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The at-issue status of appositive relative clauses: evidence for a discourse-based approach

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The at-issue status of appositive relative
clauses: evidence for a discourse-based
approach

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Abstract

The thesis contributes to the existing literature on at-issueness by focusing on the at-issue status of appositive relative clauses (ARCs). It assumes a discourse-based model developed by Jasinskaja (2016), which accounts for at-issue status by making use of general discourse mechanisms such as the Right Frontier Constraint (Polanyi, 1988). This approach yields many interesting predictions, one of which is that final discourse-structurally coordinate ARCs should express more at-issue behavior than final discourse-structurally subordinate ARCs. This prediction was tested in the current study. The experiment involved the manipulation of coordinating and subordinating rhetorical relations between the main clause and the final ARC, and it relied on the direct rejection test as a diagnostic for being at issue. The obtained results indicated that coordinate ARCs were targeted by rejections more frequently than subordinate ARCs, thus suggesting that the discourse-based approach is on the right track in describing the at-issue status of ARCs.

Keywords: (Not-)At-Issue Status, Appositive Relative Clause, Continuative Relative Clause, Direct Rejection, Discourse Structure, Rhetorical Relations

Table of Contents

1 Introduction.....	1
2 Theoretical Background.....	4
2.1 AnderBois et al. (2010, 2015).....	5
2.2 Koev (2013) and Syrett and Koev (2015).....	7
2.3 Jasinskaja (2016).....	10
2.3.1 Rhetorical Relations in Discourse Structure.....	10
2.3.2 Discourse-Structurally Subordinate ARCs.....	12
2.3.3 Discourse-Structurally Coordinate ARCs.....	13
3 Present Study.....	18
4 Method.....	20
4.1 Participants.....	20
4.2 Stimuli.....	20
4.3 Procedure.....	24
4 Results.....	26
5 Discussion.....	30
5.1 Coordinate ARCs.....	31
5.2 Subordinate ARCs.....	32
5.3 Summary.....	36
6 Conclusion.....	38
References.....	41
Appendix.....	45

1 Introduction

Utterances in discourse convey contents which may differ in whether they express the speaker's main point or not. At-issue content expresses the speaker's central message. On the other hand, content which is secondary or backgrounded with respect to the main point of the utterance is standardly labeled as not at issue. Meaning types which are typically considered to belong to this class are presuppositions, conventional and conversational implicatures. Not-at-issue content is characterized by its ability to project, i.e. to survive embedding under operators such as negation or modals (Simons et al., 2010). Consider the two examples below. In (1) the expression *John's twins* triggers the presupposition that *John has twins*. In (2) the sentence from (1) is negated, but the presupposition that *John has twins* is still present due to the ability of presuppositions to remain constant under negation, that is to project. Another defining property of not-at-issue content is that it cannot be targeted by direct rejections (Tonhauser, 2012). For example, the rejection in (1a) felicitously targets the proposition that *Mary likes John's twins*, which is at issue. On the other hand, (1b) targets the presupposition in (1) and is clearly infelicitous.

- (1) Mary likes John's twins.
 - a. That's not true. She hates them.
 - b. # That's not true. He doesn't have any children.
- (2) Mary doesn't like John's twins.

A great number of expressions that convey some kind of not-at-issue content have been identified. In order to be able to describe the structure and characteristics

of not-at-issue content in general what is necessary is systematic knowledge and understanding of the properties of particular instances of those expressions. By learning about their properties we would be able to categorize them properly and know the ways in which they interact with at-issue content to contribute to the overall meaning of linguistic utterances.

The current thesis focuses on one particular class of expressions typically labeled as not at issue - appositive relative clauses (henceforth ARCs). Recently, there has been a renewed interest in ARCs thanks to Potts (2005), who places them together with other appositives within the group of conventional implicatures. While ARCs are mainly considered to be not at issue, AnderBois et al. (2010) make an observation that there is a difference between sentence-medial and sentence-final ARCs with respect to at-issue status. They point out that final ARCs, unlike medial ARCs, can be directly rejected, which suggests that final ARCs *can* be at issue. This observation was further studied by Koev (2013) and Syrett and Koev (2015; henceforth S&K), who provide a syntactic account for the at-issue status of ARCs. An important contribution of S&K's study is empirical evidence that final ARCs are sometimes at issue.

The results of S&K's experiment can be reinterpreted within a discourse-based approach developed by Jasinskaja (2016). In her paper, she relies on the theories of processing hierarchical discourse units in interpreting the notion of at-issueness and reconstructing the observation that medial ARCs are not at issue, while final ARCs can be. This account of at-issueness makes many predictions beyond the syntactic approach of S&K. One of those predictions is that discourse-structurally subordinate ARCs, as in the underlined part of (3), and discourse-structurally

coordinate ARCs (i.e. continuative relative clauses), as in the underlined part of (4), should receive different at-issue interpretations in an experimental setting.

- (3) The managers assigned the project to Mark, who was the only experienced engineer at the meeting. (subordinate ARC)
- (4) The managers assigned the project to Mark, who finalized it three months later. (coordinate ARC)

The prediction above, which was not empirically tested by Jasinskaja, represents the basis of the present study. An experiment was conducted with the purpose of investigating the at-issue status of ARCs, by placing them against main clauses as the potential targets of direct rejections. The experiment manipulated rhetorical relations between main clauses and ARCs. The results of the study represent novel empirical evidence with regard to the role of rhetorical relations in the interpretation of at-issue status. Therefore, this study contributes to the literature on at-issueness by describing the information status and providing empirical support for the discourse-based account of ARCs.

The thesis is structured as follows: Section 2 presents the theoretical background on different approaches to the at-issue status of ARCs. Section 3 highlights the predictions which follow from the discourse-based approach to at-issueness and provides motivation for the experimental work conducted in this study. Section 4 elaborates on the experiment and provides details on the participants, stimuli and procedure. The results obtained through the statistical analysis of the data are presented in section 5. In section 6 the results are discussed in relation to the initial predictions of the study. The concluding section gives an overview of the research and provides some ideas for further investigation of the phenomenon of at-issueness.

2 Theoretical Background

The at-issue status of ARCs has been a subject of debate, especially in recent literature. The interest in ARCs has been revived mainly due to Potts (2005), who places them in a separate meaning dimension so that they cannot be combined with the main clause content. They are marked as invariably not at issue, since they convey backgrounded content which typically projects. ARCs have been treated as not at issue by many other authors as well (AnderBois et al., 2010, 2015; Chierchia & McConnell-Ginet, 2000; Murray, 2010).

At this point it will be useful to define the notion of at-issueness. As proposed by Simons et al. (2010), the distinction between at-issue and not-at-issue content is based on the ability to address the discourse topic, i.e. the Question Under Discussion (henceforth QUD). Following Roberts (1996), Simons et al. define the QUD as a semantic question which corresponds to the current discourse topic. The QUD may be an actual question that has been asked or it can be implicit in the discourse. A question remains under discussion until it has been answered or determined to be unanswerable. While at-issue content directly addresses the QUD and expresses the main point of the utterance, not-at-issue content cannot directly address the QUD and it expresses a secondary point.

One of the main properties of at-issue content is the susceptibility to direct rejections. This means that the markers of direct rejections such as '*No...*' or '*That's not true*' can target at-issue content. On the other hand, not-at-issue content cannot

be directly rejected¹. This observation has led to the direct rejection test being standardly applied across a range of subfields and methodologies for diagnosing the (not-)at-issue status of the semantic content of different expressions, including presuppositions (Chierchia & McConnell-Ginet, 2000; Xue & Onea, 2011), epistemic modals (von Stechow & Gillies, 2007; Papafragou, 2006), evidential markers (Faller, 2002; Koev 2011; Murray, 2010), and appositive constructions (AnderBois et al., 2010; Koev, 2013; Syrett & Koev, 2015; Tonhauser, 2012).

Relying on the direct rejection test and other diagnostics for (not-)at-issueness, several authors have tried to describe the at-issue status of ARCs. The following sections elaborate in more detail on the most important approaches.

2.1 AnderBois et al. (2010, 2015)

In their analysis of the at-issue status of ARCs, AnderBois et al. (2010) follow Stalnaker (1978, 1999) and Farkas and Bruce (2010), who see the act of assertion as a proposal made by the speaker to narrow down the context set (henceforth CS). Stalnaker defines the CS as the set of possible worlds representing the shared assumptions among speech participants. Making an assertion, thus, involves reducing the CS to the set of worlds in which the assertion holds. Building upon this view, AnderBois et al. argue that whether an assertion is at issue or not depends on how it enters the CS. A main clause represents a proposal to update the context, which can be accepted or rejected by the conversation participants, which makes the main clause at issue. On the other hand, an ARC represents an update which is directly

¹ While not-at-issue content cannot be targeted by direct rejections, it can be rejected indirectly. The famous mechanism of indirect rejection used in diagnosing not-at-issue content such as presuppositions is the ‘*Hey, wait a minute!*’ test (von Stechow, 2004; Shanon, 1976). ‘*Hey, wait a minute...*’ is a felicitous response which challenges not-at-issue content, but is an infelicitous response to an assertion.

imposed on the CS and cannot be negotiated, which means that ARCs cannot be directly challenged or denied. Thus, they are predicted to be not at issue.

