Embedded Verb Second in German: Experiments at the Syntax-Pragmatics Interface

by

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Abstract

The interpretation and licensing of clauses with Embedded Verb Second (EV2) in German have been widely debated over the past decades. The goal of this thesis is to experimentally test empirical claims in more recent work on EV2 in German, in particular those in Djärv 2019a and Caplan & Djärv 2019. Djärv (2019a) and Caplan & Djärv (2019) argue that (i) EV2 clauses must denote discourse-new information, and that (ii) EV2 clauses are therefore unacceptable under embedding predicates that presuppose that the complement proposition is discourse-old. These claims were tested using a judgment task to elicit the naturalness of EV2 clauses when they constitute discourse-old information. The results provide two key findings. First, they show that the EV2 clauses are judged natural when they constitute discourse-old information. Second, the results show that canonical verb-final configurations are preferred over EV2 complements if the embedded proposition denotes discourse-old information. The results partially bear out previous claims and I argue that it is the lexical semantics of embedding predicates alone that determines whether EV2 is available, not the discourse status of any particular instance of EV2. Moreover, this thesis provides additional evidence against the claim that EV2 gives rise to speaker-commitment interpretations of the embedded proposition, replicating the results in Djärv 2019a and Caplan & Djärv 2019.

Keywords: Embedded V2, syntax-pragmatics interface, discourse novelty, givenness

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Chapter 1

Introduction

German is a Verb Second (V2) language with a canonical verb-final word order in embedded clauses. If a language has V2 effects in main clauses, it means that the second constituent of the clause must be the finite verb. The finite verb is preceded by a topic, which can be any other constituent in the clause. This is shown in (1): (1a) has a subject-verb-object order, while (1b) has an object-verb-subject order. Example (1c) shows the canonical verb-final word order of the embedded clause.

(1) a. Franka mag die Nachbarn nicht
Franka likes the neighbors not
'Franka doesn't like the neigbhors.'

b. Die Nachbarn mag Franka nicht
the neighbors like Franka not
'Franka doesn't like the neighbors.'

c. Peter sagt, dass Franka die Nachbarn nicht mag
Peter says that Franka the neighbors not like
'Peter says that Franka doesn't like the neighbors.'

V2 word order is considered to be a main-clause phenomenon (MCP, Hooper & Thompson 1973), and (1c) shows the typical verb-final word order of embedded clauses. Nonetheless, embedded clauses sometimes also have a V2 word order. The distribution of V2 word orders in embedded clauses is constrained and only certain types of embedding predicates can select EV2 complements. An example of an EV2 word order is given in (2):

(2) Peter sagt, Franka kennt die Nachbarn nicht
Peter says, Franka knows the neighbors not
'Peter says that Franka doesn't know the neighbors.'

Embedded clauses with V2 structures like in (2) are only grammatical in certain circumstances. This has sparked considerable debate and existing accounts disagree on the interpretation and licensing conditions of EV2 clauses. It is a recurring intuition that the

structural parallelism between root V2 clauses and embedded V2 clauses gives rise to a parallel interpretation, meaning that EV2 clauses are argued to be interpreted in a way similar to declarative V2 main clauses. That is, declarative V2 main clauses are argued to be interpreted as speaker commitments to the proposition. Consequently, it has been proposed that if an embedded clause has a main-clause structure, the embedded clause must be interpreted as expressing commitment (Wechsler 1991; Fabricius-Hansen 1992; Gärtner 2002; among others). There are two kinds of proposals that take this route. The first one is by Truckenbrodt 2006, who proposes that EV2 clauses are only allowed if it is entailed by the lexical semantics of the embedding predicate that the subject of the matrix-clause commits to the embedded proposition (p). The second one is by Woods 2016 and Sode & Truckenbrodt 2018. Woods (2016) argues that EV2 clauses yield the interpretation that the speaker of the utterance commits to p. Sode & Truckenbrodt (2018)'s proposal is similar, although they argue that the speaker-commitment interpretation is only present if the finite verb of the embedded clause has indicative morphology.

Recent work by Djärv 2019a and Caplan & Djärv 2019 refute these commitment-based approaches and show that commitment to p by either the matrix-clause subject or the speaker is not relevant for allowing EV2. Instead, they argue that EV2 clauses are interpreted as constituting discourse-new information. Djärv (2019a) and Caplan & Djärv (2019) present experimental evidence that demonstrates that embedding predicates that presuppose givenness of their complements disallow EV2 complements. Djärv (2019a) and Caplan & Djärv (2019) demonstrate a correlation between EV2 and discourse novelty based on the lexical semantics of the embedding predicates. They hypothesize that EV2 is allowed if (a) the embedding predicate does not presuppose givenness of its complement proposition p, and (b) if p itself is discourse new. However, they do not present explicit evidence in support of (b), namely that p must be new itself for EV2 to be acceptable. This thesis presents an experiment in which this claim is explicitly tested, and shows that the discourse status of p does not affect the acceptability of EV2. What the results did show, however, was that discourse-old EV2 clauses under EV2-allowing embedding predicates are rated as relatively less natural than discourse old verb-final clauses. We suggest that this is driven by a different set of discourse-pragmatic preferences.

Moreover, this thesis presents a second experiment, which adds to the evidence against commitment-bases approaches. Even though Djärv (2019a) shows evidence that EV2 is unrelated to commitment to p, she has not tested whether there is truth in the more nuanced approach by Sode & Truckenbrodt 2018. They propose an interaction between verbal mood of the finite verb in the EV2 clause and speaker-commitment interpretations: if the finite verb in the EV2 clause has indicative morphology, both the speaker of the utterance and the matrix-clause subject are argued to have committed to p; if the finite verb in the EV2 clause has subjunctive morphology, only the matrix-clause subject is argued to commit to

p. The results of the second experiment show that there is no evidence in support of Sode & Truckenbrodt's (2018) claims.

Overall, this thesis presents empirical evidence that shows that if EV2 clauses are licensed by the lexical semantics of the embedding predicate, they may constitute discourse-old information. At the same time, this thesis presents further empirical evidence against commitment-based approaches. As such, Djärv's (2019a) analysis that EV2 is licensed by lexical factors of the embedding predicate remains unchallenged.

This thesis is structured as follows. Chapter 2 discusses background on the syntax of V2 and EV2 clauses, and reviews the different empirical claims and proposals of EV2 interpretation and licensing. Chapter 3 reports the first experiment, in which the relationship between EV2 acceptability and the discourse status of p is examined. Chapter 4 presents the second experiment, which investigates whether there is any interaction between verbal mood and speaker-commitment to p in EV2 clauses. Chapter 5 concludes with a summary and suggests directions for further research.

Chapter 2

Empirical Claims about EV2

In this chapter, I present an overview of various empirical claims about the distribution and interpretation of EV2 complements in German. This chapter is structured in the following way. First, I outline the widely adopted assumptions about the syntactic structure of V2 and EV2 clauses. This is followed by a discussion of different empirical claims about the interpretation of EV2 clauses. In the final section, I outline a number of remaining questions that lead to the experiments presented in Chapters 3 and 4.

2.1 The Syntax of Verb Second

Verb Second is a phenomenon in some languages (e.g. Dutch, German) in which it is obligatory that the finite verb be realized in the second position of the clause. V2 in German is a root-clause phenomenon (Den Besten, 1983, among others), which means that it typically occurs in main-clause configurations. V2 clauses have a topicalized, clause-initial constituent that comes before the finite verb. This can be the object (3a), subject (3b), or an adverbial (3c), among others.

(3) a. Das Buch habe ich nicht gelesen
that.DET book have I not read
'I didn't read that book.'

b. Ich habe das Buch nicht gelesen
I have that.DET book not read
'I didn't read that book.'

c. Gestern habe ich das Buch nicht gelesen
Yesterday have I that.DET book not read
'I didn't read that book yesterday.'

It has been argued that the finite verb in V2 clauses occupies the complementizer position (Den Besten 1983; De Haan & Weerman 1986; Holmberg & Platzack 1995; Hulk & van Kemenade 1995; among many others). When a clause is introduced by a complementizer – which is usually the case in embedded clauses – the finite verb is in clause-final position

(4a). In (3), we see that the verb sits in second position when there is no complementizer. However, we see in (4b) that a V2 structure is ungrammatical if a complementizer is present. This suggests that V2 and overt complementizers are in complementary distribution, and provides evidence for the claim that the verb sits in the complementizer position in V2 clauses.

(4) a. ...dass ich das Buch nicht gelesen habe
...that.COMP I that.DET book not read have
'...that I didn't read that book.'

b. * ...dass habe ich das Buch nicht gelesen
...that.COMP have I that.DET book not read
'...that I didn't read that book.'

Even though V2 is a main-clause phenomenon in German, it can also occur in embedded clauses if the embedded clause lacks a complementizer (Hulk & van Kemenade, 1995; De Haan, 2001; Truckenbrodt, 2006; Wiklund, 2010; Heycock, 2017; Sode & Truckenbrodt, 2018; Djärv, 2019a; among others). (5a) shows that V2 is available in embedded clauses without an overt complementizer. The examples in (5) furthermore show that the configurations of embedded clauses (5a) and main clauses with V2 (5b) are similar.

(5) a. Peter sagt, [Maria ist in Saarbrücken]
Peter says [Maria is in Saarbrücken]
'Peter says that Maria is in Saarbrücken.'

b. Maria ist in Saarbrücken
Maria is in Saarbrücken
'Maria is in Saarbrücken.'

I adopt a wide-spread account of the syntactic structure of V2 and EV2. V2 languages like German are argued to always have a lexically realized C^0 element (Den Besten, 1983; Hulk & van Kemenade, 1995).[1] Given the complementary distribution of V2 and overt complementizers, as was mentioned above, V2 is taken to be a realization of obligatory V-to-C movement. V-to-C movement takes two steps: first, the verb moves from its base-generated position V^0 to the head of TP, after which it moves up further to C^0.[2] Second, a topic moves up to the specifier position of C^0 (Den Besten, 1983; Rizzi, 1996; Schwartz & Vikner, 1996).

[1]There are also V2 languages, like Yiddish and Icelandic, of which it is argued that V2 is the result of a lexically realized T^0 element Iatridou & Kroch, 1992. For the purposes of this thesis, I solely focus on V2 languages like German.

[2]See Travis 1984 and subsequent work on the Head Movement Constraint, which assumes that head movement targets all intervening heads as intermediate landing sites.

Figure 2.1 shows the structure of the V2 clause in (5a) and (5b). The verb in (2.1) moves from its base-generated position to C^0, and the topicalized constituent (in this case the subject) moves to the specifier of C^0.

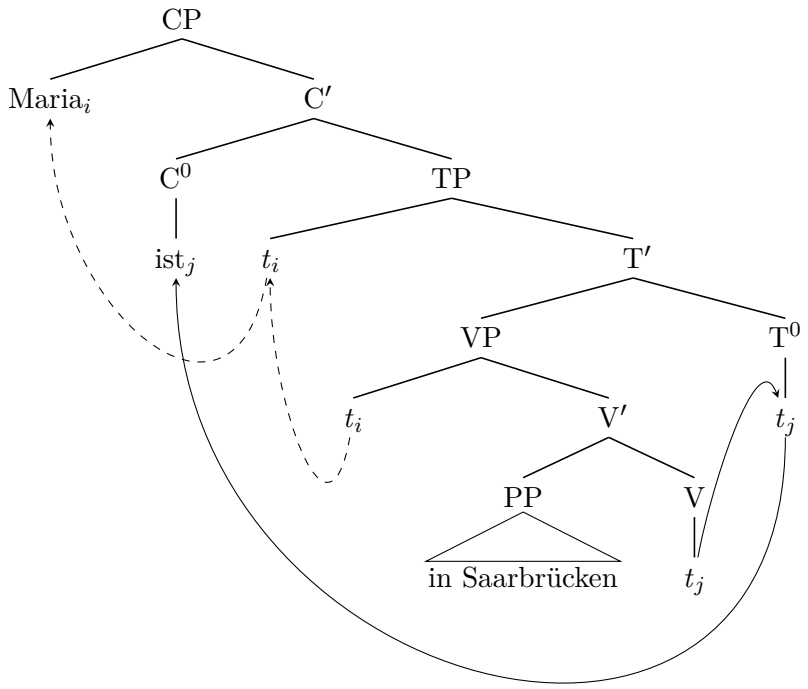

Figure 2.1: Syntactic configuration of examples (5a-b).

The structure in Figure 2.1 is the structure of German V2 and EV2 that I assume in this thesis. In what follows, I present empirical claims about the interpretation of V2 structures in German embedded clauses, and pose empirical questions that arise from those claims.

2.2 Interpreting EV2 Clauses I: Commitment to p

One of the central questions about EV2 clauses is which conditions they occur under.[3] EV2 clauses are not freely available under all embedding predicates, and their distribution is limited. As EV2 syntax is structurally parallel to main-clause V2, it is a recurring intuition that EV2 clauses have a main-clause flavored interpretation. This is believed to constrain their distribution. Based on the widely shared assumption that declarative (V2) main clauses

[3]In this discussion I will discuss EV2 in German, although for all proposals discussed in this chapter it has been argued that they apply cross-linguistically.

express commitment to the proposition, it has often been proposed that EV2 clauses convey commitment to p, the embedded proposition (Wechsler, 1991; Fabricius-Hansen, 1992; Gärtner, 2002; Truckenbrodt, 2006; Julien, 2015; Woods, 2016). For the purposes of this discussion, it is sufficient to define "commitment to p" as the belief that p is true.[4] There are three proposals that explore the interpretation of EV2 clauses with respect to commitment to p:

(6) a. Truckenbrodt (2006): EV2 clauses require that the subject of the embedding predicate is committed to p.

b. Woods (2016): EV2 clauses require that the speaker is committed to p.

c. Sode & Truckenbrodt (2018): Interpretation of EV2 clauses depends on verbal mood. Subjunctive mood requires that the subject of the embedding predicate is committed to p; indicative mood requires that the speaker is committed to p.

The following subsections address the empirical claims in (6a-c).

2.2.1 Matrix-subject commitment to p: Truckenbrodt (2006)

Truckenbrodt (2006) argues that EV2 complements require that the subject of the embedding predicate be committed to p. This idea has been adopted by others (e.g. Julien, 2015), but for current purposes I only discuss Truckenbrodt 2006 and the empirical predictions that ensue.

Truckenbrodt (2006) advances the idea that the interpretation of EV2 clauses interacts with the lexical semantics of the embedding predicate. An EV2 complement is felicitous only if it follows from the semantics of the embedding predicate that its subject commits to the propositional complement. This predicts that a verb like *glauben* 'to believe' allows for EV2 complementation, and we see in (7) that this prediction is borne out.

