b = -9.5$, $SE = 1.4$, $t = -7.0$, $p < 0.001$). The interaction effect was significant, too ($b = -2.2$, $SE = 0.9$, $t = -2.6$, $p = 0.013$). To resolve the interaction, I split the data into a stripping and non-ellipsis set, and fit a linear model each. The effect of *čto* was significant for both stripping ($b = -11.7$, $SE = 0.9$, $t = -12.8$, $p < 0.001$) and non-elliptical sentences ($b = -7.2$, $SE = 1.5$, $t = -4.9$, $p < 0.001$).

3.5 Discussion

The general question of this paper has been whether Russian allows the complementizer *čto* in the context of two types of verb ellipsis, gapping and stripping. The experimental results in the preceding section show nuanced patterns: In the three experiments containing elliptical sentences (Exps. 1, 2 and 4), the relevant conditions show that *čto* is degraded, but not outright unacceptable. Participants make a clear distinction between *čto* in elliptical sentences and outright unacceptable controls in these three experiments. Based on these acceptability patterns, I conclude that *čto* is in principle grammatical in gapping and stripping, and that the degradation of *čto* we observe is due to independent constraints. I will return to the exact nature of these independent constraints in Section 4.

The comparison of the *čto*-conditions to their *čto*-less counterparts in Experiments 1 and 2 suggests that the source of the degradation of *čto* is different for

gapping and *tože*-stripping. Gapping without *čto* receives high ratings, which means that the degradation with *čto* is likely caused by the presence of the complementizer itself. This is in contrast with *tože*-stripping, where the version without *čto* is just as degraded as the version with *čto*. Under the uncontroversial assumption that *tože*-stripping is grammatical without *čto*, the experimental data does not provide any evidence that it is not just as grammatical with *čto*. The degradation is thus not due to the complementizer, but is instead a general property of this type of sentence.

This raises the question as to what causes this difference between gapping and *tože*-stripping. As mentioned in Section 2, gapping and *tože*-stripping differ in two dimensions: ellipsis type (gapping vs. stripping) and coordinator (*a* vs. i). Both of these dimensions could in principle be responsible for the difference as to *čto*, see Hypotheses 1 and 2 above.

Experiment 4 disentangles these two dimensions by testing stripping with the negative polarity particle *net* 'not', which takes coordinating *a* (like gapping). The results indicate that this type of sentence behaves like gapping: Acceptability ratings are degraded with *čto* in comparison to the *čto*-less equivalents. This suggests that it is the coordinator *a* which influences the acceptability of *čto*. The ellipsis type, on the other hand, is unlikely to be responsible for the behaviour of *čto*, because stripping with *tože* (and *i*) shows different patterns than stripping with *net* (and *a*).

Experiment 3 tested non-elliptical sentences that were otherwise structurally equivalent to those in Experiments 1 and 2. This was to see whether the patterns observed in Experiments 1 and 2 are specific to ellipsis, see Hypothesis 3 above. If this hypothesis were true, we would expect the acceptability patterns of *čto* in non-elliptical sentences to be generally different from those patterns in the corresponding elliptical sentences. Specifically, one may hypothesize that in non-elliptical coordinate clauses, the version with *čto* is just as acceptable as the version without *čto*, as we find in other languages like German and Spanish (Bonke & Repp 2022, Bonke 2024, see also footnote 3 above).

However, the results of Experiment 3 show that the acceptability patterns of *čto* are identical in non-elliptical sentences and elliptical sentences. We find the same degradation for *čto* if they are coordinated with *a*, and the same indifference to *čto* if they are coordinated with *i*. The results of Experiment 4, which alongside the *neg*-stripping sentences contained their non-elliptical equivalents, point in the same direction: The complementizer is degraded in both the elliptical and the non-elliptical condition. These findings suggest that the *čto*-patterns are indeed not specific to ellipsis, but (all else being equal) surface in any type of coordinate clause structure.