However, further in their paper, AnderBois et al. make an observation that sentence-final ARCs can sometimes acquire at-issue status, while this is never the case with sentence-medial ARCs. To illustrate this distinction they apply the direct rejection test. In (5) below, the response felicitously targets the final ARC, which means that the ARC is at issue. On the other hand, a direct rejection can never target a medial ARC, which is illustrated by example (6). Based on examples like these, AnderBois et al. suggest that the at-issue status of ARCs may depend on the order in which asserted information is introduced and interpreted in discourse.

(5) A: He took care of his husband, who had prostate cancer.

B: No, he had lung cancer.

(6) A: His husband, who had prostate cancer, was being treated at the Dominican Hospital.

B: # No, he had lung cancer.

AnderBois et al. further observe that there is a difference between medial and final ARCs when it comes to the interpretation of the temporal adverb *then*. They point out that in a final ARC as the one in (7), *then* receives a sequential interpretation, i.e. it indicates that the event in the relative clause took time after the event in the main clause. On the other hand, in a medial ARC such as the one in (8) *then* receives a cotemporal interpretation and can be paraphrased as '*at that time*'.

(7) Every springtime they migrate out of the sea and swim upriver to reproduce by giving birth to live young, who *then* spend an undetermined amount of time living on land as what we call zucchini slugs.

(8) In fact, while she was filming *Fresh Prince*, her mother, who *then* worked as a librarian, would call her with Black history stories.

In an attempt to account for this difference within their framework, AnderBois et al. (2015) propose that final ARCs, unlike medial ARCs, can introduce proposals, forcing an immediate acceptance of the main clause proposal, which means that final ARCs can be at issue. Assuming that only proposals can move the topic time forward, only final ARCs would allow the sequential interpretation of *then*. However, they do not give an answer as to why final, but not medial ARCs are ambiguous between direct update imposition and an update proposal.

AnderBois et al. further suggest an alternative approach to account for the difference between medial and final ARCs, which is closely related to the approach advocated by Jasinskaja (2016), which will be reviewed in Section 2.3. At the very end of their paper, they propose that this difference might be captured by the way ARCs enter into rhetorical relations in a discourse structure:

[The idea] is that final appositives have a wider range of interpretations because they can enter into matrix-level discourse relations in a discourse structure (e.g., Asher & Lascarides 2003). Medial appositives would be subject to more constraints on their interpretation because they would be discourse subordinate to the clause they are syntactically attached to, while final appositives can but need not be discourse subordinate in the same way. (AnderBois et al., 2015, p. 133)

What is suggested here is that rhetorical relations influence the interpretation of the at-issue status of ARCs. Yet, AnderBois et al. do not elaborate further on this suggestion and they leave it to a more detailed investigation of final ARCs.

2.2 Koev (2013) and Syrett and Koev (2015)

Another approach to the at-issue status of ARCs has recently been proposed by Koev (2013) and discussed and empirically tested by S&K (2015). This approach is partly based on the model developed by AnderBois et al. (2010), modified to account for

the obligatory not-at-issue status of medial ARCs and the possible at-issue status of final ARCs. To explore the properties of appositives related to truth conditions and the information status (i.e. at-issue status) of ARCs, S&K conduct 5 experiments.

An important finding of S&K's study is the confirmation of the observation made by AnderBois et al. that the at-issue status of ARCs depends on their position in a sentence. In Experiment 2, S&K asked the participants to choose between a rejection of the main clause and a rejection of the appositive, as in (9). Since it is assumed that direct rejections can target only at-issue content, it was predicted that the participants would in most cases opt for the rejection of the main clause. While the results showed an overall preference for the rejection of the main clause (73.9%), it was also shown that sentence-final ARCs were more likely to be chosen as targets of rejections (35.5%) than sentence-medial ARCs (21.1%). S&K interpret these results as evidence for the observation that final ARCs can sometimes be at issue.

- (9) A: The symphony hired my friend Sophie, who performed a piece by Mozart.
B1: No, they didn't. (target: main clause)
B2: No, she didn't. (target: appositive)

In order to account for the fact that ARCs can acquire at-issue status, the first important assumption that Koev (2013) and S&K (2015) make is that ARCs are illocutionarily independent of the speech act associated with the main clause. This was already previously proposed by several other authors (Arnold, 2007; McCawley, 1988; Peterson, 2004; Potts, 2005). An argument in favor of this assumption is that the speech act expressed by the ARC can be different from the one expressed by the main clause. Example (10) taken from McCawley (1988) contains the main clause which is interrogative and performs a question speech act, while the ARC is declarative and performs a statement.

- (10) Has John, who was talking to Mary a minute ago, gone home?

Given that ARCs represent independent speech acts, Koev and S&K assume that in principle both the main clause and the ARC can compete for at-issue status. While AnderBois et al. (2010) argue that main clauses represent proposals to restrict the CS and ARCs represent direct updates which cannot be negotiated, Koev suggests that in fact both the main clause and the ARC introduce update proposals. Whether the main clause or the ARC is at issue after the sentence has been uttered depends on the syntactic structure of the sentence. Namely, medial ARCs are always syntactically attached to their anchor, which is the syntactic head of the phrase to which the ARC is linked, while final ARCs can be attached either to the anchor or to the root node of the sentence. This means that the assertion associated with the medial ARC is accepted before the assertion associated with the main clause is completed. Since it is considered that direct rejections target the assertion which has been performed last, it is clear that they will target the main clause content. Therefore, medial ARCs cannot acquire at-issue status. The at-issue status of final ARCs is explained in the same way when it is attached to the anchor. However, when a final ARC is attached to the root node, then the ARC and the main clause will be attached at the same level, and the assertion of the main clause will be completed before the introduction of the ARC. Since the ARC is asserted last it will represent the most salient content, and therefore it will be targeted by the subsequent rejection, which means that it will be at issue.

It can be concluded that according to Koev and S&K the sensitivity of the at-issue status of ARCs to linear position depends on the syntactic structure of the sentence, which involves the attachment site of ARCs. This approach accounts for the fact that final ARCs can sometimes be targeted by denials, whereas this is never the case with medial ARCs.

2.3 Jasinskaja (2016)

The approach reviewed in the previous section is in contrast with the one presented in AnderBois et al. (2010). As Jasinskaja (2016) puts it, AnderBois et al. claim that at-issueness is hard-wired in the semantics of ARCs. On the other hand, Koev and S&K show that the at-issue status of ARCs depends on their underlying syntactic structure, due to which final ARCs can be at issue after the processing of the speech act of the main clause is completed. Following this line of reasoning in her recent paper, Jasinskaja shows that the results of the empirical study of S&K can be reinterpreted within a general theory of discourse interpretation, thus making predictions that go beyond the framework assumed by S&K. Below are presented the general principles of discourse structure that Jasinskaja assumes in her interpretation of at-issueness as a discourse-based notion.