(7) Maria glaubt, Peter geht nach Hause
Maria believes Peter goes to home
'Maria believes that Peter is going home.' (Truckenbrodt, 2006, p. 278)

Truckenbrodt (2006) argues that verbs of saying (e.g. *sagen* 'to say' and *erwähnen* 'to mention') and manner of speech verbs (e.g. *flüstern* 'to whisper' and *schreien* 'to scream') "entail committing to a belief of p" (p.288). It is therefore expected that those predicates allow EV2 complements, which is indeed the case.

(8) Maria sagt / erwähnt / flüstert / schreit, Peter geht nach Hause
Maria says / mentions / whispers / screams Peter goes to home

[4]The notion of commitment is probably more complex, since it is possible to assert a proposition without committing to it, e.g. in the case of lies. See Searle 1975, Stalnaker 1978, Gunlogson 2008, Krifka 2014, Krifka 2015, and Woods 2016, among others, for more exhaustive discussions about the notion of commitment.

'Maria says/mentions/whispers/screams that Peter is going home.'

Truckenbrodt's proposal also makes predictions about when EV2 is *not* allowed. Firstly, when the embedding predicate is negated, the subject's commitment to p is negated. This means that matrix-clause negation should block the ability of embedding predicates to select EV2 complements, and (9) shows that this is borne out.

(9) * Hans glaubt nicht, Peter geht nach Hause
Hans believes NEG Peter goes to home
'Hans does not believe that Peter is going home.' (Truckenbrodt, 2006, p. 295)

Secondly, EV2 complements should be disallowed when the lexical semantics of the embedding predicate do not entail the subject's commitment to p. Truckenbrodt (2006) shows that for the verb *bezweiflen* 'to doubt' this is indeed the case.

(10) * Hans bezweifelt, Peter geht nach Hause
Hans doubts Peter goes to home
'Hans doubts that Peter is going home.'

So far, Truckenbrodt's claims make clear predictions and they are borne out. However, his proposal appears to under-generalize, as Truckenbrodt (2006) notes himself. There are two types of embedding predicates that allow EV2 for which his current proposal cannot account. The first type are verbs of dreaming (*traumen*) and imagining (*sich vorstellen*). These embedding predicates allow EV2 complements, yet they do not require the matrix subject to be committed to p. This is illustrated in (11).

(11) Peter hat geträumt / sich vorgestellt, er besitzt ein Einhorn
Peter has dreamt / himself imagined he owns a unicorn
'Peter dreamt/imagined that he owns a unicorn.'

It is unlikely that (11) is interpreted such that Peter truly believes that he owns a unicorn, and it follows that the subject does not need to commit to p. Thus, for verbs like 'to dream' and 'to imagine', the subject does not need to commit to p for EV2 complementation to be felicitous. To account for EV2 under predicates of dreaming and imagining, Truckenbrodt (2006) argues that the notion of commitment to p can be extended. Specifically, he argues that subject commitment to p *within* a dream or imagination satisfies the requirement of committing to p such that EV2 complementation is allowed.

The second type of embedding predicates that allow EV2, but that do not require subject commitment to p, are verbs like *hoffen* 'to hope' and *fürchten* 'to fear'. While these predicates allow EV2 complements, they do not entail matrix-subject commitment to p. Truckenbrodt (2006) acknowledges this, but claims that these predicates still express some commitment to p, although to a lesser extent. He "relaxes" the requirement of commitment to p and argues that this weaker commitment to p suffices for allowing EV2. To summarize,

Truckenbrodt (2006) stipulates that for the two types of embedding predicates discussed above, there are additional 'commitment contexts' (e.g. in dreams and the imagination) or that commitment is gradient and that even a little bit of commitment to p (e.g. for *to hope* and *to fear*) suffices to allow EV2 complements. In this way, Truckenbrodt (2006) presents an analysis to explain when and why EV2 complementation is allowed.

That said, Djärv (2019a) presents examples that are predicted to allow EV2 under Truckenbrodt's analysis, but actually do not. Truckenbrodt (2006) uses *bezweiflen* 'to doubt' to argue that if the matrix subject does not commit to p, EV2 is ruled out. This was shown in (10). Under Truckenbrodt's (2006) proposal, we therefore predict that predicates that clearly presuppose subject commitment to p (e.g. *akzeptieren* 'to accept' and *zugeben* 'to admit') allow EV2 complements. Contrary to this expectation, however, EV2 complements embedded under these predicates are ungrammatical, illustrated in (12).

(12) * Hans akzeptiert / gibt zu, Peter geht nach Hause
Hans accepts / admits Peter goes to home
'Hans accepts/admits that Peter is going home.'

The ungrammaticality of (12) shows that Truckenbrodt's (2006) proposal overgeneralizes. Djärv (2019a) notes that the verb *bezweiflen* 'to doubt', is a response-stance predicate. Similarly, the verbs *akzeptieren* 'to accept' and *zugeben* 'to admit' are response-stance predicates. A response-stance predicate takes a (propositional) complement that refers to a familiar idea in the context (Cattell, 1978). Typical EV2-allowing embedding predicates such as 'to say' and 'to believe' differ from response-stance verbs in this respect: their complements do not necessarily refer to familiar ideas in the context. Neither response-stance predicates that entail commitment to p nor ones that negate commitment to p allow EV2. Therefore, the question arises whether something other than commitment to p drives EV2. I return to this question in Section 2.3. The following subsections address alternative accounts of EV2 that take speaker commitment to p, rather than matrix-subject commitment to p, to be the interpretation of EV2 complements.

2.2.2 Generalized speaker commitment to p: Woods (2016)

Another proposal of how EV2 complements are interpreted comes from Woods (2016). She follows Truckenbrodt's proposal that EV2 requires that the matrix subject be committed to p, but additionally argues that EV2 clauses are interpreted as speaker commitments:

> "In German, all attitudinal, epistemic and expressive elements in EV2 are evaluated with respect to the speaker, not the matrix subject, and the proposition expressed in the embedded clause is also interpreted as being asserted by the speaker."
>
> (Woods 2016, qtd. in Djärv 2019a, p. 54)

In other words, Woods (2016) argues that if an embedding predicate selects an EV2 complement, the embedded proposition is interpreted as a speaker assertion. This requires that the speaker commits to p. Let's illustrate this with an example:

(13) Maria sagte, Peter ist glücklich
Maria said Peter is happy
'Maria said that Peter is happy.' (Woods, 2016, p. 193)

According to Woods (2016), the embedded proposition in (13) is interpreted such that not only Maria (the subject), but also the speaker believes that Peter is happy. Woods categorically generalizes over EV2 clauses, such that *all* EV2 complements are interpreted as the speaker having committed to p.

While Woods (2016) makes a strong generalization about how EV2 complements are interpreted, she fails to present substantial empirical support. In fact, she provides no independent evidence that supports this claim. Section 2.3, where I discuss Djärv (2019a), shows that Woods's empirical claim is not borne out by large-scale experimental studies.[5]

2.2.3 Conditioned speaker commitment to p: Sode & Truckenbrodt (2018)

Sode & Truckenbrodt (2018) also argue that EV2 clauses are interpreted as speaker commitments to p, but that this commitment is conditioned by the mood of the finite verb in the embedded clause. The speaker commits to p depending on whether the finite verb in the the embedded clause has indicative or subjunctive morphology. Subjunctive morphology in German is an inflection on the finite verb that typically occurs embedded under verbs of saying and believing, and it is used in contexts where the subject of the embedded predicate is *not* first person.[6]

For EV2 clauses, Sode & Truckenbrodt (2018) claim that the following generalization holds: if the finite verb of the embedded clause has indicative mood, it is required that both the matrix-clause subject and the speaker are committed to p. If the finite verb has subjunctive mood, it is required that only the subject of the embedding predicate is committed to p. This is outlined in (14).

[5]Woods (2016) primarily focuses on other main-clause phenomena, such as Embedded Inverted Questions. She provides empirical evidence for her claims related to those clauses, and seems to deduce her claim about EV2 clauses from there. With that being said, independent support for her proposal of EV2 complements is needed.

[6]This is a simplified description of the subjunctive, but it suffices for the purposes of this discussion. There is a present subjunctive (Konjunktiv I) and a past subjunctive (Konjunktiv II), but in reportive constructions they serve identical purposes (Fabricius-Hansen & Sæbø, 2004). One feature of the subjunctive is that it is believed to have different effects on the temporal interpretation of propositions, compared to indicatives (Abusch, 1988; Farkas, 1992; von Stechow, 1995, 2002; Fabricius-Hansen & Sæbø, 2004; Giorgi, 2009, among others). As this is not relevant for the purposes of this discussion, I put this aside. For a more exhaustive discussion of the subjunctive in German, see Fabricius-Hansen & Sæbø 2004.

(14) a. EV2 Indicative — Attitude holder & speaker believe p

b. EV2 Subjunctive — Attitude holder believes p

Sode & Truckenbrodt derive their claims through paradigmatic distinctions between embedding predicates with first- and third-person subjects. EV2 embedding under predicates with a third-person matrix subject is only felicitous when the finite verb in the embedded clause has subjunctive morphology. EV2 embedding under predicates with a first-person matrix subject is only felicitous when the finite verb in the embedded clause has indicative morphology. These paradigmatic distinctions are illustrated in (15a-d). In their verb-final configurations, the indicative and subjunctive mood are both grammatical and have non-distinct interpretations (15e).[7]

(15) a. Was Saskia glaubt, ist, Maria sei in Saarbrücken
What Saskia believes, is, Maria be.SUBJ. in Saarbrücken
'What Saskia believes is that Maria is in Saarbrücken.'

b. ?? Was Saskia glaubt, ist, Maria ist in Saarbrücken
What Saskia believes, is, Maria is.IND. in Saarbrücken
'What Saskia believes is that Maria is in Saarbrücken.'

c. * Was ich glaube, ist, Maria sei in Saarbrücken.
What I believe, is, Maria be.SUBJ. in Saarbrücken
'What I believe is that Maria is in Saarbrücken.'

d. Was ich glaube, ist, Maria ist in Saarbrücken.
What I believe, is, Maria is.IND. in Saarbrücken
'What I believe is that Maria is in Saarbrücken.'

e. Was Saskia glaubt, ist, dass Maria in Saarbrücken sei/ist
What Saskia believes, is, that Maria in Saarbrücken be.SUBJ./is.IND.
'What Saskia believes is that Maria is in Saarbrücken.'

(Sode & Truckenbrodt, 2018, p. 117)

Sode & Truckenbrodt (2018) argue that since the EV2 indicative is only felicitous with a first-person matrix subject, indicative morphology in EV2 clauses is speaker-oriented. Since subjunctive morphology on the finite EV2 verb is only felicitous with a third-person matrix subject, they suggest that subjunctive morphology is not speaker-oriented. Building on their suggestion of speaker/non-speaker oriented verbal morphology, Sode & Truckenbrodt (2018) argue that EV2 clauses with an indicative verb give rise to a speaker-commitment interpretation because the verbal mood is speaker-oriented. Since the subjunctive is not

[7]The subjunctive is only available with third person matrix-clause subjects. Therefore, while the indicative and subjunctive have non-distinct interpretations in verb-final configurations when the matrix-clause subject is third person, a verb-final configuration with a first person matrix-clause subject and subjunctive mood is still infelicitous.

speaker-oriented, EV2 clauses with subjunctive morphology give rise to interpretations of the matrix-subject committing to p. Importantly, they argue that this distinction only applies in EV2-clauses. Therefore, it is not an independent element of verbal mood, Sode & Truckenbrodt (2018) argue, but crucially the result of an interaction between EV2 and verbal mood.

While Sode & Truckenbrodt (2018) may make the correct empirical claims, their methodology of deductive reasoning raises some questions. The empirical justification for their main claim about speaker assertion follows indirectly from the paradigm they present. They deduce their argument based on how felicitous EV2 complementation is with either subjunctive or indicative morphology, and with either first- or third-person matrix-clause subjects. If Sode & Truckenbrodt (2018) are indeed correct about the interpretations of EV2 clauses, we should be able to elicit this in an explicit way. Experiment 2 in Chapter 4 sets out to test the empirical claims put forward by Sode & Truckenbrodt.[8]

2.3 Interpreting EV2 Clauses II: Discourse Novelty

An alternative analysis of EV2 has been presented in Caplan & Djärv 2019 and Djärv 2019a, who take an information-structure approach to EV2. They argue that the availability and interpretation of EV2 clauses are associated with the status of the embedded proposition in the discourse. Caplan & Djärv (2019) and Djärv (2019a) argue that EV2 clauses must be interpreted as constituting discourse-new information, and that EV2 is ungrammatical under embedding predicates that presuppose that their complement is given in the discourse context. They furthermore propose that when EV2 is embedded under a verb that does not presuppose whether its complement is new or given, the EV2 proposition must nonetheless be new.

In Section 2.3.1, I present Djärv's experimental evidence against the commitment-based approaches. This is followed by a discussion of her alternative proposal and the experimental studies conducted in support of it in Section 2.3.2. I discuss the evidence that Djärv (2019a) presents for her alternative proposal, and how this proposal's predictions differ from those of commitment-based accounts.

[8]The discussion in the next section on Caplan & Djärv 2019 and Djärv 2019a shows convincing evidence against the premise of speaker-commitment accounts, such as those outlined by Woods (2016) and Sode & Truckenbrodt (2018). The experiment that tested the claims in Sode & Truckenbrodt 2018, however, was conceived and conducted before the works by Caplan & Djärv 2019 and Djärv 2019a were accessible. Furthermore, while Djärv (2019a) argues against speaker-commitment accounts, she does not specifically address a possible interaction between speaker commitment and verbal mood, and in this respect Experiment 2 provides additional evidence that supports the conclusions in Djärv 2019a.

2.3.1 Against Commitment to p

Djärv (2019a) provides evidence against the claims that EV2 clauses must yield a matrix-subject or speaker-commitment interpretation.