However, in Experiment 4 the *čto*-effect was larger for elliptical than for non-elliptical sentences; the relevant interaction was statistically significant. I argue that this interaction effect likely does not reflect a genuinely grammatical property. Instead, the smaller effect in non-elliptical sentences may have arisen due to the fact that the non-elliptical sentences received degraded ratings even without *čto*. If the *čto*-effect had been similar in size to that of the elliptical clauses (which were hardly degraded without *čto*), the ratings for non-elliptical sentences with *čto* would have been indistinguishable from the non-acceptable controls. I may now speculate that since *net*-stripping with *čto* is not outright unacceptable, the *čto*-effect was smaller in order to avoid ratings entering the unacceptable range.

The comparison of the results of Experiments 1 and 3, and of the elliptical and non-elliptical conditions in Experiment 4 furthermore reveals that elliptical sentences receive higher ratings across the board than their non-elliptical counterparts. I will discuss this with the other observations in the following section.

4 Theoretical discussion

The four main observations from the experiments in Section 3 are:

1. The complementizer *čto* is grammatical both in embedded gapping and in embedded stripping.
2. With the coordinator *a*, *čto* is degraded in acceptability. With the coordinator *i*, there is no such degradation for *čto*.
3. Observations 1 and 2 are independent of ellipsis.
4. Sentences with *tože* (which invariably come with connecting *i*) are degraded, independently of *čto* and independently of ellipsis.

Since *čto* heads clauses, Observation 1 provides evidence that clausal coordination, i.e. the coordination of CPs, is available in Russian gapping and stripping. However, gapping and stripping are just as, or even more acceptable without *čto* (in the case of coordinating *i* and *a*, respectively). A straightforward way to account for this general optionality of *čto* is to assume that alongside CP coordination, gapping and stripping may also occur under coordination of sub-clausal constituents (e.g. TP or Johnson's 2004 *v*P). Under this assumption, coordinate structures involving gapping and stripping are structurally ambiguous, which has been proposed for independent reasons. Kalinin (2020) proposes clausal alongside sub-clausal coordination to account for the variable behaviour

of operator scope in matrix gapping (see also Potter et al. 2017 for English). This leads to the question as to how the presence of *čto* and the relevant scopal relations interact in embedded gapping. I leave this question for future research.

A more immediate question in light of the experimental data pertains to Observation 2: Why does *čto* lead to a degradation in acceptability with the coordinator *a*, but not with the coordinator *i*? From a structural perspective, this observation means that with *a*, the coordination of CPs is dispreferred to sub-clausal coordination. With *i*, however, coordination may proceed equally easily at clausal and at sub-clausal level.[7] I propose that the reason for this difference between *i* and *a* does not lie in the coordinators themselves, but rather with the pragmatic relation between the conjuncts indicated by the coordinators. As discussed in Section 2, I assume that the difference between the two coordinators (broadly speaking) is that *a* indicates a contrastive relation between the conjuncts and *i* indicates a parallel, non-contrastive relation.

I propose that the effect of *čto* then follows from the way the main point of an utterance is reflected by syntactic structure. The basic intuition behind the proposal is that when *čto* surfaces in both conjuncts and thus indicates coordinate CPs, each of the CPs is connected to the selecting predicate individually. As a consequence, the interpretation of the coordination proceeds individually for the proposition within each conjunct, without taking into consideration the relation that the contents of the propositions may have to each other. In sub-clausal coordination, however, the embedded propositions are in a closer structural relation to each other as they are not separated by a clause boundary. This closer structural relation between the propositions, I argue, favours the interpretation of a closer pragmatic relation like contrast.

Let us consider the four possible structure-coordinator pairings (clausal vs. sub-clausal coordination × *i* vs. *a*) in turn. For ease of exposition, I will begin the discussion with clausal coordination with *i*, proceed with sub-clausal coordination with *a*, and then turn to the remaining two cases. For the first case, consider the example in (27). This example is a schematic version of one of the

[7] An anonymous reviewer asks whether CP-coordination is degraded with *a* in general, suggesting that the degradation of *čto* with *a* we observe in the experiments is due to a general syntactic constraint on coordination. However, CP-coordination with *a* is clearly possible in at least some non-embedded contexts, such as coordinate questions with fronted *wh*-pronouns such as *kto* 'who' in (i).