2.3.1 Rhetorical Relations in Discourse Structure

It is generally acknowledged in literature that discourse units are connected in discourse via rhetorical relations (for an overview of rhetorical relations see Asher, 1993; Asher & Lascarides, 2003; Hallyday & Hasan, 1976; Hobbs, 1979; Jasinskaja & Karagjosova, 2016; Kehler, 2002; Mann & Thompson, 1988; Zeevat, 2011). There are two main types of rhetorical relations: coordinating and subordinating. Jasinskaja elaborates on the importance of this distinction:

The distinction [between coordinating and subordinating rhetorical relations] is crucial for explaining how discourse progresses and which of the previously processed utterances are open for attachment of new discourse material at each point in discourse interpretation. Informally, in coordinating relations (Contrast, Parallel, Narration) the discourse units are on a par and the discourse progresses in a normal left-to-right fashion, whereas subordinating relations (Elaboration, Explanation) lead to hierarchical structures and

discourse embedding, and do not “push the discourse forward”. (Jasinskaja, 2016, p. 6)

Jasinskaja assumes that the way discourse units connect to each other is regulated by the Right Frontier Constraint (Polanyi, 1988; Webber, 1991), which is a constraint on the attachment of new units to an existing discourse structure. The right frontier metaphor is based on the assumption that the discourse structure graph² is constructed from left to right. Subordinating relations extend the vertical dimension of the graph, while coordinating relations extend the structure horizontally. The right frontier of a discourse graph consists of the last (rightmost) processed node and all the nodes to which it is connected via a subordinating relation. Jasinskaja and Karagjosova give the basic generalization of the Right Frontier Constraint:

Right Frontier Constraint: Only the nodes at the right frontier of the discourse graph are accessible for attachment of new discourse material. (Jasinskaja & Karagjosova, 2016, p. 12)

Jasinskaja points out that the Right Frontier Constraint represents a reformulation of a generalization given by Grosz and Sidner (1986), who claim that the processing of discourse requires keeping track of a stack of focus spaces. Focus spaces are associated with discourse units and contain semantic entities (e.g. individuals, propositions, etc.) of those discourse units. Jasinskaja assumes that each discourse unit addresses an issue or a QUD, which also constitutes part of the focus space. Focus spaces (and therefore QUDs) are stacked when a subordinating relation is processed and queued when a coordinating relation is processed. In other words, the QUD of a subordinate unit is pushed on the stack, while at the same time the QUD of a subordinating unit is not removed, but stays underneath the new issue

² Segmented Discourse Representation Theory (Asher & Lascarides, 2003; Lascarides & Asher, 1993) assumes a 2-dimensional notion of a discourse graph built from coordinating and subordinating discourse relations, which is a perspective adopted by Jasinskaja.

while the subordinate unit is processed. When the processing of the subordinate unit is completed, its QUD is popped off the stack, and the QUD of the subordinating unit becomes topmost again. In the case of coordinating units, the QUD of the previously processed unit must be resolved and popped off the stack before the introduction of the next coordinating unit. Once they are off the stack, QUDs cannot be reopened.

2.3.2 Discourse-Structurally Subordinate ARCs

Jasinskaja applies the approach to discourse structure described above to the analysis of the at-issue status of ARCs. She starts her elaboration with the same assumption as Koev and S&K – ARCs represent illocutionary acts independent from the speech act associated with the main clause. She further assumes that each illocutionary act addresses an issue and constitutes a discourse unit, and as such participates in rhetorical relations which connect it with other discourse units. ARCs typically connect with their main clauses through subordinating rhetorical relations. Jasinskaja provides examples of discourse-structurally subordinate ARCs, given in (11) and (12). The rhetorical relation in both examples may be categorized as Elaboration or Background, but in either case it is subordinating.

- (11) ‘All Stars’ has chosen to audition Chloe, who is the girl you met in the gym yesterday.
- (12) Chloe, who is the girl you met in the gym yesterday, has been chosen to audition for ‘All Stars’.

In (11) the ARC is in the final position. Since the rhetorical relation is subordinating, the analysis of this sentence requires a stack memory model. As represented in Figure 1 below, the QUD associated with the ARC (*Who is Chloe?*) will be pushed on the stack on top of the main clause QUD (*What happened?*), which means that the content of the ARC may be at issue. However, it is still possible to

make the main clause QUD topmost, by simply popping off the stack the question related to the ARC. This means that at the end of the sentence either the main clause or the final ARC will be open for the attachment of new discourse material. Therefore, the account predicts that final ARCs can be at issue or not.

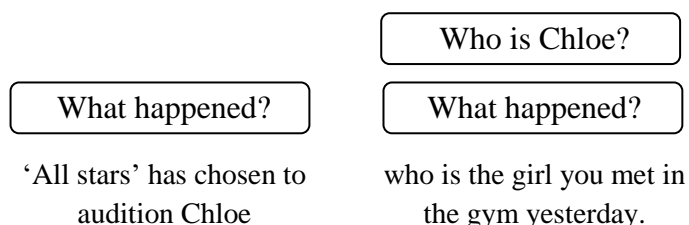


Figure 1. QUD stack update for a sentence-final ARC

On the other hand, in (12) the ARC is in the medial position. Since the ARC is followed by the rest of the main clause, it means that the QUD associated with the ARC (*Who is Chloe?*) must be popped off the stack, before processing the rest of the main clause, as seen in Figure 2. Therefore, by the end of the sentence, only the main clause QUD (*What happened?*) will remain on stack and the content related to the main clause will be at issue, while the ARC cannot be made at issue anymore. These predictions regarding final and medial ARCs are both in line with the results presented in S&K (2015).

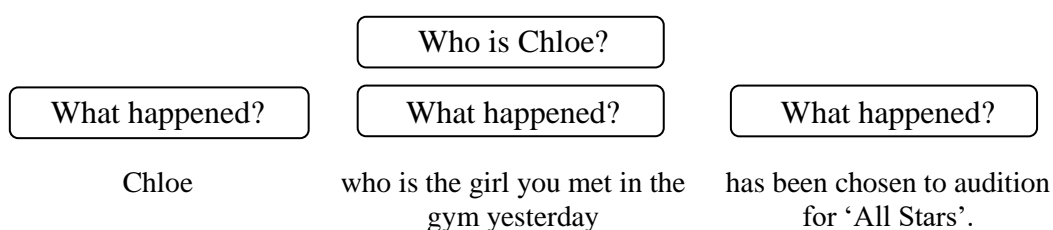


Figure 2. QUD stack update for a sentence-medial ARC

2.3.3 Discourse-Structurally Coordinate ARCs

Even though ARCs usually connect with their main clauses via subordinating relations, assuming that they are independent speech acts, it should be possible for

them to connect via coordinating relations as well. Following Holler (2008), Jasinskaja argues that a particular type of ARCs, known as the continuative relative clause³ (henceforth CRC), participates in coordinating rhetorical relations with main clauses. The existence of CRCs has been noticed by many authors (Cornilescu, 1981; Daalder, 1989; Depraetere, 1996; Holler, 2008; Huddleston & Pullum, 2002; Jespersen, 1970; Koev, 2013; Loock, 2007). The CRC has often been defined as a type of ARC which enables a forward movement of reference time within the narrative. In other words, CRCs are characterized by temporal progression, which makes them similar to main clauses. CRCs can appear with adverbials such as *then*, *now* and *later*. Since other ARCs cannot appear with these adverbials, it has been suggested that inserting them can be used as a test for diagnosing CRCs (Loock, 2007).

In her account of CRCs, Holler (2008) adopts the discourse structure framework of Segmented Discourse Representation Theory (Asher & Lascarides, 2003; Lascarides & Asher, 1993) and makes a distinction between ARCs and CRCs based on the way they rhetorically connect to their main clauses. Namely, she claims that while both ARCs and CRCs are subordinated in their syntactic form, ARCs enter into subordinating rhetorical relations with the main clause, while CRCs enter into coordinating rhetorical relations with the main clause. CRCs can attach to their main clauses by at least two types of coordinating rhetorical relations: Narration and Contrast. Holler illustrates this with the two examples given below. In (13) the CRC is connected with the main clause by a Narration relation, indicated by *then*, which

³ According to Holler (2008) continuative and appositive relative clause are mutually exclusive subclasses of non-restrictive relative clause. On the other hand, Loock (2006) and Jasinskaja (2016) use the term *appositive* as a synonym of *non-restrictive* with regard to relative clauses, which is the terminology adopted in this study as well.

serves to mark temporal progression. In (14) the CRC is connected with the main clause by a Contrast relation, which is lexically indicated by *however*.

(13) Oskar traf einen Bauern, der en *dann* nach dem Weg fragte.
Oscar met a farmer whom he then for the way asked
'Oscar met a farmer, whom he *then* asked the way.'

(14) Oskar machte einen Versuch, der *aber* restlos scheiterte.
Oscar made an attempt which however completely failed
'Oscar made an attempt, which *however* completely failed.'

While it is possible for this type of ARC to participate in coordinating rhetorical relations with main clauses, it seems that in English there is a tendency for ARCs to connect with their main clause by subordinate relations. This observation was confirmed by Loock (2007), who analyzed a corpus consisting of 450 English utterances containing ARCs collected from texts of different genres. The results of his study revealed that only 4.5% of those ARCs were continuative.

In order to account for the at-issue status of CRCs, Jasinskaja turns to the Right Frontier Constraint. In (13) the node corresponding to the CRC is on the right frontier, and so is the discourse topic node corresponding to the whole sentence. Due to a coordinating rhetorical relation, the node of the main clause is closed off by the following CRC and is therefore not on the right frontier. This means that a subsequent rejection can only attach to the CRC or to the sentence as a whole, but not to the main clause. This analysis can be paraphrased in procedural terms (see Figure 3). Since the relation between the main clause and the CRC is coordinating, the QUD related to the main clause (*What happened at t1?*) is resolved and popped off the stack, after which the QUD related to the CRC (*What happened at t2?*) is pushed on the stack. Therefore, the main clause is not at issue any more, while the CRC is. Furthermore, the main clause content cannot be made at issue again.