A recurring intuition is that the speaker-commitment interpretation of EV2 clauses stems from the similar syntax of main-clause and embedded-clause V2 structures. It is widely assumed that main-clauses give rise to a speaker-commitment interpretation, and it has been argued that EV2 clauses give rise to the same interpretation. However, Gärtner & Michaelis (2010) bring up evidence against the claim that declarative main clauses give rise to a speaker-commitment interpretation:

(16) In Berlin schneit es oder in Potsdam scheint die Sonne
In Berlin snows it or in Potsdam shines the sun
'It is snowing in Berlin or the sun is shining in Potsdam.'
(Gärtner & Michaelis, 2010, quoted in Djärv, 2019a, p. 58)

Gärtner & Michaelis (2010) argue that in cases like (16), the speaker of the utterance need not be committed to either of the disjuncts, but V2 is obligatory. If Gärtner & Michaelis (2010) are correct, this would spell problems for the commitment-based approaches. If main clauses need not be interpreted as speaker commitments to p, a commitment-to-p reading cannot extend to embedded V2 structures. The example in (16) raises questions about whether the main-clause flavored interpretation of EV2 clauses can actually be commitment.

Furthermore, Djärv (2019a) provides direct evidence against speaker-commitment to p interpretations of EV2 clauses – as proposed by Woods 2016 and Sode & Truckenbrodt 2018 – as well as against matrix-subject commitment to p licensing EV2, as proposed by Truckenbrodt 2006. Djärv's first experiment explored which embedding predicates allow EV2 complements. This provides insight into whether all verbs that entail matrix-subject commitment to p allow EV2, as argued by Truckenbrodt 2006.

For her stimuli, Djärv (2019a) used embedding predicates from five classes, including response-stance predicates. She also manipulated the polarity of these predicates, in order to see whether negation blocks EV2 complementation. The predicate types and corresponding examples are shown in Table 2.1.[9]

Based on Truckenbrodts (2006) account, the predictions were as follows: The speech-act, doxastic and non-factive verbs were all expected to score well for EV2 naturalness, since they express or entail matrix-subject commitment to p. The response-stance predicates are of special interest. *Akzeptieren* 'to accept' is expected to score better than *bezweiflen* 'to doubt', since it entails matrix-subject commitment to p. Furthermore, negated predicates of all types were expected to score poorly for EV2, since negation blocks commitment to p.

The z-scored results from Djärv (2019a) are presented in Figure 2.2:

[9] All of Djärv's 2019a experimental stimuli are available online at `https://osf.io/nsm89/`.

Predicate Type	Examples	
Speech Act Verbs	*sagen, behaupten*	to say, to claim
Doxastic Non-Factives	*glauben, meinen*	to believe, to think
Response Verbs	*bezweiflen, akzeptieren*	to doubt, to accept
Emotive Factives	*hassen, lieben*	to hate, to love
Doxastic Factives	*herausfinden, wissen*	to discover, to know

Table 2.1: Matrix Predicate Types tested by Djärv (2019a)

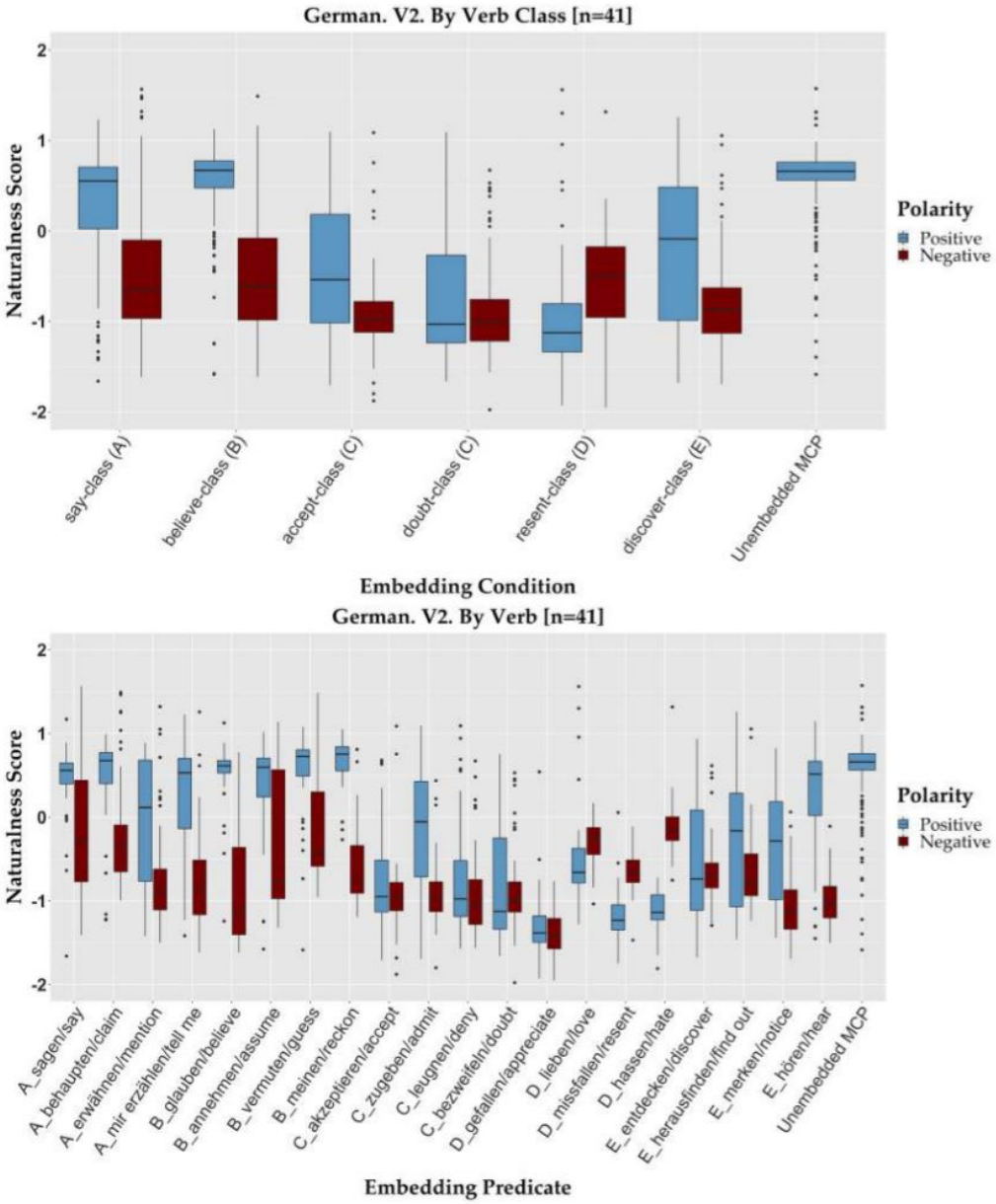

Figure 2.2: Results of EV2 acceptability study in Djärv 2019a, p. 170

The results only partially bear out Truckenbrodt's claims: EV2 complements are judged unnatural for all the response-stance predicates (Class C in Figure 2.2), including the ones that entail matrix-subject commitment to p. This shows that Truckenbrodt's proposal overgenerates, since he argues that all embedding predicates that entail matrix-subject commitment to p allow EV2.

To test whether the empirical claims made by Woods (2016) are borne out, Djärv (2019a) performed an experiment in which she tested whether the speaker of an utterance with EV2 indeed commits to the embedded proposition.[10] The experiment was in German and included EV2 complements; for convenience, an example of Djärv's stimuli is given in English:

(17) a. 'Imagine that you are at a party, and you overhear a conversation between two of your friends, Sally and Rory. Sally says:' (context)

b. " ...however, Sophia says that Tammy doesn't like the landlady." (sentence)

c. As far as Sally is concerned, Tammy doesn't like the landlady. (target)

(Djärv, 2019a, p. 123)

Participants were asked to rate the likelihood of the speaker's commitment to p on a 9-point likert scale, with 1 denying and 9 affirming the speaker's commitment to p. Based on the claim that EV2 clauses give rise to a speaker-commitment interpretation (Woods, 2016; Sode & Truckenbrodt, 2018), the predictions were that EV2 stimuli would score high for speaker-commitment to p. In the case of (17), participants were therefore expected to give a high rating such that they believe that Sally is committed to the proposition that Tammy does not like the landlady. Figure 2.3 shows that these predictions are not borne out.

[10]To some extent, this experiment also tests whether Sode & Truckenbrodt (2018) make the correct claims, by testing whether there is ever a speaker-commitment interpretation of p. However, the interaction with verbal mood was not addressed.

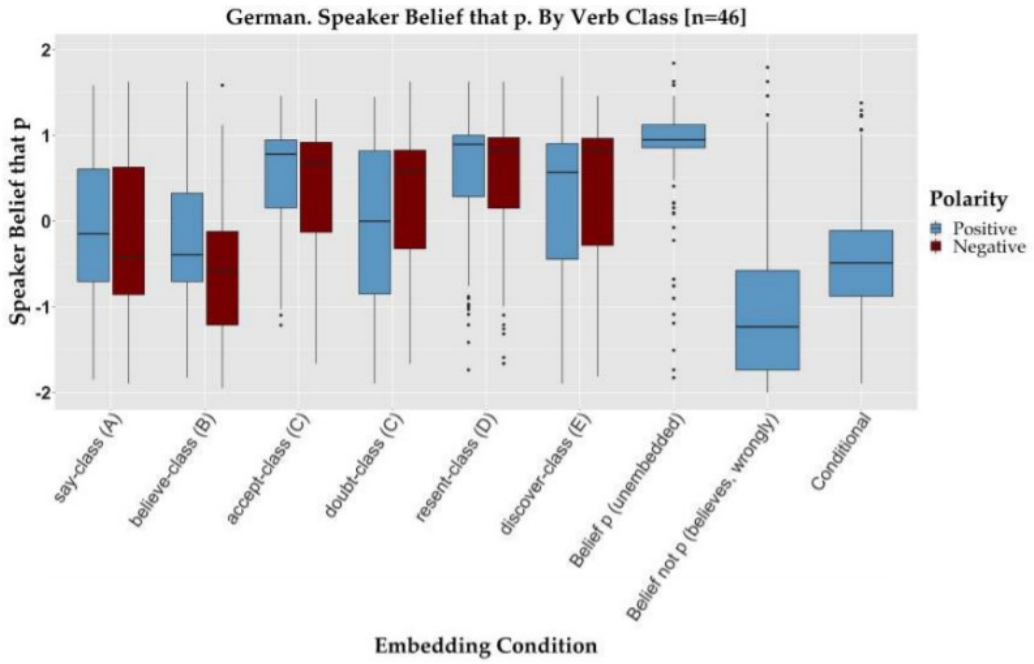

Figure 2.3: z-scores of EV2 Speaker-Commitment Study in Djärv, 2019a, p. 159

The results in Figure 2.3 show that for EV2 complements under verbs of saying and believing, the speaker need not believe the embedded proposition. For factive verbs, the speaker is believed to commit to p – this is unsurprising: factive predicates presuppose that their complement is true. Consequently, the speaker needs to be committed to p due to the semantics of the embedding predicate, which is independent of the embedded word order.[11] Overall, the results show that the empirical claims Woods (2016) put forward are not borne out – i.e. EV2 does not require the interpretation that the speaker commits to p.[12]

Altogether, Djärv (2019a) presents substantial evidence against commitment-based approaches towards EV2 clauses. Through large-scale experimental methods, Djärv (2019a) tested the predictions put forward in Truckenbrodt 2006 and Woods 2016. We see that Truckenbrodt (2006) indeed over-generates with his proposal that main-clause subject commitment to p licenses EV2. The claims put forward in Woods 2016 are shown to be empirically unfounded, as Djärv (2019a) showed that EV2 clauses are not interpreted as speaker commitments to p.

[11]In effect, Djärv (2019a) tested whether EV2 complements receive a speaker-commitment interpretation of p under verbs that do not allow EV2.

[12]The results are also unexpected under Sode & Truckenbrodt (2018), since all target stimuli had indicative morphology in the complement clause. However, Djärv (2019a) did not test whether there was a different interpretation with respect to speaker-commitment between subjunctive and indicative morphology.

The following section discusses Djärv's (2019a) alternative discourse-pragmatic approach, which makes different predictions about (i) how EV2 clauses are interpreted, and (ii) when they are expected to be felicitous.

2.3.2 EV2 Constituting Discourse-New Information: Djärv (2019a)

Djärv (2019a) and Caplan & Djärv (2019) propose an alternative analysis of EV2 clauses, arguing that they must be interpreted as discourse-new information. As a consequence, EV2 is ruled out when the embedding predicate presupposes that its complement constitutes given information. To diagnose whether an embedding predicate presupposes that its complement is given, Djärv (2019a) introduces the guess-what test. The idea behind the test is as follows: if a speaker exclaims "Guess what!" or "You know what?" out of the blue, the hearer will expect to hear new information. What follows is that if the embedding predicate in the main clause presupposes that its complement is given, the utterance should be degraded. The examples in (18-19) illustrate that the felicity of an utterance following "Guess what!" depends on its main clause predicate.

(18) [Uttered out of the blue:] Guess what — / You know what —
   a. John said [$_{P}$ that Bill and Anna broke up]
   b. John discovered [$_{P}$ that Bill and Anna broke up]

(19) [Uttered out of the blue:] Guess what — / You know what —
   a. # John hates [$_{P}$ that Bill and Anna broke up]
   b. # John accepts [$_{P}$ that Bill and Anna broke up] (Djärv, 2019a, p. 98)

The *guess-what* test illustrates that certain predicates are sensitive to whether their propositional complement is new or given in the context. Furthermore, we see that the response-stance predicate *accept* is degraded when the hearer expects the complement proposition to express new information.

Djärv (2019a) observes that the German counterparts of the embedding predicates that are degraded following "Guess what!" do not allow EV2 complementation (e.g. *hassen* 'to hate', *akzeptieren* 'to accept'). By contrast, the German counterparts of the embedding predicates that are felicitous continuations of "Guess what!" do allow EV2 complementation (e.g. *sagen* 'to say', *entdecken* 'to discover').

(20) Hans sagt / entdeckt / *hasst / *akzeptiert, Peter geht nach Hause
   Hans says / discovers / hates / accepts, Peter goes to home
   'Hans says/discovers/hates/accepts hat that Peter is going home.'

The contrasts in (20) suggest that Djärv (2019a) makes correct predictions, namely that embedding predicates that presuppose that their complement is given disallow EV2.

Table 2.2 shows which predicates (dis)allow EV2 complements, and Djärv (2019a) designed a second experiment to test which of these predicates presuppose that their complements are given.