(i) Kto moet posudu segondnja a kto zavtra?
who washes dishes today and who tomorrow
'Who washes the dishes today and who washes the dishes tomorrow?'

experimental items from Section 3, with the difference that the two embedded propositions are replaced by variables (*p*, *q*). Let us assume that these propositions are in the appropriate parallel, non-contrastive relation called for by the coordinating *i*. This example involves clausal coordination, as indicated by *čto* in the second conjunct.

(27) *Clausal coordination with* i
Maša govorit, čto *p* i čto *q*.
Masha says that *p* and that *q*
'Masha says that *p* and that *q*.'

I suggest that in a sentence like (27), the main point of the utterance is to present a set of propositions {*p, q*} that are in a relation with the matrix subject (*Masha*) described by the embedding predicate (*says*), see (28). In the main point of the utterance, both propositions thus have an equal, and more importantly independent status. This means that the computation of the main point does not take into account any aspect concerning the pragmatic relation between the two propositions, which in the case of coordinating *i* is a parallel relation. Of course, despite not forming part of the main point, this aspect of meaning is still present in (27) as what I will refer to as a "non-main point", see (29).

(28) Main point of (27)
The propositions *p* and *q* are such that Masha says them.

(29) Non-main point of (27)
Masha says that there is a parallel relation between the content of *p* and the content of *q*.

How do the pragmatic assumptions concerning the main and non-main points of the utterance bear on syntactic structure? The general idea here is that the pragmatic independence of the conjuncts is reflected by a structural independence. Specifically, I assume the main point of the utterance revolving around the pragmatic independence of *p* and *q* is reflected in the selectional properties of the embedding predicate, i.e. *govorit* 'says' in (27) above. It seems possible that from the way meaning is constructed, the predicate independently selects for two distinct CPs, each containing a different proposition, see (30). However, given that the predicate is lexically specified to select for a single complement CP, the syntactic derivation cannot proceed with two distinct object CPs. A three-way merger of *govorit*, the CP containing *p* and the CP containing *q* is not possible. To avoid crashing the derivation, we may assume that this problem finds a straightforward

solution in the coordination of the two CPs, which structurally unifies them as one coordinate structure, see (31). The resultant single, coordinate CP may then fill the single object position the predicate has without causing any issue to the derivation. Importantly, within this reasoning the process of coordinating the individual CPs only serves to avoid the derivational problem of the three-way merger. It does not affect the independent interpretation of the two conjuncts.

(30) First step of the syntactic derivation in (27)
govorit selects for two complement CPs
[$_{CP}$ *čto* p], [$_{CP}$ *čto* q]

(31) Second step of the syntactic derivation in (27)
Coordination unifies the two CPs to facilitate merger with *govorit*
[$_{CP}$ [$_{CP}$ *čto* p] *i* [$_{CP}$ *čto* q]]

Let us contrast this structure, clausal coordination with *i*, with sub-clausal coordination with *a*. Assume that in the schematic example in (32), the two embedded propositions *p* and *q* are in the appropriate contrastive relation to each other to be connected with *a*.

(32) *Sub-clausal coordination with* a
Maša govorit, čto *p* a *q*.
Masha says that *p* and *q*
'Masha says that *p* and *q*.'

In this case, the interpretation of the coordinate structure does not centre around the enumeration of individual, independent propositions, but on the contrastive relation that holds between the content of those propositions. This means that the contrastive relation between the propositions forms the main point of the utterance, see (33). This is in marked difference to the example with *i* in (27) above, in which the main point was the fact that both propositions individually are such that they are in a saying-relation with the matrix subject. This relation still holds in (32), but it is not the main point of the utterance, see (34). Thus, what is the non-main point for clausal coordination with *i* (the relation between the propositions) is elevated to main point for sub-clausal coordination with *a*, while the main point of clausal coordination with *i* (listing individual propositions as they relate to the predicate) is consequently relegated to non-main point in sub-clausal coordination with *a*.

(33) Main point of (32)
Masha says that there is a contrastive relation between the content of *p* and the content of *q*.

(34) Non-main point of (32)
The propositions *p* and *q* are such that Masha says them.