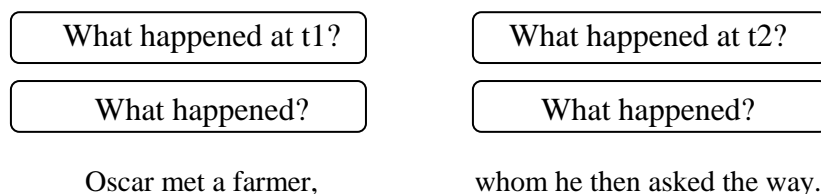


Figure 3. QUD stack update for a CRC

The analysis above applies to sentence-final CRCs. It has been reported in literature that sentence-medial ARCs cannot be continuative (Holler, 2008; Loock, 2007). As seen at the end of Section 2.1, this was also suggested by AnderBois et al. (2015). However, Koev (2013) argues that medial ARCs can also receive continuative interpretation and he provides an example which shows that medial ARCs can participate in temporal progression. In (15) the following sequence of events can be noticed: first Nick sticks his tongue at Jamie, then Jamie hits him and after that she leaves. If the reference time in the CRC did not move forward, *then* would receive a cotermporal interpretation or it would be ruled out. However, it clearly receives a sequential interpretation. Koev reaches the conclusion that while rare, medial CRCs are still attested in naturally occurring discourses.

(15) Nick stuck out his tongue at Jamie. Jamie, who (*then*) hit him, left in a huff.

If medial ARCs can also be continuative, this means that they should be able to participate in coordinating relations as well. Example (15) contains a medial CRC connected to the surrounding discourse units by a Narration relation. However, the event in the CRC is not the last event in the sequence, since the event in the main clause follows it. This means that the main clause closes off the CRC, which then cannot be followed by subsequent attachments. It can be concluded that while the medial CRC is at issue at one point, it cannot be at issue by the end of processing the sentence since the CRC event is followed by the main clause event.

In summary, it was shown that medial ARCs are always interpreted as not at issue by the end of the sentence, while the interpretation of the at-issue status of final ARCs depends on rhetorical relations by which they connect with their main clauses. When a final ARC is attached to the main clause by a subordinating relation, its QUD will be on top of the stack, which means that the ARC content can be at issue. However, there is also an option of popping it off the stack, which would leave the main clause QUD on top of the stack, making the main clause content at issue. On the other hand, given the fact that final CRCs are attached to the main clause by coordinating relations, the main clause QUD needs to be resolved and popped of the stack before the introduction of the QUD corresponding to the CRC. This means that only the CRC content can be at issue by the end of the sentence. An important prediction that follows from this kind of approach is that final CRCs should behave more at issue than final discourse-structurally subordinate ARCs.

As Jasinskaja points out, S&K (2015) did not control for rhetorical relations in their study. For this reason, some final ARCs in Experiment 2 could have received more at-issue interpretations than others due to their continuative interpretations. Consider example (16) below.

(16) The ‘All Stars’ Dance Company has chosen to audition Chloe, who decided to dress in a classical ballet style.

Here the ARC can be understood as an Explanation (giving the reason Chloe was chosen) or an Elaboration (describing how Chloe looked) of the main clause. However, apart from these, the ARC has another interpretation, which is that Chloe decided to dress a particular way after she was chosen to audition. This means that the relation between the ARC and the main clause would be interpreted as a Narration. In that case, only the ARC would be open for the attachment of a subsequent rejection and would have received more at-issue interpretations.

3 Present Study

Based on the discourse-based approach to ARCs reviewed in the previous section several conclusions can be drawn. First of all, when a sentence-final ARC is attached to the main clause by a subordinating rhetorical relation, either the main clause or the ARC can be at issue by the end of processing the sentence. Secondly, given that CRCs are attached to the main clause by coordinating rhetorical relations, only the CRC content can be at issue by the end of the sentence. Based on this kind of analysis of at-issueness, Jasinskaja makes the following prediction: in an experimental setting more at-issue behavior should be expressed by final CRCs than by final discourse-structurally subordinate ARCs.

The main aim of the experiment described in detail in the following section was to test the prediction given above. The design of the experiment was similar to the design of Experiment 2 by S&K (2015). A direct rejection test was used to measure at-issueness of sentence-final ARCs in isolated sentences. The participants were given a forced choice between two forms of rejection: a rejection of the main clause or a rejection of the ARC. The test items involved the manipulation of four types of rhetorical relation between main clauses and ARCs. By controlling for the specific types rhetorical relations I wanted to get a more complete picture of the relationship between rhetorical relations and at-issueness. While the main prediction was that there would be a difference in the at-issue status of CRCs and subordinate ARCs, it was not predicted that there would be any difference in the at-issue status among CRCs based on the type of coordinating relations with which they connected

to the main clause. Similarly, it was not predicted that there would be any difference in the at-issue status among ARCs based on the type of subordinating relations with which they connected to the main clause. Finally, it was predicted that the greatest majority of CRCs would be at issue when compared to main clauses, since they are always supposed to be at issue by the end of processing the sentence.

The experiment involved only final ARCs, while medial ARCs were not included. According to the approach assumed by Jasinskaja while medial ARCs are at issue at some point, they are not interpreted as at issue by the end of the sentence, regardless of the type of rhetorical relation with which they connect to the previous unit. Since it was already confirmed in literature that medial ARCs are unlikely targets of direct rejections (S&K, 2015), it was not necessary to re-test this assumption⁴.

In summary, the purpose of this study is to analyze, present and explain the results of the experiment which explored the at-issue status of sentence-final ARCs based on rhetorical relations with which they attach to main clauses. To my knowledge, previous empirical studies dealing with the at-issue status of ARCs did not manipulate the variables that were manipulated in this experiment and for this reason could not look into the potential relationship between rhetorical relations and at-issueness. The present study, therefore, aims to fill this gap in the ongoing investigation of the information status of ARCs. The following section elaborates on the details of the conducted experiment.

⁴ As Koev (2013) and Jasinskaja (2016) point out, sentence-medial ARCs can be targeted by direct rejections, but only immediately after they have been introduced. Rejecting a medial ARC in this way requires interrupting the speaker, which is often considered socially unacceptable or impolite. For instance:

- (i) A: Chloe, who decided to dress in a classical ballet style...
B: No, she didn't.

Examples such as this one demonstrate that medial ARCs are not at issue only relative to a given point in discourse.

4 Method

4.1 Participants

59 native speakers of English who grew up in the US participated in the experiment. The age of the participants ranged from 18 to 55, with the majority of the participants falling within the range from 18 to 25. The participants were randomly assigned to one of the four lists of test items, which are described in detail in the following section, and were more or less evenly distributed among them: two lists had 16 participants each, one list had 14 participants, and the last one had 13 participants.

4.2 Stimuli

The experimental stimuli involved sets of sentences which consisted of a main clause and a sentence-final ARC. Each sentence was followed by two responses: a direct rejection of the main clause and a direct rejection of the ARC. The participants' task was to choose between these responses. This kind of design of the experiment was guided by the common idea that direct rejections can be used as a standard empirical test for at-issueness (see section 2). Given the common assumption that direct rejections target at-issue content, the participants' willingness to choose the direct rejection targeting the ARC over the direct rejection targeting the main clause was taken to represent strong evidence that the ARC expressed at-issue content. The direct rejections had the form of '*No...*'. In order to make it clear for the participants which part of the utterance the direct rejection was targeting, it was ensured that the

main clause and the relative clause of each sentence differed with respect to the number marking on the subject, as in (17), or gender marking on the subject, as in (18). In each test sentence the nominal anchor for the relative clause was the object of the main clause, which means that the subject and the object of the main clause differed always in number or gender. The ordering of the direct rejections targeting the main clause and the ARC was counterbalanced throughout the experiment.

(17) The judges gave a low score to last year's champion Michael Curry, who, however, fought his way to the top in the next tournament.

a. No, they didn't. (target: main clause)

b. No, he didn't. (target: ARC)

(18) Sarah phoned Andrew, who owed her an explanation.

a. No, she didn't. (target: main clause)

b. No, he didn't. (target: ARC)

The test items involved the manipulation of the type of rhetorical relation between main clauses and ARCs. Each sentence underwent four modifications for the purpose of manipulating four types of rhetorical relations: two coordinating ones (Narration and Contrast) and two subordinating ones (Explanation and Elaboration). In each of these modifications the main clause remained the same, while the relative clause changed depending on the type of rhetorical relation by which it was connected with the main clause. An example set is given in Table 1 below. While there is no exhaustive list of rhetorical relations, the ones chosen for this experiment are recognized by most approaches. I follow Asher and Lascarides (2003) and Jasinskaja and Karagjosova (2016) in defining the types of rhetorical relations relevant for the experiment.