Predicate Type	**Examples**		**Allows EV2**
Speech Act Verbs	*sagen, behaupten*	to say, to claim	✓
Doxastic Non-Factives	*glauben, meinen*	to believe, to think	✓
Response Verbs	*bezweiflen, akzeptieren*	to doubt, to accept	✗
Emotive Factives	*hassen, lieben*	to hate, to love	✗
Doxastic Factives	*herausfinden, wissen*	to discover, to know	✓
Negated Predicates	*nicht V*	not V	✗

Table 2.2: Matrix Predicate Types and EV2 selection

The experiment elicited whether speakers expect if the propositional content of the complement is new or familiar in the context. The predictions were that complements of embedding predicates that do not allow EV2 complements would give rise to a high expectancy of being familiar in the discourse. Complements of predicates that allow EV2 complementation were expected to have a low expectancy of givenness. All negated predicates were expected to receive a high score for givenness, following works by Kiparsky & Kiparsky 1968 and others, in which it is argued that negation of a predicate presupposes that its complement is given.

Djärv (2019a) tested canonical verb-final embedded clauses under multiple predicates of each predicate type, as well as negated embedding predicates. As such, Djärv (2019a) only elicited the influence of the lexical semantics of the embedding predicate on the givenness of the complement p. Whether or not EV2 clauses are required to be discourse-new was not tested.

Participants were asked how likely it was that the content of the embedded clause has been discussed before by the discourse participants. Participants rated the likelihood on a 9-point scale with marked ends, where 1 stood for 'very likely', and 9 for 'very unlikely.' Djärv (2019a) conducted her experiment in German. An English version of an example item from Djärv 2019a is given in (21):

(21) a. 'Imagine that you are at a party, and you overhear a conversation between two of your friends, Sally and Rory. Rory says:' (context)

b. "...however, Sophia maintains that Tammy doesn't like the landlady." (sentence)

c. It is likely that Sally and Rory have previously talked about Tammy not liking the landlady. (target)

(Djärv, 2019a, p. 123)

The results in Figure 2.4 show that Djärv's predictions are borne out:

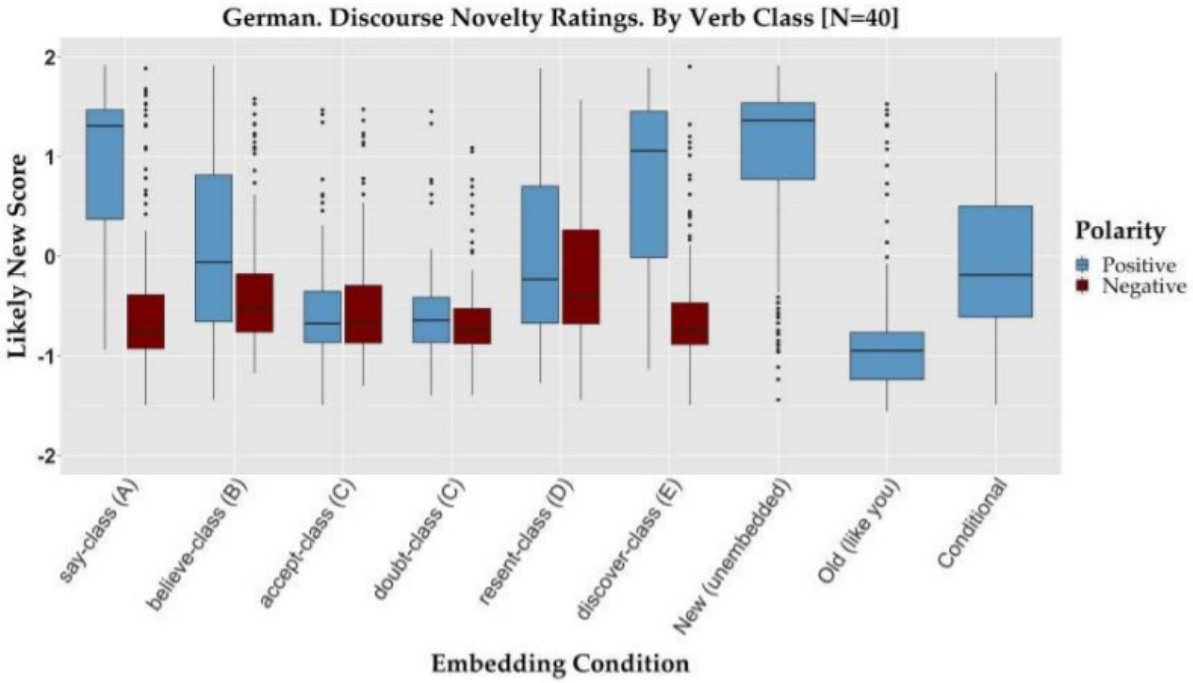

Figure 2.4: Results of Discourse Familiarity Study in Djärv, 2019a, p. 164

The complements of speech act (A), doxastic non-factive (B), and doxastic factive (E) predicates were all rated high, which translates into a high likelihood of being new in the discourse. The complements of response-stance (C) and emotive factive verbs (D), as well as negated predicates scored low, which means that they were expected to be discourse-old information. These results strengthen Djärv's claim that if an embedding predicate or negation presupposes givenness, EV2 is blocked.

Further support for this view comes from Caplan & Djärv (2019), who conducted a large-scale corpus study of Swedish EV2. They analyzed embedded clauses from three different internet forums: Familjeliv-känsliga (family-oriented discussion forum; 5,971,907 sentences), Flashback-Politik (online forum for political discussion; 2,841,872 sentences), and Rd-bet (government texts; 372,054 sentences) (Caplan & Djärv, 2019, p. 25). About 5% of the complements in their sample had an EV2 structure. They found that the distribution of EV2 was influenced by two factors. First of all, the distribution of EV2 clauses correlated with the lexical semantics of the embedding predicate – i.e. whether it presupposes that p is given. Swedish and German thus show similar restrictions on EV2 embedding under predicates that presuppose that p is discourse-old. Second of all, they found that EV2 clauses were only used when p constituted discourse-new information. Based on this, they suggest that EV2 complementation is not only conditioned by the lexical semantics of the embedding predicate, but also by the discourse status of the propositional content.

To sum up, Djärv (2019a) and Caplan & Djärv (2019) found that the lexical semantics of the predicate is responsible for licensing EV2 such that embedding predicates that presuppose givenness of p disallow EV2. They furthermore found that, in Swedish, EV2 complements were only used when they convey discourse-new information. Moreover, Djärv (2019a) found that predicates that allow EV2 give rise to a high expectancy of discourse-new complements. This has led to the following hypothesis about the interpretation and availability of EV2 complements (an adapted version from Caplan & Djärv, 2019, p. 28), in (22).

(22) a. EV2-clauses have some interpretive effect. The distribution or use of this interpretive effect is influenced both by the meaning of the embedding predicate, and the type of discourse context in which the sentence is uttered.

b. The proposition denoted by a EV2 clause is interpreted as constituting discourse-new information.

(Djärv, 2019a, p. 96)

The hypothesis in (22) sets out two conditions for when EV2 is allowed. First, the distribution of EV2 clauses is restricted by the type of embedding predicate. Embedding predicates that presuppose that their complements are discourse-old do not allow EV2 complements. Second, it is argued that EV2 clauses denote discourse-new information and Caplan & Djärv (2019) explicitly claim that "EV2 is taken not to be licensed in contexts where the embedded proposition is discourse-old information" (p.29). Together, the lexical semantics of the embedding predicate and the discourse status of p control whether p is licensed – according to Djärv 2019a and Caplan & Djärv 2019. However, Djärv (2019a) and Caplan & Djärv (2019) have not explicitly tested the second condition. Djärv (2019a) only found that EV2 is blocked under embedding predicates that presuppose that p is given. It follows that complements of these embedding predicates constitute discourse-old information. In this respect, it is true that embedding predicates that presuppose givenness (i) take complements that are discourse old, and (ii) cannot take EV2 complements. Djärv (2019a) and Caplan & Djärv (2019) thus argue that complements that are discourse-old may not have EV2. However, it is not clear that if an embedding predicate allows EV2, its complement must be new in order to be felicitous. Djärv (2019a) and Caplan & Djärv (2019) propose this but this has not been tested.

The corpus data in Caplan & Djärv 2019 showed that EV2 clauses typically denote discourse-new information, and this usage data suggests that there is a correlation between discourse-novelty and EV2, or discourse-familiarity and blocking of EV2. Nevertheless, this only provides indirect evidence in favor of their proposal, yet it does not provide clear insight in whether discourse-old EV2 clauses are ruled out. Usage data provides insights in the use of EV2 in context, but it does not clearly set boundaries of grammaticality.

Altogether, Caplan & Djärv (2019) and Djärv (2019a) introduce a new proposal in order to account for the distribution of EV2 complements. They argue that EV2 clauses constitute discourse-new information, and that as such EV2 complementation is ruled out (i) if the embedding predicate presupposes givenness or (ii) if the propositional content of the embedded clause is discourse-old information. However, they do not provide evidence of EV2 being blocked when it occurs embedded under a EV2-allowing predicate (e.g. *say, believe*) and denotes discourse-old information. In this respect, the generalizations by Caplan & Djärv 2019 and Djärv 2019a make strong predictions, but have not all been tested. The first experiment in Chapter 3 addresses this.

2.4 Chapter Summary & Research Questions

This chapter has provided background on two leading hypotheses for what underlies the distribution of EV2 clauses. Section 2.2 discussed the commitment-based approaches of Truckenbrodt 2006, Woods 2016, and Sode & Truckenbrodt 2018. Truckenbrodt (2006) argues that EV2 clauses are interpreted as a "commitment to a belief" (p. 300) by the subject of the embedding predicate. Djärv (2019a) shows that this analysis over-generates and predicts that response-stance predicates like *akzeptieren* 'to accept' allow EV2 complements – yet they do not. Woods (2016) claims that EV2 clauses are interpreted as speaker commitments to p. Notably, she does not provide independent evidence in support of this claim; Djärv (2019a) tested Woods's claims and found that EV2 clauses do not give rise to a speaker-commitment interpretation of p. This same evidence is problematic for Sode & Truckenbrodt 2018, who also argue that EV2 clauses are interpreted as speaker commitments to p when the embedded clause has indicative morphology. Nonetheless, while Djärv (2019a) found no evidence of speaker commitment to p, she did not test whether the degree of commitment to p differs depending on the verbal mood in the embedded clause. This question will be addressed in Chapter 4.

Caplan & Djärv (2019) and Djärv (2019a) introduce a different account of the distribution of EV2 clauses. They take a discourse-pragmatic approach and argue that EV2 clauses are interpreted as constituting discourse-new information. As a consequence, they argue, EV2 is blocked under predicates that presuppose that their complement is discourse-old – i.e. given. Furthermore, they argue that EV2 clauses are not acceptable if the embedded proposition itself constitutes discourse-old information, regardless of the predicate it is embedded under. They provide evidence for the claim that EV2 is blocked under predicates that presuppose that their complement is discourse-old. However, they do not provide evidence that EV2 is ruled out when the EV2 complement itself is given while embedded under an EV2-allowing predicate. Whether this empirical claim is in fact borne out remains unclear, and this will be tested in Chapter 3.

Based on the empirical questions raised in the literature discussion, the next chapters report experimental studies that attempt to answer the two following questions:

(23) i. Under verbs that generally allow EV2 (e.g. *say*), is EV2 still possible if the embedded proposition is given in the discourse?

ii. Is there a different degree of speaker commitment to p between EV2 clauses with indicative and subjunctive morphology on the finite verb?

Chapter 3

Experiment 1: EV2 Clauses and the Discourse Status of p

This experiment investigated the naturalness of EV2 clauses in contexts where the embedded proposition is either discourse-new or discourse-old. The goal of this experiment was to determine whether under verbs that generally allow EV2 (e.g. *say*), EV2 is still possible if the embedded proposition is given in the discourse. An internet-based judgment task was conducted with native speakers of German. The test sentences consisted of embedded clauses with V2 and VF structures, where the embedded proposition was either new or had been given in a preceding context sentence. The embedding predicates that were used in the experiment in principle allow either discourse-old or discourse-new complements.

As was discussed in Chapter 2, Caplan & Djärv (2019) and Djärv (2019a) suggest that EV2 embedding is not felicitous if the embedded proposition is discourse-old, even though the embedding predicate itself can select both discourse-old and discourse-new complements. This has not been explicitly tested to date. If their hypothesis is correct, we expect EV2 clauses with discourse-old information to be rated as less natural than EV2 clauses with discourse-new information. Since verb-final word order is canonical and arguably independent of discourse status of p, EV2 complements with discourse-old information should also be rated less natural than EVF clauses.

3.1 Method

3.1.1 Participants

108 native German speakers (i.e. German nationality and grew up speaking German) participated in the study. The participants were recruited through Prolific and directed to the *PennController for Ibex* online experiment platform (Zehr & Schwartz, 2018). Each participant was asked to complete the experiment in one sitting at their own pace.

3.1.2 Design

The experiment had a 2x2 factorial design with the independent variables POSITION and DISCOURSE STATUS. Both variables were within-subjects factors: POSITION consisted of the levels *EV2* and *EVF*; DISCOURSE STATUS consisted of the levels *new* and *given*. This means that each item had two possible embedded word orders with two possible scenarios.

An additional set of control items was included in the experiment, with a single independent variable DISCOURSE STATUS. The control items were included to independently assess the sensitivity of the design.

3.1.3 Materials

Test items

The experiment consisted of 36 sets of test sentences, leading to a total of 144 test sentences. Three embedding predicates were used (*sagen* 'to say', *mir erzählen* 'to tell me', *erwähnen* 'to mention'), which are all verbs of saying. The choice to only use those three predicates was done for the following reasons. First, EV2 clauses embedded under verbs of saying were rated as natural (Djärv, 2019a). Second, using predicates that are from one class of verbs was expected to minimize spurious differences due to the relative naturalness of different embedding predicates. The three embedding predicates were distributed evenly over the test items – i.e. each embedding predicate was used in twelve sets of test sentences. An item set with all four conditions is given in (24).