From a structural point of view, I propose that the main point being the relation between the propositions is reflected in the syntax by a more immediate coordination of the syntactic constituents containing the two propositions. The contrastive relation between the two propositions is formed first by means of the direct coordination of syntactic objects that contain them (i.e. without the intervening clause border you get in CP coordination, see above). Then in a second step, the complementizer attaches forming a CP, which then as a whole is selected by the embedding predicate. I provide a sketch of the resulting complement clause of the embedding predicate in (35), which involves the sub-clausal coordination of syntactic objects containing the propositions. I will remain non-committal to the exact identity of these syntactic objects, representing them as XPs, since the exact identity is not relevant for this paper. As mentioned above near the beginning of this section, possible candidates for the identity of these XPs include TP and *v*P.

(35) Complement CP of *govorit* with coordinated sub-clausal XPs in (32) above
[$_{CP}$ *čto* [$_{XP}$ [$_{XP}$ p] *a* [$_{XP}$ q]]]

Summing up so far, this analysis models clausal coordination with *i* and sub-clausal coordination with *a* in a parallel fashion: The respective syntactic structures harmonize in the way they build meaning from the meaning of the individual embedded propositions with the main points of the respective utterances. What remains to be explained are the patterns we find for the two remaining structures: sub-clausal coordination with *i* as in (36), and clausal coordination with *a* as in (37). Recall that in the experiments, *i* was judged just as acceptable in sub-clausal coordination as in clausal coordination; *a* on the other hand showed a degradation in acceptability in clausal coordination compared to sub-clausal coordination.

(36) *Sub-clausal coordination with* i
Maša govorit, čto *p* i *q*.
Masha says that *p* and *q*
'Masha says that *p* and *q*.'

(37) *Clausal coordination with* a
Maša govorit, čto *p* a čto *q*.
Masha says that *p* and that *q*
'Masha says that *p* and that *q*.'

I assume that the main and non-main points of the utterances remain constant for the two coordinators across different syntactic structures, see (38) and (39). Under this assumption and following the argumentation above, the respective syntactic structures now do not reflect the main points of the respective utterances, but instead the non-main points.

(38) a. Main point of (36) (sub-clausal coordination with *i*)
The propositions *p* and *q* are such that Masha says them.

b. Non-main point of (36) (sub-clausal coordination with *i*)
Masha says that there is a parallel relation between the content of *p* and the content of *q*.

(39) a. Main point of (37) (clausal coordination with *a*)
Masha says that there is a contrastive relation between the content of *p* and the content of *q*.

b. Non-main point of (37) (clausal coordination with *a*)
The propositions *p* and *q* are such that Masha says them.

In the case of clausal coordination with *a* in (37) above, the resulting syntax-pragmatics mismatch straightforwardly accounts for the degradation in acceptability we observed in the experiments. However, the fact that the non-main point (39b) forms part of the meaning of the utterance, coupled with the fact that the main point (39a) arguably can still be recovered from the clausal coordination structure, explains why acceptability ratings in the experiments were generally not so low as to indicate outright unacceptability for *a* in clausal coordination.

For sub-clausal coordination with *i*, the experimental results indicate no degradation in acceptability compared to clausal coordination, even though there is similar syntax-pragmatics mismatch as for *a*. The reason for this may lie in the way the main and non-main points relate to each other. Notice that for the structures with *i*, there is a tight logical connection between the main and the non-main points, see (38) above. Specifically, the non-main point implies the main point: If both propositions are pragmatically parallel, they must be such that both of them are in a relation to the matrix subject described by the embedding verb (i.e. a saying-relation) in equal measure. For *a*, the relation between main and non-main point is not as tight as for *i*: In (39), there is not the same implicative relation between the main point (39a) and the non-main point (39b). Masha saying that there is a relevant contrastive relation between *p* and *q* (i.e., the main point) does not imply that Masha is saying *p* and *q* (i.e. the non-main point), and vice versa.

We may now assume that the tight connection between the main and non-main points in sub-clausal coordination with *i* results in a straightforward recovery of the main point, even if the syntactic structure favours the non-main point. In other words, due to the fact that the main and non-main points are pragmatically so similar in sub-clausal coordination with *i*, the syntax-pragmatics mismatch may be negligible for this structure. The negligible mismatch then results in the absence of a degradation in acceptability ratings for this structure.