Type of rhetorical relation	Sentence with the relative clause underlined
1. Narration	The managers assigned the project to Mark, <u>who finalized it three months later</u> .
2. Contrast	The managers assigned the project to Mark, <u>who, however, failed to finish it before the deadline</u> .
3. Explanation	The managers assigned the project to Mark, <u>who was the only experienced engineer at the meeting</u> .
4. Elaboration	The managers assigned the project to Mark, <u>who joined the team in March</u> .

Table 1. Example of a set of test items generated by manipulating the type of rhetorical relation between the main clause and the relative clause

Narration is a coordinating rhetorical relation which connects discourse units describing events that take place one after the other. The temporal order of the events matches their textual order. Example 1 in Table 1 illustrates a Narration relation which holds between the main clause (*The managers assigned the project to Mark*) and the CRC (*who finalized it three months later*). The adverbial *three months later* is there to mark that the event in the CRC took place after the event in the main clause. Another adverbial used in test sentences to mark Narration is *then*.

Contrast is a coordinating rhetorical relation which holds between discourse units that are contradictory or in opposition in some respect. Here is assumed a broad notion of Contrast which includes a rhetorical relation identified by some authors as Violated Expectation (for instance, see Kehler, 2002). Apart from some kind of contradiction, Violated Expectation also involves a sense of causality. For instance, in example 2 of Table 1 the main clause *The managers assigned the project to Mark* causes one to believe, or in other words triggers an expectation that Mark would finish it in time. However, this expectation is denied by the CRC (*who, however, failed to finish it before the deadline*). A Contrast relation is marked by *however* in all test sentences.

Explanation is broadly defined as a subordinating rhetorical relation which gives the reason or cause of the state of affairs in the previous discourse unit. Example 3 in Table 1 shows that the ARC *who was the only experienced engineer at the meeting* is naturally interpreted as an explanation of the main clause *The managers assigned the project to Mark*: the fact that Mark was the only experienced engineer there was the reason why the managers assigned the project to him.

Finally, Elaboration is a subordinating rhetorical relation which connects two discourse units where the second one describes the same state of affairs as the first one (usually in different words) or provides some additional information about the situation in the first unit. In example 4 of Table 1 the ARC *who joined the team in March* gives more information about one of the entities mentioned in the main clause (i.e. about Mark).

16 sets of sentences such as the one in Table 1 were generated, amounting to a total of 64 test items. The items were then distributed among four lists following a 4 x 4 Latin square design. The participants were randomly assigned to one of the four lists, which means that each participant saw 16 test items. Out of those 16 items, four involved a Narration relation, four a Contrast relation, four an Explanation relation, and four an Elaboration relation. Each test item on the list belonged to a different set, so that each participant saw only one test item from each set. The test items were presented to the participants together with 18 fillers in pseudorandomized order, which means there were 34 items per participant. All stimuli (both test items and fillers) are included in the Appendix.

The filler items were constructed to distract the participants from the goal of the experiment. They resembled the test items in form: they involved a main clause to which an ARC was attached. Just like the test items, the fillers varied in the type

of rhetorical relation between the main clause and the ARC. Each filler was followed by two responses. Only one response was appropriate, while the other one was nonsensical in the given context: it could target neither the main clause nor the ARC. The ordering of appropriate and nonsensical responses was counterbalanced throughout the experiment. The participants who chose the nonsensical answer to two or more fillers were disqualified from the experiment due to the possibility that they were not completely focused on the task (4 participants in total). With respect to the type of response there were two kinds of fillers: those followed by an acceptance in the form of ‘*Yes...*’ and those followed by a rejection in the form of ‘*No...*’. Below are given examples of both types of fillers.

- (19) Sandra sent a wedding invitation to Ryan, who, however, declined to come.
a. Yes, he was. (nonsensical)
b. Yes, he did. (appropriate)
- (20) The inspectors interrogated Paul Randall, who was a suspect in a murder case.
a. No, he didn’t. (nonsensical)
b. No, they didn’t. (appropriate)

4.3 Procedure

The experiment was administered in the form of an online survey⁵. Before starting the experimental session, the participants read the instructions, which explained the experimental procedure. They were asked to read short statements followed by two responses. Their task consisted in choosing the response they found appropriate for each statement. The participants were instructed that in case both responses seemed appropriate, they should choose the one which sounded more natural to them. It took between 5 and 10 minutes for the majority of the participants to complete the

⁵ The survey was generated and administered using the online survey software tool SurveyGizmo, available at: <http://www.surveygizmo.com/>

experiment. After the experiment, the participants were asked to answer a feedback question regarding the goal of the experiment. The greatest majority did not show any awareness of what the experiment was about. Once the responses from all the participants were gathered, they were submitted for statistical analysis. The following section discusses the way the results were computed and presents a summary of them.

4 Results

The analysis was carried out in R (R Development Core Team, 2008), which is a programming language for statistical computing. The dependent measure in the analysis was the percentage of ‘No’ responses targeting the main clause or the ARC. The test items were grouped based on the four types of rhetorical relations (Narration, Contrast, Explanation, Elaboration) they contained. They were further grouped into two larger categories, based on whether they contained coordinating or subordinating rhetorical relations. These were the two values of the variable RType which allowed me to compare coordinate and subordinate ARCs to one another.

I began by computing the overall percentage of time a ‘No’ response was chosen to target the relative clause, as opposed to the main clause (60.3% v. 39.7% respectively). To investigate the participants’ preference for the relative clause as the target of direct rejections, further analysis was conducted, which involved the comparison of the percentages of direct rejections targeting the main clause and the two types of ARCs, as shown in Figure 4 below. When the relative clause was connected to the main clause via coordinating relations, the participants chose to reject the ARC in most cases (73.1% for the ARC v. 26.9% for the main clause). On the other hand, when the relation was subordinating, the participants opted for the ARC rejection approximately half of the time (47.5% for the ARC v. 52.5% for the main clause).

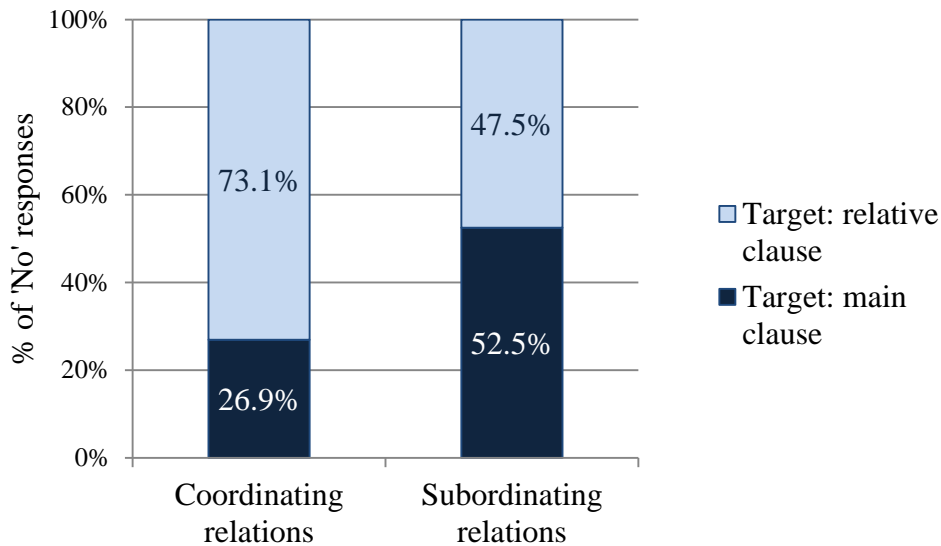


Figure 4. Percentage of direct rejections targeting either the main clause or the coordinate/subordinate ARC

To examine the association between the RType variable and the Response variable, a chi-square test for independence (with Yates Continuity Correction) was conducted. The results of the test showed that there was a significant relation between these variables ($X^2(1, 944) = 63.71, p < .001^6$). Therefore, the participants' willingness to choose the relative clause as the target of direct rejection varied based on whether it connected to the main clause by coordinating or subordinating rhetorical relations.

Next, I calculated the percentage of 'No' responses targeting relative clauses depending on the specific type of rhetorical relation with which they connected to main clauses. The results are presented in Figure 5. The participants overwhelmingly preferred the rejection of the relative clause (75.4%) over the rejection of the main clause (24.6%) when they were connected by a Narration relation. The results were similar when the relative clause and the main clause were connected by the other coordinating relation, Contrast (70.8% of 'No' responses targeting the relative clause v. 29.2% of 'No' responses targeting the main clause).