(24) a. CONTEXT

Stell dir vor, du bist auf einer Party, und du hörst zufällig ein Gespräch zwischen zwei deiner Freunde, Frans und Anders. Du hörst Frans sagen:
Imagine that you're at a party, and you happen to overhear a conversation between two of your friends, Frans and Anders. You hear Frans say:
["Stan fährt morgen in den Urlaub, oder?]$_p$"
Stan is going on vacation tomorrow, right?
Anders antwortet:
Anders answers:

b. TARGET

i. "Ja, Cheryl hat gesagt, [er fährt morgen in den Urlaub.]$_p$"
Yes, Cheryl said that he is going on vacation tomorrow. (*EV2 given*)

ii. "Ja, Cheryl hat gesagt, [dass er morgen in den Urlaub fährt.]$_p$"
Yes, Cheryl said that he is going on vacation tomorrow. (*EVF given*)

iii. "Ja, Cheryl hat gesagt, [er freut sich darauf.]$_q$"
Yes, Cheryl said that he is looking forward to it. (*EV2 new*)

iv. "Ja, Cheryl hat gesagt, [dass er sich darauf freut.]$_q$"
Yes, Cheryl said that he is looking forward to it. (*EVF new*)

The context in (24a) was the same for all test items, except that the proposition introduced (marked with subscript p) was different for each item set. The first part of the context introduced two characters in a given discourse context, after which the proposition that recurred in the *given* condition was given by using a tag interrogative. The answer to the tag interrogative constituted the target sentence. The four conditions of the target are given in (24b). In the *given* condition, the proposition introduced in the context was repeated in the embedded proposition (marked with subscript p), with either a V2 (i.) or VF (ii.) word order. In the *new* condition, the embedded clause in the target sentence introduced a new proposition (marked with subscript q), again with either V2 (iii.) or VF (iv.) word order.

Control items

The control items were included to make sure that a judgment task is an appropriate measure to detect whether an utterance is suitable for a given discourse context. They were constructed in such a way that we predicted a strong difference between the *given* and *new* conditions. If no difference between the *given* and *new* conditions would be found within the control items, the design of the experiment is arguably not appropriate for the purposes of this study. An item set with the control condition is illustrated in (25):

(25) a. CONTEXT
Stell dir vor, du bist auf einer Party, und du hörst zufällig ein Gespräch zwischen zwei deiner Freunde, Frans und Anders. Du hörst Frans sagen:
Imagine that you're at a party, and you happen to overhear a conversation between two of your friends, Frans and Anders. You hear Frans say:
["Stan fährt morgen in den Urlaub, oder?]$_p$"
Stan is going on vacation tomorrow, right?
Anders antwortet:
Anders answers:

b. TARGET
i. "Ja, und [er fährt morgen in den Urlaub.]$_p$"
Yes, and he is going on vacation tomorrow (*given*)
ii. "Ja, und [er freut sich darauf.]$_q$"
Yes, and he is looking forward to it. (*new*)

The *given* condition was intended to cause redundancy: sentence-initial *und* 'and' gives rise to the expectation that new information is introduced following *und*, whereas the proposition is repeated instead. In the *new* condition, a new proposition was introduced after *und*.

It was predicted that the *new* condition would be rated to be significantly more natural than the *given* condition.

Filler items

54 fillers were presented alongside the test items, bringing the total of experimental items to 90. The fillers were divided into two types. The first type (*QUD+*) was such that the filler sentence was appropriately related to the Question Under Discussion (QUD) in the context. The other type (*QUD-*) was such that the filler sentence was unrelated to the QUD. An example of a *QUD+* filler item is shown in (26), and an example of a *QUD-* filler is given in (27):

(26) a. CONTEXT
Stell dir vor, du bist auf einer Party, und du hörst zufällig ein Gespräch zwischen zwei deiner Freunde, Frans und Anders. Du hörst Frans sagen:
Imagine that you're at a party, and you happen to overhear a conversation between two of your friends, Frans and Anders. You hear Frans say:
"Hat Alexandra etwas über das Konzert gesagt?"
Did Alexandra say anything about the concert?
Anders antwortet:
Anders answers:

b. TARGET
"Ja, Alexandra hat das letzte Konzert sehr gefallen."
Yes, Alexandra enjoyed the last concert a lot. (*QUD+*)

(27) a. CONTEXT
Stell dir vor, du bist auf einer Party, und du hörst zufällig ein Gespräch zwischen zwei deiner Freunde, Frans und Anders. Du hörst Frans sagen:
Imagine that you're at a party, and you happen to overhear a conversation between two of your friends, Frans and Anders. You hear Frans say:
"Hat Stella einen Kredit aufgenommen?"
Did Stella take out a loan?
Anders antwortet:
Anders answers:

b. TARGET
"Stella hat eine Torte gebacken."
Stella baked a pie. (*QUD-*)

The filler items were included to ensure that participants were appropriately executing the task, which was to judge the sentences in light of the preceding context. As such, *QUD-* fillers were expected to be rated as significantly less natural than *QUD+* fillers.

3.1.4 Procedure

The control item sets were incorporated as if they were a variable in the set of test items, but in the analysis they were treated as separate results. This resulted in what looked like six conditions per item sets. As such, the experimental items were distributed across six lists, following a Latin-Square design. Only one condition per item set was shown to the participants, so that participants would not see multiple target sentences from one item set. In other words, each participant saw 36 unique test and control sentences and 54 unique fillers. The fillers were identical in each list, so all participants were presented with the same filler items. The items were presented in a uniquely randomized order for each participant.

The study was deployed on Prolific, which distributed the study link to registered users that fit the demographic requirements for the experiment (i.e. native speaker of German, from Germany). The experiment was created and hosted using *PennController for Ibex* for internet-based experiments (Zehr & Schwartz, 2018).

At the beginning of the experiment, participants were asked to read the instructions carefully, and were presented with an example in order to familiarize them with (i) the task and (ii) the experiment's interface. Each item was presented in the center of the browser window. Underneath, the naturalness question was presented alongside a 7-point scale on which participants were asked to rate each sentence. The scale had marked ends, where 1 was 'very unnatural' and 7 'very natural'. A screenshot of an experimental trial is given in Figure 3.1 on the next page.

The experiment took approximately 20-25 minutes to complete. After completing the experiment, participants were redirected to Prolific and were compensated £1.67.

3.1.5 Predictions

The predictions for the filler items and control conditions were straightforward. Filler sentences with an answer that related to the QUD (*QUD+*) were expected to receive high ratings for naturalness. Filler sentences that were unrelated to the QUD (*QUD-*) were expected to receive low scores for naturalness. For the control items, control sentences with discourse-old propositions (*given*) were expected to score low, and control sentences with discourse-new information (*new*) were predicted to score high for naturalness.

The predictions for the target sentences were based on the hypothesis put forward in Djärv (2019a) and Caplan & Djärv (2019). They argue that EV2 embedding is not acceptable if the EV2 clause constitutes discoure-old information. Therefore, we expected an interaction effect between POSITION and DISCOURSE STATUS, driven by *EV2-given* scoring significantly lower than *EV2-new*. Since verb-final configurations are canonical, we expected those to score well in both the *new* and *given* condition. As such, it was expected that *EV2-given* would score lower than both *EVF* conditions.

Figure 3.1: Screenhot of a test trial, Experiment 1

3.2 Results

In analyzing the data, the naturalness ratings from each participant were z-score transformed using all items. The statistical tests reported are of the z-scores. All the results were analyzed in R (R Development Core Team, 2012). The results from one participant were removed prior to analysis. This participant reached out through Prolific with a comment about the experiment and showed substantial knowledge about linguistic theory. This was taken to be a confound and led to the removal of the participant.

3.2.1 Control items

The control conditions performed as expected. The control sentences in the *given* condition scored low for naturalness, and the control sentences in the *new* condition scored high for naturalness. The graph Figure 3.2 shows the average raw results and illustrates the difference between the two control conditions. The error bars indicate the standard error.

For the analysis, I used the `lme4` package to fit the model (Bates et al., 2012), and the `lmerTest` package to obtain p-values (Kuznetsova et al., 2014). I fit a maximal random-effects structure with random intercepts and random slopes for participants and items (Barr et al., 2013). The effect was such that *given* scored significantly lower for naturalness than *new* (β: 1.68, s.e. = .07, $p < .001$).

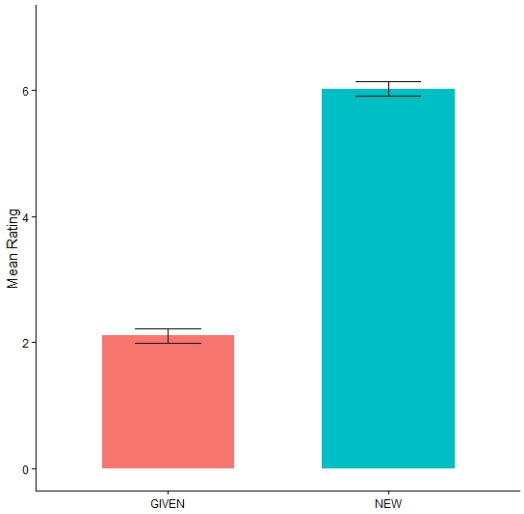

Figure 3.2: Mean ratings of the control conditions, Exp. 1

3.2.2 Filler items

The fillers performed as expected. The *QUD-* condition received low average scores, indicating that they were considered unnatural. The *QUD+* filler sentences were rated to be natural in the context. Moreover, the rating pattern was consistent across all participants, which indicates that all participants considered the preceding context in evaluating an item's naturalness. A plot of the average raw results is shown in Figure 3.3.

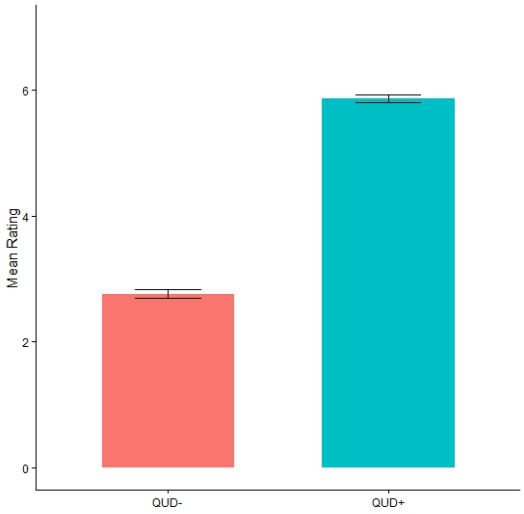

Figure 3.3: Mean ratings of the fillers, Exp. 1

For the analysis, I used the `lme4` package to fit the model (Bates et al., 2012), and the `lmerTest` package to obtain p-values (Kuznetsova et al., 2014). I fit a maximal random-

effects structure with random intercepts and random slopes for participants and items (Barr et al., 2013). The *QUD-* fillers scored significantly lower than the *QUD+* fillers (β: 1.33, s.e. = .12, $p < .001$).

3.2.3 Test items

The mean ratings of the raw results were high across conditions, as illustrated in Figure 3.4. The mean z-scores are shown in Figure 3.5, and an analysis of the z-scores indicates differences between conditions.

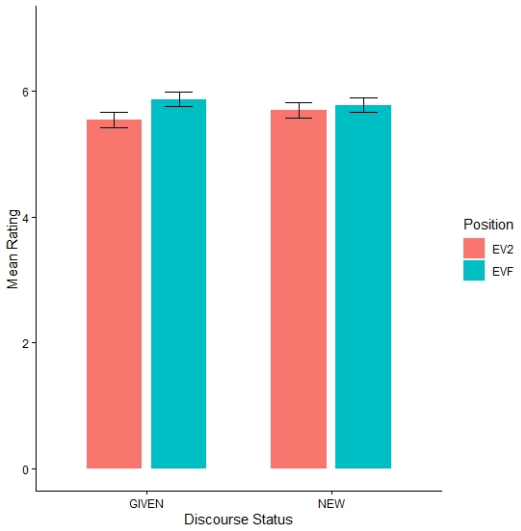

Figure 3.4: Mean ratings of the test conditions, Exp. 1

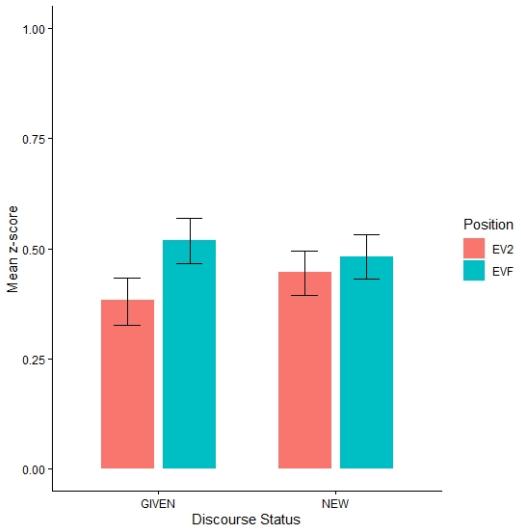

Figure 3.5: Mean z-scores of the test conditions, Exp. 1

To explore whether the differences we see in Figure 3.5 were significant, I analyzed the z-scores using he `lme4` package to fit the model (Bates et al., 2012), and the `lmerTest` package to obtain p-values (Kuznetsova et al., 2014). I fit a maximal random-effects structure with random intercepts and random slopes for participants and items, with the random correlation parameter for the interaction term removed for items, but included for participants (Barr et al., 2013). Moreover, the predictors were sum coded, with one of the levels coded as 1, and the other as -1. There was a main effect of POSITION: *EV2* scored significantly lower than *EVF* (β = -.04, s.e. = .01, p = .003). There was an interaction between POSITION and DISCOURSE STATUS (β = -.025, s.e. = .01, p = .02). Pairwise comparisons revealed that *EV2-given* scored significantly lower than *EVF-given* (β = -.14, s.e. = .03, $p < .001$). This difference probably drove the interaction. Contrary to what was predicted, *EV2-given* did not score significantly lower than *EV2-new* or *EVF-new*.

3.3 Discussion

This experiment tested wheter EV2 complements are acceptable if they constitute discourse-old information and are embedded under verbs that lexically license EV2 complements. Djärv (2019a) and Caplan & Djärv (2019) found that embedding predicates that presuppose givenness of p disallow EV2. They furthermore found that EV2 clauses typically constitute discourse-new information. Therefore, Caplan & Djärv (2019) and Djärv (2019a) hypothesize that EV2 is blocked if (i) the embedding predicate presupposes that p is discourse-old, and (ii) if p constitutes discourse-old information. Under this hypothesis, we predicted that EV2 clauses that are discourse-old (*EV2-given* condition) would score significantly lower for naturalness than the EV2 clauses denoting discourse-new information (*EV2-new* condition). These predictions were not borne out. Instead, we found that *EV2-given* scored statistically equally high as *EV2-new*, but that *EV2-given* scored lower than *EVF-given*. This raises two questions: First, what does the null-effect between *EV2-new* and *EV2-given* mean? Second, what does the difference between *EV2-given* and *EVF-given* mean.

The null effect between *EV2-new* and *EV2-given* is unexpected under Caplan & Djärv's proposal, and it shows that their predictions are not borne out. Moreover, Table 3.1 shows that the mean ratings for both conditions were high.