This proposal works entirely on the interaction of co- and subordination and is thus not specific to ellipsis: It has been irrelevant to the discussion whether the second conjunct in the schematic examples above (i.e. the conjuncts containing *q*) involved ellipsis or not. This independence of ellipsis is an advantage given that we find the same *čto*-patterns in non-elliptical sentences. The comparison of elliptical vs. non-elliptical sentences leads us to Observation 3 above: Despite the overall lower ratings for non-elliptical sentences, the sensitivity as to *čto* is near identical in elliptical and non-elliptical sentences. This finding suggests that in Russian, the derivation of the clause does not interact with verb ellipsis. Instead, ellipsis seems to strictly follow clause building. This lack of an interaction is perhaps not surprising, and is in fact a (tacit) assumption in much of the ellipsis literature. However, from a comparative perspective this finding is relevant because it means that Russian is not only different from languages that outright disallow complementizers in embedded gapping and stripping (e.g. English, German), but also from languages that show an ellipsis-specific behaviour of complementizers (e.g. Spanish, see Section 1 above). I will leave the discussion on what this means for the typology of verb ellipsis and clausal complementation to future research, but see Bonke (2024) for some details.

The last observation from the experiments (Observation 4 above) concerns the overall degradation of sentences with *tože*. This degradation is likely due to a general redundancy effect: Independently of clausal embedding, the sentences with *tože* have a complex (i.e., biclausal) syntactic structure, see (40) for the non-embedded version of the elliptical sample items from Experiments 1 and 2. This structure is redundant in the sense that it may easily be replaced by a semantically equivalent but syntactically simpler monoclausal structure that only involves the coordination of the subjects, see (41).[8] The choice of the unnecessarily complex structure in (40) where a simpler structure like (41) is available might explain the overall degradation in ratings for sentences with *tože*. Since this explanation is not particular to ellipsis, it predicts that non-elliptical sentences with *tože* are subject to the same redundancy effect and thus show a similar degrada-

[8] In Russian, the coordination of nouns such as in (41) obligatorily takes the coordinator *i*.

tion in acceptability. This prediction is congruent with the results of Experiment 3, which indicated that non-elliptical sentences with *tože* are indeed degraded.

(40) Koška est žarenuju kuricu i sobaka tože.
cat eats fried chicken and dog too
'The cat eats fried chicken and the dog, too.'

(41) Koška i sobaka edjat žarenuju kuricu.
cat and dog eat fried chicken
'The cat and the dog eat fried chicken.'

The same redundancy effect might explain the overall lower ratings for non-elliptical clauses compared to their elliptical equivalents (Exps. 1 vs. 3, and Exp. 4). The repetition of the non-elided verbs in gapping and VPs in stripping in the second conjunct result in sentences that lack an optimal information density, which is typical for structures in which ellipsis could happen but doesn't (Levy & Jaeger 2007). Psycholinguistic research suggests that gapping is preferred in structures which license it, i.e. coordinated clauses exhibiting structural parallelism (Kaan et al. 2004, Kim et al. 2020).[9] Participants therefore may have judged the non-elliptical sentences as less acceptable than their elliptical counterparts.

On a final note, I would like to briefly bring back the discussion to SCEG and SCES. As a reminder of this structure, I reproduce Grebenyova's (2012) SCEG example (8) from Section 2 above in (42).

(42) * Maša budet čitat' knigu, a Lena dumala, čto Ivan gazetu.
Masha will read book and Lena thought that Ivan newspaper
'Masha will be reading a book and Lena thought that Ivan will be reading a newspaper.' (Grebenyova 2012: 69)

Recall that SCEG and SCES played a major part in the derivation of the hypotheses on embedded gapping and stripping that I tested in Section 3. The reason to examine SCEG and SCES as the starting-off point for the exploration of embedded gapping and stripping was the observation that these constructions are structurally similar, and thus possibly subject to similar constraints (see the discussion in Section 2 above for details). Recall also that the discussion of SCEG and SCES revealed an empirically difficult situation, in which contributions in the literature disagree on the grammaticality of SCEG.