⁶ Statistical significance is achieved for $p < .05$.

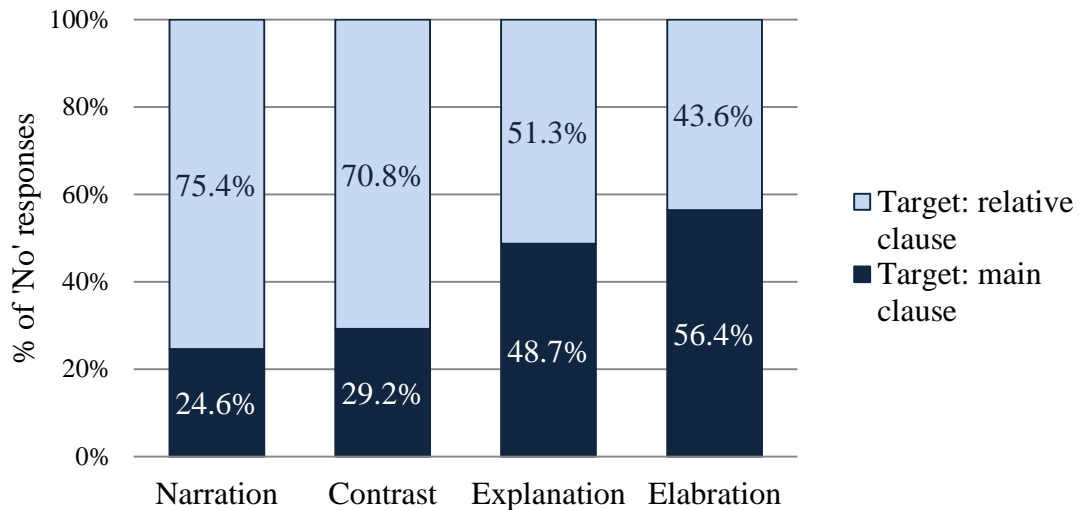


Figure 5. Percentage of direct rejections targeting either the main clause or the relative clause depending on the specific type of rhetorical relation with which they were connected

A chi-square test for independence was conducted to explore the potential relation between the participants' responses and the type of coordinating relation with which CRCs connected to main clauses, but no significant results were obtained ($X^2(1, 472) = 1.08, p = .299$). In other words, there was no significant difference in the distribution of responses between the two groups of CRCs.

Finally, I compared the percentage of direct rejections targeting the main clause and the ARC when the rhetorical relation between them was subordinating. In the case of Explanation, the results indicated that 51.3% of 'No' responses targeted the relative clause and 48.7% - the main clause. The same comparison was carried out when the relation was Elaboration (43.6% for the relative clause v. 56.4% for the main clause). A chi-square test for independence showed no significant difference in the distribution of 'No' responses between the two groups of subordinating ARCs ($X^2(1, 472) = 2.45, p = .117$).

To summarize, the results of the experiment revealed that overall the participants were more willing to reject the ARC than the main clause. It was also shown that they more frequently opted for the rejection of the ARC when it was

attached to the main clause by coordinating relations than when it was attached by subordinating relations. A chi-square test for independence indicated that there was a significant association between the participants' responses and the type of rhetorical relation between the ARC and the main clause. Further analysis revealed that there was no significant difference in the distribution of the participants' responses between the two groups of coordinating ARCs, as well as between the two groups of subordinating ARCs. The results presented here are discussed with regard to the initial predictions of the study in the following section.

5 Discussion

The main aim of this study was to test the prediction that final CRCs should express more at-issue behavior than final discourse-structurally subordinate ARCs, according to the discourse-based model of ARCs developed by Jasinskaja (see section 2.3). The results of the experiment confirmed this prediction, provided that being a target of a direct rejection is a diagnostic for being at issue. The participants opted for the direct rejection targeting the CRC instead of the main clause in 73.1% of the cases, whereas they chose the direct rejection targeting the subordinate ARC in 47.5% of the cases. The association between the distribution of the participants' responses and the type of relation with which the ARC connected to the main clause was significant. In other words, whether the participants chose the main clause or the ARC as the target of a 'No' response depended on whether the two clauses were connected via coordinating or subordinating rhetorical relations. Furthermore, as expected, no significant difference was found in the distribution of the participants' responses between the two groups of coordinate ARCs. This shows that the CRC was equally open to subsequent attachment regardless of the type of coordinating relation with which it connected to the main clause. The same observation can be made concerning the two groups of subordinate ARCs: no significant difference was found in the distribution of 'No' responses between them.

Thus far the results have shown that the difference in the percentages of direct rejections targeting final coordinate and subordinate ARCs is significant and big enough to conclude that the discourse-based approach makes a correct prediction

regarding the difference in the at-issue status of these two groups of ARCs. The following two sections include some further observations about each group.

5.1 Coordinate ARCs

As seen above, the results of the experiment clearly indicated that CRCs were the preferred targets of direct rejections when compared to main clauses. This outcome was expected, given that their processing requires a queue memory model, since they are connected via coordinating rhetorical relations with main clauses. This means that the main clause QUD has to be resolved and popped off the stack before the QUD corresponding to the CRC can be pushed on the stack. For this reason it is predicted that only the CRC would be at issue and open for attachment of the following unit – in this case a direct rejection. However, given that the main clause cannot be made at issue any more, the percentage of ‘No’ responses targeting the main clause followed by a CRC (26.9%) could be considered higher than expected. In particular, there are two test items which stand out in this respect:

- (21) The symphony directors hired my friend Sophie, who, however, turned out to be a horrible violinist.
- a. No, they didn’t.
 - b. No, she didn’t.
- (22) At the meeting, George publicly supported his wife, who was then hired by another company.
- a. No, he didn’t.
 - b. No, she wasn’t.

For (21) the participants chose the ‘No’ response corresponding to the main clause in 81.2% of cases, and the ‘No’ response targeting the CRC in only 18.8% of cases. As for (22), 61.5% of chosen rejections were targeting the main clause, while 38.5% were targeting the CRC. The responses to these two items clearly break the

pattern of results, since other rejections targeting the CRC mostly fall within the range of 60-90+%. It could be speculated that in the case of (22), the use of the passive voice in the CRCs might have distracted the participants from perceiving the CRC as a salient target of rejection. Yet, the passive voice was also present in other test items which had a high percentage of CRC rejections. For instance, for (23) the percentage of rejections targeting the CRC was 75%, while for (24) it was 92.9%. Therefore, the cause of the unexpected result should be sought elsewhere. However, based solely on the two anomalous test items above, it is difficult to formulate any generalizations.

(23) The judges gave a low score to last year's champion Michael Curry, who was then disqualified for arguing with them.

(24) Officer James Wilson arrested Lisa, who was, however, released a week later.

What should also be noted is that the CRCs in (25) and (26) were rejected in 100% of cases. This was never the case with subordinate ARCs. If it is assumed that final CRCs should always be at issue, while final subordinate ARCs compete with the main clause for at-issue status at the end of the sentence, then this observation is in agreement with the given approach.

(25) This year, the Paris Literary Prize committee awarded the prize to Tessa Brown, who, however, refused to accept it.

(26) The symphony directors hired my friend Sophie, who then had an argument with the principal conductor.

5.2 Subordinate ARCs

An interesting observation should be noted here. It was seen that results of the experiment showed the overall preference for the sentence-final ARC as the target of a direct rejection when compared to the main clause (60.3% v. 39.7% respectively).

When these results are compared to the ones obtained by S&K in Experiment 2, an obvious difference can be noticed. In their experiment the reverse pattern was observed: in 64.5% of the cases the participants opted for the ‘No’ response targeting the main clause, rather than the ‘No’ response targeting the final ARC (35.5%). Given that S&K did not control for the rhetorical relations between the clauses, a difference was expected if we assume that discourse-structurally coordinate ARCs are much less frequent than discourse-structurally subordinate ARCs (Loock, 2007). However, even if we look only at the percentage of direct rejections targeting the subordinate ARCs in the present experiment, the number is still considerably higher than the percentage of direct rejections targeting final ARCs in S&K’s experiment. Namely, the participants of the present experiment chose the rejection of the subordinate ARC approximately half of the time (47.5%).

At first, this number seems to be in line with Jasinskaja’s approach. In section 2.3.2 it was seen that in a sentence consisting of a main clause and a discourse-structurally subordinate ARC, both units are on the right frontier. Therefore, according to the Right Frontier Constraint, both should be equally open for further attachments, such as a direct rejection. Since either of the two clauses can in principle adopt at-issue status, it is expected that ARCs would do so roughly half of the time. Therefore, the results of the experiment seem to support the outlined theory. However, the difference between the results obtained in the present study and those in Experiment 2 by S&K needs to be investigated further and explained.