Condition	**Mean Rating**	**Mean z-score**
EV2-new	5.7	.45
EV2-given	5.6	.38

Table 3.1: Mean ratings and z-scores of *EV2* conditions, Exp. 1

The fact that the mean ratings for both conditions were high (on a 7-point scale) demonstrates that *EV2* is rated to be natural irrespective of whether the proposition constitutes

discourse-old or discourse-new information. This suggests that if an embedding predicate lexically licenses EV2 complements, these complements may be given in the discourse.

The control condition provides an additional perspective on discourse-status violations. The control items introduced a proposition with a sentence-initial *und* 'and'.[1] Sentence-initial *and* has been argued to possess a natural bias for ongoing discourse, in terms of discourse structure (Dorgeloh 2004, p. 1763). This means that a sentence-initial *and* has the function of continuing discourse, and as such a discourse-old proposition following sentence-initial *und* is infelicitous. The propositions in the *given* condition of the control items were therefore expected to be severely degraded, and this was borne out. For reference, the critical part of a control item in the *given* condition is shown in (28):

(28) a. CONTEXT
Peter ist aus dem Urlaub zurück, oder?
Peter is back from vacation, right?

b. TARGET

i. Ja, *und* er ist aus dem Urlaub zurück. (*given*)
Yes, *and* he is back from vacation.

ii. Ja, *und* es war super! (*new*)
Yes, and it was great!

Table 3.2 shows the mean ratings of the control conditions and demonstrates the severe penalty for the *given* condition.

Condition	**Mean Rating**	**Mean *z*-score**
CTRL-new	6.0	.59
CTRL-given	2.1	-1.1

Table 3.2: Mean ratings and *z*-scores of the control conditions, Exp. 1

Sentence-initial *and* requires discourse-new propositions. The violation constituted in the *CTRL-given* condition exhibits that violating a lexical licensing condition results in a severe penalty. No such penalties were observed for the *EV2-given* condition, which demonstrates that the discourse givenness that was tested for EV2 propositions is by no means similar to lexical licensing constraints like sentence-initial *and*.

In summary, the results of the *EV2-given* condition relative to *EV2-new* show that if embedding predicates license EV2 complementation, it does not matter whether the EV2 complement constitutes new or old information. Therefore, Caplan & Djärv's claim that EV2 clauses are blocked if they constitute discourse-old information makes the wrong

[1]Sentence-initial *and* in this context means that it does not conjoin two equal parts within one sentence. While the control items were initiated with *Ja* 'yes', the *und* did not function to conjoin two parts within one sentence.

predictions. The distribution of EV2 under embedding predicates that allow both EV2 and EVF complements cannot be predicted in terms of discourse novelty as a grammatical licensing condition and as such, Caplan & Djärv (2019) extend their claims too strongly.

Whereas we have shown that EV2 is acceptable when p is given, we still need to explore the significant difference between *EV2-given* and *EVF-given*. *EV2-given* scored significantly lower for naturalness than *EVF-given*. The mean ratings of the two conditions are shown in Table 3.3:

Condition	**Mean Rating**	**Mean *z*-score**
EV2-given	5.6	.38
EVF-given	5.9	.51

Table 3.3: Mean ratings and *z*-scores of the *given* conditions, Exp. 1

The significant difference between *EV2-given* and *EVF-given* suggests that under embedding predicates that allow both EV2 and EVF complements, there is a preference for EVF embedding when the proposition of the complement clause contains discourse-old information.

It is possible that this preference is the consequence of pragmatic considerations that arise from the Information Structure (IS) of EV2 clauses. In other words, it could be that EV2 clauses have a different IS than EVF clauses. Bohnacker & Rosén (2007, 2008) show that German V2 (main) clauses typically follow a 'new before old information' order and that German has a preference for raising a constituent constituting new information to the pre-verbal position in the V2 structure. Thus, the pre-verbal constituent in V2 clauses is more likely to be new. Whereas verb-final clauses have a fixed word order which cannot be structurally manipulated for IS purposes, V2 clauses can relatively freely select a pre-verbal topic, often one that constitutes new information. If Bohnacker & Rosén's findings hold true for EV2 clauses as well as V2 main clauses, we can explain the difference between *EV2-given* and *EVF-given*: EV2 clauses must topicalize a constituent, but if the clause denotes discourse-old information, it is not possible to prepose a topic that is discourse-new. The EV2 clauses denoting discourse-old information in the *EV2-given* condition may have been degraded relative to *EVF-given*, since the pre-posed topics in the *EV2-given* condition were not preferred discourse-new constituents. Therefore, it is possible that there is an interaction between pre-verbal V2 topics and IS that gives rise to a preference for *EVF-given* relative to *EV2-given*. Nevertheless, this suggestion needs to be examined in more detail and more research is called for to explore this further.

In conclusion, the experiment in this chapter tested whether EV2 clauses are acceptable if the proposition constitutes discourse-old information. It was hypothesized in Djärv 2019a and Caplan & Djärv 2019 that EV2 clauses constituting given information would be infelicitous. We found no evidence that bears out this claim, and we instead suggest that EV2 licensing and blocking is dependent on the lexical semantics of the embedding predicate, for

which experimental evidence was presented in Djärv 2019a. The difference between *EV2-given* and *EVF-given* shows that under embedding predicates that allow EV2, there is still a preference for EVF complements when proposition expresses discourse-old information. We suggest that this is driven by a different set discourse-pragmatic preferences, namely by a preference for discourse-new pre-verbal topics in V2 clauses.

The results shed new light on EV2, and this raises the question of how EV2 should be characterized. Djärv (2019a) showed that in terms of grammaticality, the distribution of EV2 is determined by the given/new presuppositions that the embedding verb places on its complement (i.e. verbs that lexically require their complement to be given, disallow EV2). However, this study has shown that the choice of EV2 over EVF under verbs that have no such presupposition is not governed by the same considerations, contrary to Caplan & Djärv (2019). These findings can inform how EV2 licensing is formally implemented, and I leave this as an opportunity for future research.

In the next chapter, I address the second question that arose as a result of the literature review: Is there a different degree of speaker commitment to p between EV2 clauses with indicative and subjunctive morphology on the finite verb? This question follows since the claims by Sode & Truckenbrodt 2018 about the interaction between EV2 interpretation and verbal mood was only supported through indirect evidence. In the next chapter, I explicitly test their predictions experimentally and show that they are not borne out.

Chapter 4

Experiment 2: Verbal Mood and Commitment to p

In this chapter, I address the second research question that arose from the literature discussion in Chapter 2, namely whether there is a different degree of speaker commitment to p between EV2 clauses with indicative and subjunctive morphology on the finite verb. This question is due to Sode & Truckenbrodt (2018), who argue that EV2 clauses yield a speaker-commitment interpretation if the verb has indicative morphology. If the finite verb in the EV2 clause has subjunctive morphology, the speaker does not commit to p. Sode & Truckenbrodt (2018) support their argument with indirect evidence and do not provide straightforward support in favor of their claims. The experiment in this chapter therefore explicitly tests whether EV2 clauses with indicative morphology on the finite verb yield a speaker-commitment interpretation.

Based on Djärv (2019a), who provided experimental evidence against the speaker-commitment accounts, particularly Woods 2016, we may expect to see no indication of speaker-commitment interpretations across indicative and subjunctive EV2 clauses. However, Djärv (2019a) did not explore the interaction between EV2 clauses and verbal mood. Thus, it is conceivable that EV2 clauses with indicative morphology yield a speaker-commitment interpretation in comparison with EV2 clauses with subjunctive mood.

4.1 Methods

4.1.1 Participants

64 native German speakers (i.e. individuals of German nationality who grew up speaking German) participated in the study. The participants were recruited through `prolific.ac` and directed to the *PennController for Ibex* online experiment platform (Zehr & Schwartz, 2018). Each participant was asked to complete the experiment in one sitting at their own pace.

4.1.2 Design

The experiment had a 2x2 factorial design with the independent variables POSITION and MOOD. Both variables were within-subjects factors: POSITION consisted of the levels *EV2* and *EVF*. MOOD consisted of the levels *subjunctive* and *indicative*. This means that each item had two possible embedded word orders with either subjunctive or indicative verbal morphology.

4.1.3 Materials

Test items

The experiment consisted of 16 sets of test sentences, leading to a total of 64 test sentences. Eight embedding predicates were used, given in Table 4.1. Those predicates were used for two reasons. First, all those verbs have been argued to embed complements with subjunctive morphology (Fabricius-Hansen & Sæbø, 2004; Sode & Truckenbrodt, 2018). Second, the chosen predicates received high naturalness ratings with EV2 complements in Djärv (2019a)'s acceptability study. This served to minimize spurious differences due to the relative naturalness of different embedding predicates. The eight embedding predicates were distributed evenly over the test items – i.e. each embedding predicate was used in two sets of test sentences.

Predicate	**English**
sagen	to say
mir erzählen	to tell me
behaupten	to claim
erwähnen	to mention
meinen	to think
glauben	to believe
ahnnemen	to assume
vermuten	to suspect

Table 4.1: Matrix-clause predicates, Experiment 2

Each item was introduced with a context sentence to situate the conversational context with two discourse participants. The target sentence was evaluated in this context. One of the people introduced in the context uttered the target sentence, which contained an embedded proposition. The experimental participant was then asked to evaluate whether the person who uttered the target sentence commits to the embedded proposition being true. An example of an item set with all four conditions is given in (29).

(29) a. CONTEXT

Stell dir vor, du bist auf einer Party, und du hörst zufällig ein Gespräch zwischen zwei deiner Freunde, Frans und Anders:
Imagine that you're at a party, and you happen to overhear a conversation between two of your friends, Frans and Anders. You hear Frans say:

b. TARGET

i. "...aber Lo vermutet, Mel *sei* die Gewinnerin des Turniers." (*EV2-subj*)
ii. "...aber Lo vermutet, Mel *ist* die Gewinnerin des Turniers." (*EV2-ind*)
iii. "...aber Lo vermutet, dass Mel die Gewinnerin des Turniers *sei*." (*EVF-subj*)
iv. "...aber Lo vermutet, dass Mel die Gewinnerin des Turniers *ist*." (*EVF-ind*)
...however, Lo suspects that Mel is the winner of the tournament.

c. STATEMENT

Laut Frans ist Mel die Gewinnerin des Turniers.
According to Frans, Mel is the winner of the tournament.

Filler items

29 fillers were presented alongside the test items, bringing the total of experimental items to 45. The fillers served to distract participants from the purpose of the experiment. The fillers were either constructed as a main-clause declarative sentence, or they contained a subordinate clause embedded under response-stance or factive predicates.

The design of the fillers gives rise to a potential flaw in the the experiment. That is, the fillers did not expose participants to a range of speaker commitment levels to p because most of the fillers entailed speaker commitment to p. The filler sentences with a main-clause declarative entail that the speaker of the utterance commits to the proposition. The same holds true for embedded propositions under factive predicates. Factive embedding predicates (e.g. *lieben* 'to love', *entdecken* 'to discover') presuppose that their complements are true for the speaker. Hence, these filler items give rise to a high degree of speaker commitment to p. As such, they were classified as 'high-commitment fillers.'

There were also three fillers that contained a subordinate clause embedded under a response-stance verb (e.g. *bezweiflen* 'to doubt', *akzeptieren* 'to accept'). While not all response-stance verbs suggest speaker commitment to p, Djärv (2019a) has shown that they presuppose that p is discourse old. It is conceivable that if participants are confronted with a continuation of a discourse containing a discourse-old proposition, they assume that this proposition has been accepted in the Common Ground of the discourse participants (see Farkas & Bruce 2010; Farkas & Roelofsen 2017). Since these three filler items were nevertheless expected to give rise to weaker speaker commitment to p, they were classified as 'low-commitment fillers.' Overall, the fact that participants were not exposed to a range

of speaker commitment levels to p may have affected their judgment of the target items, and this is a possible confound.

An example of a filler item is given in (30).

(30) a. CONTEXT

Stell dir vor, du bist auf einer Party, und du hörst zufällig ein Gespräch zwischen zwei deiner Freunde, Jasmine und Cleo:
Imagine that you're at a party, and you happen to overhear a conversation between two of your friends, Jasmine and Cleo. You hear Jasmine say:

b. i. TARGET: *High Commitment*

"...aber Alexandra hat das letzte Konzert sehr gefallen."
...however, Alexandra liked the last concert.

ii. STATEMENT

Laut Jasmine hat Alexandra das letzte Konzert sehr gefallen.
According to Jasmine, Alexandra enjoyed the last concert a lot.

c. i. TARGET: *Low Commitment*

"...aber Magnus bezweifelt nicht, dass Jon auf das Mädchen aus dem Kunstunterricht steht."
...but Magnus doesn't doubt that Jon likes the girl in arts class.

ii. STATEMENT

Laut Jasmine hat steht Jon auf das Mädchen aus dem Kunstunterricht.
According to Jasmine, Jon likes the girl in arts class.

4.1.4 Procedure

The experimental items were distributed across four lists, following a Latin-Square design. Only one condition per item set was shown to the participants, so that participants would not see multiple conditions of one item set. In other words, each participant saw 16 unique test sentences and 29 unique fillers. The fillers were identical in each list, so all participants were presented with the same filler items. The items were presented in a uniquely randomized order for each participant.

The study was deployed on Prolific, which distributed the study link to registered users that fit the demographic requirements for this experiment (i.e. native speakers of German, from Germany). The experiment was created and hosted using *PennController for Ibex* for internet-based experiments (Zehr & Schwartz, 2018).

At the beginning of the experiment, participants were asked to read the instructions carefully, and were presented with an example in order to familiarize participants with (i) the experimental task and (ii) the experiment's interface. Each item was presented in the center of the browser window, and a 9-point scale appeared underneath the target sentence, along with the statement that the speaker commits to p. The participants were asked to rate

whether this statement was true on a 9-point scale with marked ends, where 1 was *Falsch* 'False' and 9 *Richtig* 'True'. The middle option (i.e. 5) was marked *könnte sein* 'could be.' A 9-point scale was used for the following reason: in Djärv's (2019a) experiment on speaker commitment to p (discussed in Section 2.3) a 9 point scale was used. By a 9-point scale for this experiment, the results should be comparable to Djärv's (2019a). A screenshot of an experimental trial is given in Figure 4.1.

Figure 4.1: Screenshot of a test trial, Experiment 2

The experiment took approximately 10-15 minutes to complete. After completing the experiment, participants were redirected to Prolific and were compensated £1.25.

4.1.5 Predictions

There were two different sets of predictions for the target sentences, based on Sode & Truckenbrodt 2018 and Djärv 2019a. Djärv (2019a) shows that EV2 clauses (with indicative morphology) do not yield a speaker-commitment interpretation. Based on this, one hypothesis is that there is going to be no difference between *EV2-subj* and *EV2-ind*, and that both types of EV2 clauses should score around the middle for speaker-commitment (i.e. 'could be'). This is the null-hypothesis.