[9] Structural parallelism should not be confused with the pragmatic parallelism my analysis relies on. All sentences in my experiments contained structurally parallel coordinations, a subset of which (i.e. those with coordinating *i*) were pragmatically parallel in the sense outlined above.

In keeping with the assumption that SCEG/SCES and embedded gapping/stripping are structurally similar and thus sensitive to the same constraints, the experimental results of Section 3 make predictions as to the grammatical status of SCEG and SCES. In a nutshell, SCEG and SCES should behave like embedded gapping and stripping: parallel, non-contrastive coordination with *i* should be largely acceptable, while contrastive coordination with *a* should be degraded but not outright ungrammatical. Judgments indicating the ungrammaticality of SCEG, like Grebenyova's (2012) in (42) above, or Kazenin's (2010) and Bailyn & Bondarenko's (2018) in Section 2, would then be more likely attributable to a noticeable degradation of SCEG instead of genuine ungrammaticality.

These predictions are backed up by the theoretical discussion in the present section. Since SCEG and SCES obligatorily involve clausal coordination, the structure invariably favours a pragmatically parallel interpretation of the conjuncts. Consequently, SCEG/SCES structures in which conjuncts are indeed parallel, and thus coordinated by *i* should be fully acceptable. Contrastive coordination with *a* on the other hand is predicted to be degraded since clausal coordination does not favour the interpretation of contrast between propositions. Thus, contrastive coordination with *a* should be degraded from the point of view of the analysis presented in this section, just as it should be degraded from the point of view of the experimental results in Section 3.

Further, since my experiments find no categorical difference between elliptical and non-elliptical structures and my theoretic analysis is not sensitive to this distinction either, we expect the same pattern to surface in SCEG/SCES and their non-elliptical counterparts. Non-elliptical clausal coordination with clausal subordination in the second conjunct should thus also be acceptable in parallel coordination with *i*, but degraded for contrastive coordination with *a*. Interestingly, however, there is no prediction as to a general degradation for sentences with *tože*, since in a structure that involves clausal embedding within the second conjunct, there is no equivalent simpler (i.e. monoclausal) structure involving coordinate subjects to compete with as I demonstrate for stripping with *tože* in (40) and (41) above.

In Bonke (2024), I present some preliminary results from a small-scale study on SCES with *tože* and SCEG that are overall congruent with these predictions as far as elliptical clauses are concerned. However, a more in-depth investigation of the finer details on SCEG and SCES must be left to future research. The hypotheses derived in this paper may serve as a basis for such research.

5 Conclusion

In this paper, I have provided experimental evidence that the complementizer *čto* 'that' is grammatical in Russian embedded gapping and stripping. Examples (43) and (44) reproduce the gapping and stripping items of Experiment 1 in examples (19) and (20), respectively. From a structural perspective, the finding that such sentences are grammatical with *čto* in the elliptical conjunct provides evidence that the elliptical conjuncts in Russian gapping and stripping can be clauses.

(43) Maša govorit, čto koška est žarenuju kuricu a čto sobaka kotlety.
Masha says that cat eats fried chicken and that dog cutlets
'Masha says that the cat eats fried chicken and the dog cutlets.'

(44) Maša govorit, čto koška est žarenuju kuricu i čto sobaka tože.
Masha says that cat eats fried chicken and that dog too
'Masha says that the cat eats fried chicken and the dog, too.'

The experiments show that the complementizer receives degraded acceptability ratings when the coordinating conjunction is *a* 'and', as opposed to *i* 'and'. The ellipsis type (gapping vs. stripping) and whether the sentence is elliptic at all do not seem to influence the acceptability of *čto*. To account for these patterns, I assume that conjunct size is variable for gapping and stripping, i.e. both clausal and sub-clausal coordination are available (which is independently motivated, Kalinin 2020). The degradation of *čto* with *a* then follows from the assumption that propositions that are individually connected to the embedding predicate (as in clausal coordination, indicated by the presence of the complementizer *čto*) clash with the contrastive pragmatics of *a*, which leads to a degradation in acceptability, but not outright unacceptability. I propose an analysis building on the syntax-pragmatics interface regarding the matching of syntactic structure with the main point of the utterance.

Abbreviations

SCEG single conjunct embedded gapping
SCES single conjunct embedded stripping

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