The preference of the subsequent sentences to attach to the main clause observed in S&K’s study is addressed by Jasinskaja (2016). In order to account for it, she turns to a hypothesis proposed by Frazier and Clifton (2005):

Main Assertion Hypothesis: Other things equal, comprehenders prefer to relate material in a new sentence to the main assertion in the preceding sentence. (Frazier & Clifton, 2005, p. 139)

The main assertion is typically found in the main clause. Assuming that syntactic subordination and discourse subordination typically match, Jasinskaja suggests that within the discourse-based approach, the main assertion of a complex sentence is found in the clause that discourse-structurally subordinates all other clauses in that sentence. As a result, the apparent preference for attachment to the main clause could in fact be a preference to attach to the subordinating discourse unit. However, the Right Frontier Constraint does not make a prediction that the main clause is more open than the ARC for subsequent attachment.

In order to reconstruct this prediction within her account, Jasinskaja rephrases the Main Assertion Hypothesis in the form of two general principles given below:

Matching Structures Hypothesis: In a sequence A - B - C, if the boundary separating A and B is weaker than the one separating B and C, then [[AB]C]; if it is stronger, then [A[BC]]. (Jasinskaja, 2016, p. 21)

Subordination principle: If a discourse unit C is to be attached to a complex discourse unit [AB] and a subordinating coherence relation holds between the subunits A and B of that complex unit, C will attach to the subordinating subunit. (Jasinskaja, 2016, p. 20)

The first principle represents in fact Wagner's Hypothesis about attachment and prosody (Wagner, 2006), which Jasinskaja applies to discourse structure. If it is assumed that a sentence boundary is greater than a clause boundary, then according to this principle when sentence C is attached to a complex structure consisting of two clauses A and B, it will in fact be attached to the whole chunk [AB]. If in sentence [AB] the rhetorical relation between clauses A and B is a subordinating one, the Subordinating principle is applied, and attachment of sentence C to the whole unit

[AB] in fact represents attachment to the subordinating subunit. Consider examples (27) and (28) from Frazier and Clifton (2005).

(27) John said that Fred went to Europe. Mary did too.

(28) John said that Fred went to Europe and Mary did too.

In (27) *Mary did too* has a greater chance to attach to the main clause *John said* than to the complement clause *that Fred went to Europe*. In other words, the VP ellipsis would typically be resolved as *Mary said that too*. On the other hand, if A, B and C are clauses without sentence boundaries between them, then we can rely on some other cues (for instance, punctuation or prosody) to determine which units are closer together. If such cues are not present, we have to rely on the Right Frontier Constraint to determine whether C attaches to A or B. This means that in (28) the coordinate clause *and Mary did too* can in principle attach either to the main clause or to the complement clause, assuming that there is no difference between the boundary before the complement clause and the boundary before the coordinate clause.

It can be concluded that only when the structural boundaries between units A, B and C are perceived as equally strong will subordinate clause B become available for the subsequent attachment of C. Let us recall that Jasinskaja's account of at-issueness is based on the assumption that ARCs represent independent illocutionary acts. As she points out, a speech act boundary can be as strong as a sentence boundary. Being an independent speech act, the subordinate clause can be upgraded to a level at which it is perceived as equal with the surrounding discourse units, so that the Right Frontier Constraint can be applied.

Following this line of reasoning, we can find a potential explanation for the difference in the percentages of direct rejections targeting sentence-final ARCs in

S&K's Experiment 2 and in the present study. In both experiments, direct rejections came in the form of a separate sentence. It can be assumed that the participants chose the 'No' response corresponding to the subordinate ARC when they perceived the boundary between the main clause and the ARC as strong as a sentence boundary and on a par with the subsequent direct rejection. This is where the difference in the designs of the experiments could have had an effect. In S&K's experiment the stimuli were prerecorded and paired with the sentences presented on the screen. Therefore, the participants were presented with both prosodic and punctuational indications of how close together the units were structured. Elements such as the length of the pause between the main clause and the ARC, or between the rejection and the target clause, as well as other prosodic characteristics in addition to punctuation could have influenced the likelihood of rejecting one unit as opposed to the other. On the other hand, in the present experiment the participants could only rely on punctuational cues. It is possible that they had more room for different interpretations which led them to perceive the clause boundary as strong as the sentence boundary much more often than was the case in S&K's experiment. This would explain the higher percentage of 'No' responses targeting the ARC in this study.

5.3 Summary

While the percentage of direct rejections targeting the main clause v. the CRC might be higher than expected, the results of the experiment clearly indicate that there *is* a difference between final discourse-structurally coordinate and subordinate ARCs with regard to at-issueness. Together with the high percentage of 'No' responses corresponding to the CRCs, this difference represents the confirmation of the prediction that CRCs express more at-issue behavior than subordinate ARCs. It can

be concluded that the results suggest that the discourse-based approach is a step in the right direction in understanding and accounting for the at-issue status of ARCs.

The results presented in this study are at odds with the other approaches to ARCs reviewed in section 2. First of all, they are clearly in contrast with the model assumed by AnderBois et al. (2010, 2015). Namely, according to them ARCs are proposals which are directly imposed on the context set and therefore they cannot be negotiated, which means that they are not available as targets for direct rejections. Such a view which categorically denies the negotiability of ARCs would have a hard time accounting for the high percentage of ‘No’ responses targeting ARCs in this study.

It is also difficult to see how the results of the present study could be accounted for within the approach developed by S&K (2015). On their view, the way the at-issue status of ARCs is interpreted depends on their syntactic structural position. Final ARCs are ambiguous in the sense that they can be attached to either the anchor or the root node. When attached to the anchor, they are predicted to be not at issue; when attached to the root node they are interpreted as at issue. While this account predicts that final ARCs can be directly rejected, no prediction is made with regard to a difference which exists between discourse-structurally subordinate and coordinate ARCs, as observed in this study. What is more, it would be difficult to reconstruct this prediction within such a syntactic framework, since there are no syntactic differences between the two types of ARCs.

6 Conclusion

This thesis provided insight into the information status of ARCs. In particular, it examined whether sentence-final ARCs follow a uniform pattern with respect to their at-issue status. The study relied on a discourse-based approach developed by Jasinskaja (2016). As seen in Section 2.3, this approach predicts that in a sentence which consists of a main clause and a final discourse-structurally subordinate ARC, either of the two units can be at issue and open for attachment of a subsequent direct rejection. On the other hand, in the case of a final discourse-structurally coordinate ARC, i.e. CRC, only the ARC can be at issue by the end of the sentence. Therefore, it is predicted that final coordinate ARCs should be more often at issue than final subordinate ARCs.

The present study provided empirical evidence for this prediction. The experiment involved the manipulation of coordinating and subordinating rhetorical relations between the main clause and the final ARC and it relied on the direct rejection test as a diagnostic for at-issue status. The participants were presented with a forced choice task, where they had to opt either for a direct rejection of the main clause or a direct rejection of the ARC. The results presented in section 4 indicated that in the case of coordinating relations, the participants mostly chose the ARC as the target of a ‘No’ response (73.1%). When the relation between the main clause and the ARC was subordinating, they opted for the ARC approximately half of the time (47.5%). Therefore, the results of the experiment were interpreted as confirmation of the initial prediction. However, the results also raised some issues

that need further explanation. First of all, given that final CRCs are always predicted to be at issue, the number of rejections corresponding to them should have been higher. Secondly, the results of the experiment were compared to the ones obtained by S&K (2015) in Experiment 2. What could be noticed was that the percentage of rejections targeting the final ARC v. the main clause was considerably higher than the percentage obtained in S&K's experiment. The previous section addresses these issues and attempts to provide an explanation.

Given that the present study showed that the discourse-based approach to ARCs is on the right track with respect to the prediction tested in this experiment, other predictions need to be empirically confirmed as well. For instance, the approach does not make any reference to the fact that rejections involve truth value judgments. Instead, a direct rejection is seen as material which attaches to discourse units by a particular kind of rhetorical relations, as specified by the Right Frontier Constraint. In principle, new material could attach to ARCs by any other rhetorical relation. Therefore, it would be interesting to conduct an experiment with a forced choice task involving, for example, elliptical *Why?*-questions targeting the main clause v. the coordinate ARC, as well as the main clause v. the subordinate ARC. The results could be compared to the ones obtained in this study.