The alternative hypothesis follows from Sode & Truckenbrodt 2018, who argue that EV2 clauses with indicative morphology yield a speaker-commitment interpretation, as opposed to EV2 clauses with subjunctive morphology. Based on their proposal, it is predicted that *EV2-ind* will score high for speaker commitment to p, while *EV2-subj* will score around the middle or lower, together with both levels of the *EVF*-condition.

4.2 Results

In analyzing the data, the naturalness ratings from each participant were z-score transformed using all item sets and fillers. The statistical tests reported are of the z-scores. All the results were analyzed in R (R Development Core Team, 2012). The results from two participants were removed prior to analysis. The participants showed 'floor effects,' meaning that for all items, they gave a 1 or 2. Given that almost all of the filler items entailed a high degree of speaker commitment to p, they were expected to give the fillers high ratings. Since these two participants even gave the fillers low ratings, it is likely that they were not participating in a serious manner. Therefore, both participants were excluded from the analysis.

4.2.1 Filler items

Since most of the filler items entailed speaker commitment to p, they did not invite participants to use both ends of the scale. Nonetheless, the fillers were useful to see whether participants were paying attention. Three filler items that had a proposition embedded under response-stance verbs entailed a lower degree of speaker commitment to p. Therefore, these items invited lower ratings than the other fillers. These two types of fillers were classed as 'low belief' and 'high belief', respectively.

Figure 4.2 shows the mean z-scores of the filler items. The error bars indicate the standard error.

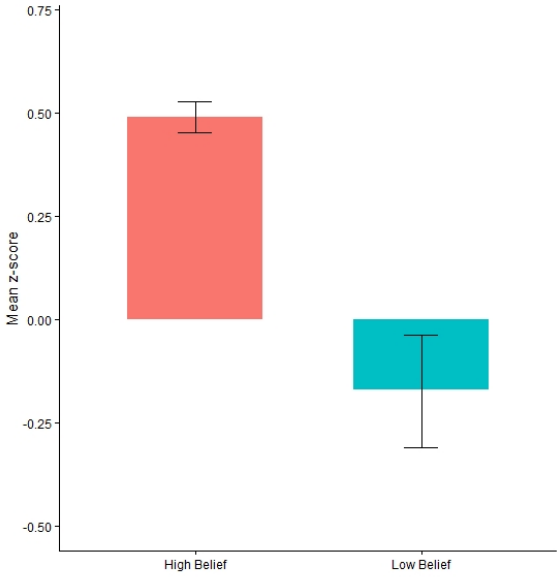

Figure 4.2: Mean z-scores of the filler sentences, Exp. 2

Figure 4.2 shows a trend that the 'low-belief' fillers receive lower ratings for speaker commitment than the 'high-belief' fillers, which was expected.

4.2.2 Test items

The mean ratings of the raw results were around the middle across all the conditions, illustrated in Figure 4.3. Figure 4.4 shows the mean z-scores.

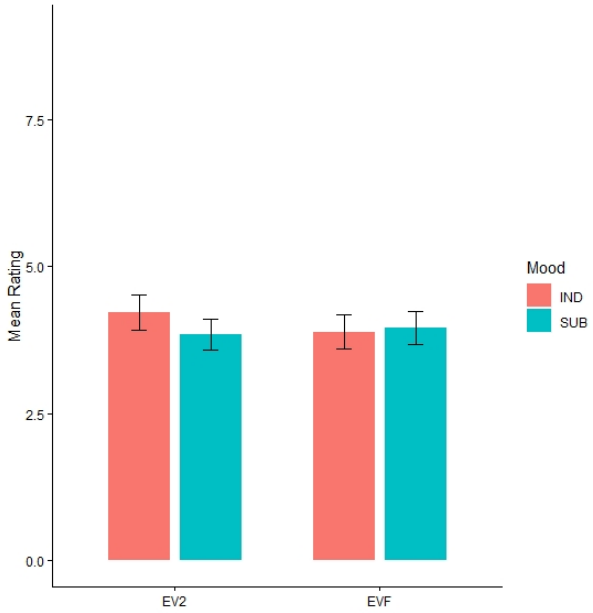

Figure 4.3: Mean ratings of the test conditions, Exp. 2

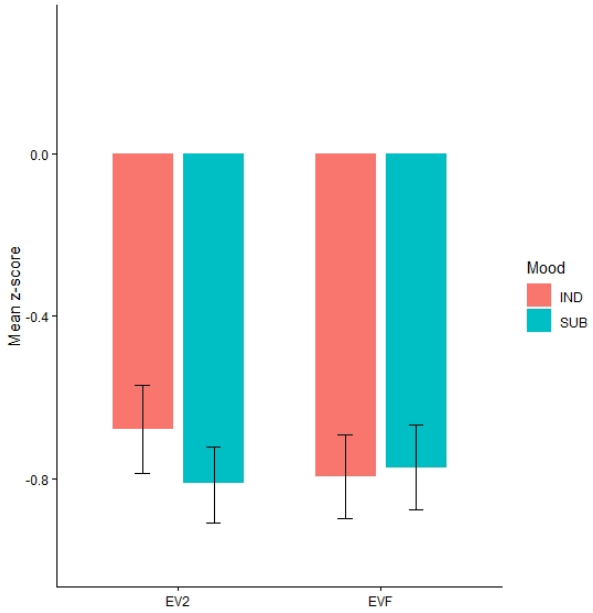

Figure 4.4: Mean$z$-scores of the test conditions, Exp. 2

Figure 4.3 shows that mean ratings across conditions were around the middle, although there seems to be a numeric trend towards speaker commitment for *EV2-ind* relative to

EV2-subj. The *z*-scores in Figure 4.4 also illustrate this. The fact that the mean *z*-scores are well below zero is the result of the high average ratings of the fillers.

To explore whether the numeric trend we see in Figures 4.3 and 4.4 amounted to a significant difference, I analyzed the *z*-scores using the `lme4` package to fit the model (Bates et al., 2012). I used the `lmerTest` package to obtain *p*-values (Kuznetsova et al., 2014). I fit a maximal random-effects structure with random intercepts and random slopes for participants and items, with the random correlation parameter for the interaction term removed (Barr et al., 2013). Moreover, the predictors were sum coded, with one of the levels coded as 1, and the other as -1. The analysis showed that there was neither a main effect nor an interaction. This means that the results for all conditions were statistically similar.

4.3 Discussion

This experiment tested whether Sode & Truckenbrodt's (2018) empirical claims can be verified using formal experimental methods of the type employed by Djärv 2019a. They proposed that EV2 clauses are interpreted as speaker commitments to p when the finite verb of the embedded clause has indicative morphology. Moreover, when the finite verb of the EV2 clause has subjunctive morphology, they argue that only the matrix-clause subject commits to p. In this experiment, we tested whether EV2 clauses with indicative morphology received a speaker commitment interpretation relative to EV2 clauses with subjunctive morphology.

Based on Sode & Truckenbrodt 2018, we predicted that *EV2-ind* would score higher for speaker commitment to p than *EV2-subj*. We furthermore predicted that neither of the *EVF* conditions would score high for speaker commitment to p, and we thus expected *EV2-ind* to score significantly higher for speaker commitment than *EVF-ind* and *EVF-subj*.

The results show that Sode & Truckenbrodt's (2018) predictions were not borne out. We did not find a significant difference between any of the conditions and all scored statistically similar. Moreover, the average ratings in Table 4.2 show all conditions scored around the half-way mark on a 9-point scale.

Condition	**Mean Rating**	**Mean *z*-score**
EV2-ind	4.56	-0.68
EV2-subj	4.25	-0.80
EVF-ind	4.25	-0.80
EVF-subj	4.35	-0.78

Table 4.2: Mean ratings and *z*-scores of test conditions, Exp. 2

The null effect between conditions showed that EV2 clauses with indicative morphology are not interpreted differently from the other conditions. Moreover, the score for *EV2-ind*

was 4.56 out of 9. If EV2 clauses with indicative morphology yield a speaker-commitment interpretation, we expect to see ratings closer to 9. However, it did not score higher than the halfway point, which was marked on the scale as *könnte sein* 'could be'. The low ratings for *EV2-ind* are contrary to what Sode & Truckenbrodt (2018) argue and demonstrate that *EV2-ind* does not give rise to a speaker commitment interpretation of p.

Admittedly, the design of the filler items may have confounded the results. By using standard declarative sentences and propositions embedded under factive predicates, the participants were not invited to use the entirety of the scale. If there were fillers that clearly did not convey speaker commitment to p, the rating for the target items may have been higher. However, regardless of the flawed design of the fillers, we should have seen a difference between *EV2-ind* and the other conditions under Sode & Truckenbrodt's (2018) proposal. We did not find this expected difference, and Sode & Truckenbrodt's (2018) claims are not borne out.

In sum, this experiment adds to the experimental literature (e.g. Djärv, 2019a) that shows that EV2 clauses do not give rise to a speaker assertion to p. In this particular experiment we have shown that EV2 clauses do not result in a speaker-commitment interpretation, regardless of the verbal morphology (i.e. subjunctive or indicative) on the finite verb.

Chapter 5

Conclusion

This thesis has presented two experiments that tested empirical claims about the felicity and interpretation of EV2. The first experiment investigated the naturalness of EV2 clauses in contexts where the embedded proposition is either discourse-new or discourse-old. This experiment was based on work by Caplan & Djärv 2019 and Djärv 2019a, who carried out experiments on the interpretation and felicity of EV2. Djärv (2019a) found that EV2 is infelicitous under embedding predicates that presuppose that p is given. Caplan & Djärv (2019) found that EV2 utterances typically denote discourse-new information. This led them to hypothesize the following licensing conditions for EV2:

(31) a. EV2-clauses have some interpretive effect. The distribution or use of this interpretive effect is influenced both by the meaning of the embedding predicate, and the type of discourse context in which the sentence is uttered.

b. The proposition denoted by a EV2 clause is interpreted as constituting discourse-new information.

(Djärv, 2019a, p. 96)

This hypothesis sets out two crucial conditions for EV2 to be licensed: (i) the embedding predicate must not presuppose that its complement is discourse-old information, and (ii) the embedded proposition must constitute discourse-new information.

The latter part of this proposal, however, had not been explicitly tested. It predicts that EV2 under verbs that allow EV2 would be infelicitous if the proposition itself was discourse-old. The experiment in Chapter 3 tested whether EV2 is infelicitous when p constitutes given information, and the results show that this is not the case. As such, the experiment did not bear out the claims by Caplan & Djärv 2019 and Djärv 2019a that EV2 is not allowed when p constitutes discourse-old information. In fact, EV2 clauses that were discourse-old were rated to be equally natural as EV2 clauses that denoted discourse-new information.

Interestingly, EV2 clauses that were discourse-old were degraded compared to canonical verb-final clauses that were discourse old. This suggests that under embedding predicates that allow both EV2 and EVF complements, there is a preference for EVF complements

when the proposition of the complement clause contains discourse-old information. While we suggest that this difference is due to implicit preferences of V2-clause information structure, more research is needed to understand the nature of the preference for embedded verb-final configurations when p is given.

Most importantly, this experiment contributed empirically to the debate about EV2 acceptability and showed that the conditions under which EV2 is acceptable, formulated by Caplan & Djärv 2019, should be relaxed. The hypothesis that EV2 is only acceptable when p is discourse-new is too strong and cannot be maintained. More research is needed to further establish the relationship between givenness, newness, and EV2 complementation in German and cross-linguistically.

The second experiment of this thesis addressed a speaker-commitment approach toward EV2. Sode & Truckenbrodt (2018) claim that if the finite verb of an EV2 clause has indicative mood, it is required that both the matrix-clause subject and the speaker are committed to p. If the finite verb has subjunctive mood, it is required that the subject of the embedding predicate is committed to p. The empirical justification for their main claim about speaker assertion is deduced from a paradigm that shows person and mood distinctions in EV2 clauses. EV2 embedding under predicates with a third-person matrix subject is only felicitous when the finite verb in the embedded clause has subjunctive morphology. EV2 embedding under predicates with a first-person matrix subject is only felicitous when the finite verb in the embedded clause has indicative morphology. They deduce that indicative mood is speaker-oriented and therefore yields a speaker-commitment interpretation. We tested this explicitly in the experiment in Chapter 4, and the results of the experiment show that those claims are not borne out. EV2 clauses with indicative morphology did not yield more of a speaker-commitment interpretation than EV2-subjunctive and EVF clauses. Moreover, the average rating for the EV2 clauses with indicative morphology was around 4.5 out of 9, which demonstrates that EV2 clauses with indicative morphology are not interpreted as a speaker-assertion. The experiment in Chapter 4 therefore contradicts Sode & Truckenbrodt's (2018) claims and shows that speaker commitment to p has no bearing on the interpretation or licensing of EV2 clauses.

In sum, this thesis has made a two-way empirical contribution to the debate about EV2 interpretation and licensing. Firstly, it has been shown that discourse novelty of p is independent from the lexical constraints imposed by the verbs that cannot select EV2. Secondly, the results of Experiment 2 have shown that EV2 clauses do not yield a speaker-commitment interpretation and that this is not conditioned by verbal mood.

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Appendix A

Items Experiment 1

All context sentences were set up as follows, adapted from Djärv (2019b):

> GERMAN: Stell dir vor, du bist auf einer Party, und du hörst zufällig ein Gespräch zwischen zwei deiner Freunde, *x* und *y*. Du hörst *x* sagen:
>
> ENGLISH: Imagine that you're at a party, and you happen to overhear a conversation between two of your friends, *x* and *y*. You hear *x* say:

Speaker *x* introduces a biased question as context, which were structured as follows:

> GERMAN: p, oder?
> ENGLISH: p, isn't it?

Then the target sentence was introduced:

> GERMAN: *y* antwortet:
> ENGLISH: *y* answers:

After this, the target sentence followed:

> GERMAN: Ja, *z* hat gesagt/erwähnt/mir erzählt, p/q
> ENGLISH: Yes, *z* said/mentioned, told me p/q.

The Control condition differed from target sentences such that it was set up as "Yes, and p/q", following V2 main clause order for p or q:

> GERMAN: Ja, **und** p/q
> ENGLISH: Yes, **and** p/q.

In the list below, the first part of an item contains the biased question marked as Context, and the second part contains the different configurations of the target item. The Control condition is not given, but can be reconstructed based on the above information.