Moving a step away from the main issues of this study, there are some other interesting predictions raised by the discourse-based approach to ARCs. Namely, ARCs are regarded as independent discourse units which participate in rhetorical relations on a par with main clauses. Adverbial clauses are another type of subordinate clauses which are considered to be independent units, and Jasinskaja goes a long way to show how they are similar to ARCs. Thus, all the predictions related to ARCs should also apply to them. For example, Jasinskaja claims the

availability of adverbial clauses for subsequent attachments is also related to their position in the sentence, and that it should be easier to reject a sentence-final adverbial clause, as in (29), than a non-final one, as in (30). Predictions like this one need to be theoretically and empirically investigated.

(29) A: The judges gave a low score to Michael Curry because he made a lot of mistakes.

B: No, he didn't.

(30) A: Because Michael Curry made a lot of mistakes the judges gave him a low score.

B: # No, he didn't.

To conclude, the present thesis contributes to the existing literature on the perplexing notion of at-issueness. While a large number of expressions which convey some type of not-at-issue content have been identified so far, not much is known about their empirical properties and the contribution they make to meaning. As Beaver et al. (2009) point out, a great amount of work on at-issueness is based on judgments by linguists and few of the categories of not-at-issue content are firmly rooted in empirical observations. Therefore, studies like this one are a necessary step in answering questions regarding how many types of not-at-issue content there are, how the interpretation of at-issue status varies across constructions, as well as how the interaction of various meaning types contributes to the overall meaning of linguistic utterances.

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Appendix

Test items

Below is presented a full set of test items involved in the experiment. Each sentence underwent four modifications for the purpose of manipulating four types of rhetorical relations. The manipulated coordinating relations were Narration (a) and Contrast (b), while the subordinating ones were Explanation (c) and Elaboration (d). The ARC in each sentence is underlined.

- (1)
 - a. This year, the Paris Literary Prize committee awarded the prize to Tessa Brown, who then gave the prize money to charity.
 - b. This year, the Paris Literary Prize committee awarded the prize to Tessa Brown, who, however, refused to accept it.
 - c. This year, the Paris Literary Prize committee awarded the prize to Tessa Brown, who wrote one of the greatest historical novels of the decade.
 - d. This year, the Paris Literary Prize committee awarded the prize to Tessa Brown, who is a first-time novelist.
- (2)
 - a. Officer James Wilson arrested Lisa, who broke out of jail two days later.
 - b. Officer James Wilson arrested Lisa, who was, however, released a week later.
 - c. Officer James Wilson arrested Lisa, who committed a felony.
 - d. Officer James Wilson arrested Lisa, who had already been in jail before.
- (3)
 - a. Pam gave the book to Emil, who then took it to the library. (based on an example from Holler, 2008)
 - b. Pam gave the book to Emil, who, however, lost it the next day.
 - c. Pam gave the book to Emil, who needed it for his book club meeting.
 - d. Pam gave the book to Emil, who is the guy she met in the library.

- (4) a. The judges gave a low score to last year's champion Michael Curry, who was then disqualified for arguing with them.
b. The judges gave a low score to last year's champion Michael Curry, who, however, fought his way to the top in the next tournament.
c. The judges gave a low score to last year's champion Michael Curry, who delivered one of the worst performances of his career.
d. The judges gave a low score to last year's champion Michael Curry, who skated for the UK.
- (5) a. Jack tried to kiss Monica, who then told her boyfriend about it.
b. Jack tried to kiss Monica, who, however, slapped him in the face.
c. Jack tried to kiss Monica, who has always been the love of his life.
d. Jack tried to kiss Monica, who is a girl from his class.
- (6) a. The managers assigned the project to Mark, who finalized it three months later.
b. The managers assigned the project to Mark, who, however, failed to finish it before the deadline.
c. The managers assigned the project to Mark, who was the only experienced engineer at the meeting.
d. The managers assigned the project to Mark, who joined the team in March.
- (7) a. The spectators cheered on Stewart, who then retired a few weeks after the game.
b. The spectators cheered on Stewart, who, however, forfeited the match.
c. The spectators cheered on Stewart, who scored the winning point.
d. The spectators cheered on Stewart, who was the youngest player on the team.
- (8) a. Sarah phoned Andrew, who then told her the truth.
b. Sarah phoned Andrew, who, however, hung up on her.
c. Sarah phoned Andrew, who owed her an explanation.
d. Sarah phoned Andrew, who is her ex-boyfriend.
- (9) a. Kelly filed a lawsuit against her landlord Bob Simons, who then tried to bribe the judge.
b. Kelly filed a lawsuit against her landlord Bob Simons, who, however, fled the country a few days later.

- c. Kelly filed a lawsuit against her landlord Bob Simons, who had evicted her without prior notice.
- d. Kelly filed a lawsuit against her landlord Bob Simons, who owns several buildings in the city.
- (10) a. The dance instructor showed the routine to her students, who then repeated it from beginning to end perfectly.
- b. The dance instructor showed the routine to her students, who, however, forgot the steps by the next class.
- c. The dance instructor showed the routine to her students, who were required to perform it at Michigan Dance Challenge.
- d. The dance instructor showed the routine to her students, who were all beginners.
- (11) a. Tom bought an expensive necklace for Laura, who wore it at the party the next day.
- b. Tom bought an expensive necklace for Laura, who, however, exchanged it for a bracelet.
- c. Tom bought an expensive necklace for Laura, who was celebrating her 30th birthday.
- d. Tom bought an expensive necklace for Laura, who enjoys wearing jewelry.
- (12) a. The symphony directors hired my friend Sophie, who then had an argument with the principal conductor.
- b. The symphony directors hired my friend Sophie, who, however, turned out to be a horrible violinist.
- c. The symphony directors hired my friend Sophie, who was the best violinist at the audition.
- d. The symphony directors hired my friend Sophie, who is a classical violinist.
(taken from S&K, 2015)
- (13) a. Last Thursday, Philip proposed to Julie, who then disappeared the next morning.
- b. Last Thursday, Philip proposed to Julie, who, however, turned him down.
- c. Last Thursday, Philip proposed to Julie, who had been his girlfriend for seven years.
- d. Last Thursday, Philip proposed to Julie, who works with him in the office.
- (14) a. Dr. Nick Richards gave a lollipop to Chloe, who then asked for another one.

- b. Dr. Nick Richards gave a lollipop to Chloe, who, however, continued crying.
- c. Dr. Nick Richards gave a lollipop to Chloe, who had behaved well during the exam.
- d. Dr. Nick Richards gave a lollipop to Chloe, who has been his patient for years.
- (15) a. At the meeting, George publically supported his wife, who was then hired by another company.
- b. At the meeting, George publically supported his wife, who, however, lost the elections.
- c. At the meeting, George publically supported his wife, who was running for office.
- d. At the meeting, George publically supported his wife, who is a proud New Yorker.
- (16) a. In her will, Bethany left her fortune to Sam, who then used the money to start his own business.
- b. In her will, Bethany left her fortune to Sam, who, however, gambled it all away.
- c. In her will, Bethany left her fortune to Sam, who took care of her for years.
- d. In her will, Bethany left her fortune to Sam, who was one of her many nephews.

Fillers

Below is presented a full set of fillers involved in the experiment. There were two kinds of fillers: those followed by an acceptance in the form of ‘*Yes...*’ and those followed by a rejection in the form of ‘*No...*’.

Fillers followed by a ‘Yes’ response

- (17) Last night Ruth had a fight with her husband, who then moved out of the house.
- (18) The nurses had a meeting with executive director John Stocks, who then promised to raise their salaries.

- (19) Yesterday, Steve ran into Tina, who then offered him a ride home.
- (20) Sandra sent a wedding invitation to Ryan, who, however, declined to come.
- (21) Ashley fell in love with an Italian guy, who, however, married another woman.
- (22) Hugh apologized to his parents, who, however, decided to punish him anyway.
- (23) Principal Michael Brown fired Mrs. Robinson, who was constantly late for work.
- (24) Carter organized a fundraiser for the Greys, who recently lost their home in a fire.
- (25) Linda shared her secret with Bill, who is a very trustworthy person.
- (26) Martin took a photo with Lilly Watson, who is a famous R&B singer.
- (27) Top universities were recruiting Bruce, who was a senior in high school.
(taken from S&K, 2015)
- (28) Last night, Stella Atkins had dinner with Josh Bradley, who is the producer of her new movie.

Fillers followed by a ‘No’ response

- (29) Harley watched a horror movie with Hope, who then had nightmares all night.
- (30) Hank read a story to his daughter, who then fell asleep in his arms.
- (31) Everyone bet on Russell Sheppard, who was, however, defeated by his opponent.
- (32) My sisters went camping with Phoebe, who got bitten by a snake.
- (33) Last week, Norman threw a party for Samantha, who finally decided to retire.
- (34) The inspectors interrogated Paul Randall, who was a suspect in a murder case.