A.1 Test Items

1. Die Vermieterin kommt aus Frankreich, oder? (Context)
   The landlady is from France, isn't she?
   Ja, Vincent hat gesagt, (dass) sie hat einen Akzent (hat). (Target-New)
   Yes, Vincent said that the landlord has an accent.
   Ja, Vincent hat gesagt, (dass) sie kommt aus Frankreich (kommt). (Target-Given)
   Yes, Vincent said that the landlord is from France.

2. Klaus ist der neue Lottogewinner, oder? (Context)
   Klaus is the new winner of the lottery, isn't he?
   Ja, Lena hat gesagt, (dass) er ist jetzt in einem teueren Urlaub (ist). (Target-New)
   Yes, Lena said that he is on an expensive vacation right now.
   Ja, Lena hat gesagt, (dass) er ist der neue Lottogewinner (ist).
   Yes, Lena said that he is the new winner of the lottery.

3. Cornelia hat einen Forschungspreis gewonnen, oder? (Context)
   Cornelia won a research award, didn't she?
   Ja, Sebastian hat erwähnt, (dass) sie ist sehr stolz (ist). (Target-New)
   Yes, Sebastian mentioned that she is very proud.
   Ja, Sebastian hat erwähnt, (dass) sie hat einen Forschungspreis gewonnen (hat).
   Yes, Sebastian mentioned that she won a research award. (Target-Given)

4. Theodor ist einer Sekte beigetreten, oder? (Context)
   Theodor has joined a cult, hasn't he?
   Ja, Nellie hat erwähnt, (dass) die Sekte ist gefährlich (ist). (Target-New)
   Yes, Nellie mentioned that the cult is dangerous.
   Ja, Nellie hat erwähnt, (dass) er ist einer Sekte beigetreten (ist). (Target-Given)
   Yes, Nellie mentioned that he joined a cult.

5. Ruths Vater ist Bürgermeister von Duisburg, oder? (Context)
   Ruth's dad is mayor of Duisburg, isn't he?
   Ja, Ruth hat gesagt, (dass) er ist Politiker (ist). (Target-New)
   Yes, Ruth said that he is a politician.
   Ja, Ruth hat gesagt, (dass) er ist Bürgermeister von Duisburg (ist). (Target-Given)
   Yes, Rut hsaid that he is mayor of Duisburg.

6. Kasper ist der beste Schüler in seiner Klasse, oder? (Context)
   Kasper is the best student in his class, isn't he?
   Ja, Linnea hat erwähnt, (dass) Mathe ist sein bestes Fach (ist). (Target-New)
   Yes, Linnea mentioned that math is is best course.
   Ja, Linnea hat erwähnt, dass er (ist) der beste Schüler in seiner Klasse (ist). (Target-Given)
   Yes, Linnea mentioned that he is the best student in his class.

7. Ulrich war bei der Einweihungsparty, oder? (Context)
   Ulrich was at the housewarming party, wasn't he?
   Ja, Maja hat mir erzählt, (dass) er ist früh nach Hause gegangen (ist). (Target-New)
   Yes, Maja told me that he went home early.
   Ja, Maja hat mir erzählt, (dass) er war bei der Einweihungsparty (war). (Target-Given)
   Yes, Maja told me that he was at the housewarming party.

8. Frans ist in die Yoga-Lehrerin verliebt, oder? (Context)
   Frans has a crush on the yoga teacher, hasn't he?
   Ja, Klara hat gesagt, (dass) er ist jetzt auf einem Date (ist). (Target-New)
   Yes, Klara said that he is on a date right now.
   Ja, Klara hat gesagt, (dass) er ist in die Yoga-Lehrerin verliebt (ist). (Target-Given)
   Yes, Klara said that he has a crush on the yoga teacher.

9. Der Autofahrer ist unschuldig, oder? (Context)
   The car driver is innocent, isn't he?
   Ja, die Polizistin hat erwähnt, (dass) der Täter ist unbekannt (ist). (Target-New)
   Yes, the police officer mentioned that the offender is unknown.
   Ja, die Polizistin hat erwähnt, (dass) er ist unschuldig (ist). (Target-Given)
   Yes, the police officer mentioned that he is innocent.

10. Derek ist neu im Tennisclub, oder? (Context)
    Derek is new with the tennis club, isn't he?
    Ja, Liv hat mir erzählt, (dass) er ist kürzlich hierher gezogen (ist). (Target-New)
    Yes, Liv told me that he recently moved here.
    Ja, Liv hat mir erzählt, (dass) er ist neu im Tennisclub (ist). (Target-Given)
    Yes, Liv told me that he is new with the tennis club.

11. Minna ist nicht qualifiziert für den Job, oder? (Context)
    Minna is not qualified for the job, is he?
    Ja, Liam hat gesagt, (dass) sie freut sich nicht (freut), anzufangen. (Target-New)
    Yes, Liam said that she is not looking forward to beginning.
    Ja, Liam hat gesagt, (dass) sie ist nicht qualifiziert (ist). (Target-Given)
    Yes, Liam said that she is unqualified.

12. Joanna ist in den Typen von nebenan verknallt, oder? (Context)
    Joanna is in love with the guy next door, isn't she?
    Ja, Ferdinand hat erwähnt, (dass) sie (hat) ihn zum Essen eingeladen (hat). (Target-New)
    Yes, Ferdinand mentioned that she invited him over for dinner.
    Ja, Ferdinand hat erwähnt, (dass) ist in den Typen von nebenan verknallt (ist).
    Yes, Ferdinand mentioned that she is in love with the guy next door. (Target-Given)

13. Das neue Auto hat Probleme, oder? (Context)
    The new car has problems, hasn't it?
    Ja, Lukas hat mir erzählt, (dass) es ist sehr laut (ist). (Target-New)
    Yes, Lukas told me that it makes a lot of noise.
    Ja, Lukas hat mir erzählt, (dass) es hat Probleme (hat). (Target-Given)
    Yes, Lukas told me that it has problems.

14. Ida hat den Turnier gewonnen, oder? (Context)
    Ida has won the tournament, hasn't she?
    Ja, Martin hat gesagt, (dass) sie ist sehr zufrieden mit dem Ergebnis (ist). (Target-New)
    Yes, Martin said that she is very happy with the result.
    Ja, Martin hat gesagt, (dass) sie hat den Turnier gewonnen (hat). (Target-Given)
    Yes, Martin said that she is won the tournament.

15. Jons neue Freundin is sehr nett, oder? (Context)
    Jon's new girlfriend is very nice, isn't she?
    Ja, Niklas hat mir erzählt, (dass) Jons Eltern mögen sie (mögen). (Target-New)
    Yes, Niklas told me that Jon's parents like her.
    Ja, Niklas hat mir erzählt, (dass) sie ist sehr nett (ist). (Target-Given)
    Yes, Niklas told me that she is very nice.

16. Der neue Lehrer ist streng, oder? (Context)
The new teacher is strict, isn't he?
Ja, Layla hat mir erzählt, (dass) er ist unfreundlich (ist). (Target-New)
Yes, Layla told me that he is unfriendly.
Ja, Layla hat mir erzählt, (dass) er ist streng (ist). (Target-Given)
Yes, Layla told me that he is strict.

17. Pascal geht nach Italien, oder? (Context)
Pascal is going to Italy, isn't he?
Ja, Myrthe hat gesagt, (dass) er ist ganz nervös (ist). (Target-New)
Yes, Myrthe said that he is quite nervous.
Ja, Myrthe hat gesagt, (dass) er geht nach Italien (geht). (Target-Given)
Yes, Myrthe said that he is going to Italy.

18. Rowdy braucht Hilfe mit seinem Auto, oder? (Context)
Rowdy needs help with his car, doesn't he?
Ja, Annette hat gesagt, (dass) er hat das Auto bei einem zwielichtigen Händler gekauft (hat).
Yes, Annette said that he bought the car at a shady dealership. (Target-New)
Ja, Annette hat gesagt, (dass) er braucht Hilfe mit seinem Auto (braucht). (Target-Given)
Yes, Annette said that he needs help with his car.

19. Der Nachbar ist ein komischer Typ, oder? (Context)
The neighbor is an interesting character, isn't he?
Ja, Suzanne hat erwähnt, (dass) er macht abends viel Lärm (macht). (Target-New)
Yes, Suzanne mentioned that he makes a lot of noise at night.
Ja, Suzanne hat erwähnt, (dass) er ist ein komischer Typ (ist). (Target-Given)
Yes, Suzanne mentioned that he is an interesting character.

20. Der Friseurladen ist bankrott, oder? (Context)
The barber shop is bankrupt, isn't it?
Ja, Estelle hat erwähnt, (dass) der Besitzer ist sehr traurig (ist). (Target-New)
Yes, Estelle mentioned that the owner is very sad.
Ja, Estelle hat erwähnt, (dass) er ist bankrott (ist). (Target-Given)
Yes, Estelle mentioned that it is bankrupt.

21. Melissa ist schwanger, oder? (Context)
Melissa is pregnant, isn't she?
Ja, William hat gesagt, (dass) sie kennt das Geschlecht des Kindes (kennt). (Target-New)
Yes, William said that she knows the biological gender of the baby.
Ja, William hat gesagt, (dass) sie ist schwanger (ist). (Target-Given)
Yes, William said that she is pregnant.

22. Der Mieter pflegt den Garten nicht gut, oder? (Context)
The tenant doesn't take good care of the garden, does he?
Ja, meine Mutter hat erwähnt, (dass) er vernachlässigt viel (vernachlässigt). (Target-New)
Yes, my mom mentioned that he neglects a lot.
Ja, meine Mutter hat erwähnt, (dass) pflegt den Garten nicht gut (pflegt). (Target-Given)
Yes, my mom mentioned that he doesn't take good care of the garden.

23. Die Putzfrau will ein höheres Gehalt, oder? (Context)
The cleaning lady wants a higher salary, doesn't she?
Ja, der Sekretär hat mir erzählt, (dass) der Geschäftsführer ist damit einverstanden (ist).
Yes, the secretary (m) told me that the employer agrees with it. (Target-New)
Ja, der Sekretär hat mir erzählt, (dass) sie will ein höheres Gehalt (will). (Target-Given)
Yes, the secretary (m) told me that she wants a higher salary.

24. Stan fährt morgen in den Urlaub, oder? (Context)
Stan is going on vacation tomorrow, isn't he?
Ja, Cheryl hat gesagt, (dass) er freut sich darauf (freut). (Target-New)
Yes, Cheryl said that he is looking forward to it.
Ja, Cheryl hat gesagt, (dass) er fährt morgen in den Urlaub (fährt). (Target-Given)
Yes, Cheryl said that he is going on vacation tomorrow.

25. Anja wohnt nicht mehr zu Hause, oder? (Context)
Anja doesn't live at home anymore, does she?
Ja, mein Freund hat erwähnt, (dass) Anjas neue Wohnung ist sehr schön (ist). (Target-New)
Yes, my friend mentioned that Anja's new home is very nice.
Ja, mein Freund hat erwähnt, (dass) sie wohnt nicht mehr zu Hause (wohnt). (Target-Given)
Yes, my friend mentioned that she doesn't live at home anymore.

26. Der neue Bäcker heisst Michael, oder? (Context)
The new baker's name is Michael, isn't it?
Ja, meine Mutter hat mir erzählt, (dass) die Bäckerei macht nächste Woche auf (macht).
Yes, my mom told me that the bakery opens next week. (Target-New)
Ja, meine Mutter hat mir erzählt, (dass) er heisst Michael (heisst). (Target-Given)
Yes, my mom told me that his name is Michael.

27. Der neue Supermarkt ist teuer, oder? (Context)
The new grocery store is expensive, isn't it?
Ja, Simone hat gesagt, (dass) dass er verkauft nur Premium-Marken (verkauft). (Target-Given)
Yes Simone said that it only sells high-end brands.
Ja, Simone hat gesagt, (dass) er ist teuer (ist). (Target-Given)
Yes Simone said that it's expensive.

28. Die Geburtstagstorte ist verbrannt, oder? (Context)
The birthday cake burnt, isn't it?
Ja, Emma hat erwähnt, (dass) der Ofen war schlecht eingestellt (war). (Target-New)
Yes, Emma mentioned that the oven was poorly adjusted.
Ja, Emma hat erwähnt, (dass) sie ist verbrannt (ist). (Target-Given)
Yes, Emma mentioned that it burnt.

29. Der Zug fährt an Feiertagen, oder? (Context)
The train is going on holidays, right?
Ja, Heidi hat mir erzählt, (dass) es gibt keinen separaten Sonntagsfahrplan mehr (gibt).
Yes, Heidi told me that there is no special Sunday schedule anymore. (Target-New)
Ja, Heidi hat mir erzählt, (dass) er fährt an Feiertagen (fährt). (Target-Given)
Yes, Heidi told me that is going on Holidays.

30. Peter ist aus dem Urlaub zurück, oder? (Context)
Peter is back from vacation, isn't he?
Ja, Miriam hat gesagt, (dass) es war super (war). (Target-New)
Yes, Miriam told me that it was great.
Ja, Miriam hat gesagt, (dass) er ist aus dem Urlaub zurück (ist). (Target-Given)
Yes, Miriam said that he is back from vacation.

31. Andre hat Jetlag, oder? (Context)
Andre has a jetlag, hasn't he?
Ja, seine Frau hat mir erzählt, (dass) er hat sowieso schon Schlafprobleme (hat). (Target-New)
Yes, his wife told me that he has sleeping issues anyways.
Ja, seine Frau hat mir erzählt, (dass) er hat Jetlag (hat). (Target-Given)
Yes, his wife told me that he has a jetlag.

32. Die Renovierung der Schule ist abgeschlossen, oder? (Context)
The renovation of the school has ended, hasn't it?
Ja, der Schulleiter hat mir erzählt, (dass) die Container verschwinden wieder (verschwinden).
Yes the principal told me that the temporary classrooms will go away again. (Target-New)
Ja, der Schulleiter hat mir erzählt, (dass) sie ist abgeschlossen (ist). (Target-Given)
Yes the principal told me that it has ended.

33. Die Auktion hat viel gebracht, oder? (Context)
The auction brought a lot, didn't it?
Ja, Fernando hat mir erzählt, (dass) das Denkmal kann wieder aufgebaut werden (kann). (Target-New)
Yes, Fernando told me that the monument can be rebuilt again.
Ja, Fernando hat mir erzählt, (dass) sie hat viel gebracht (hat). (Target-Given)
Yes, Fernando told me that it brought a lot.

34. Der Streik hat zu Ergebnissen geführt, oder? (Context)
The strike has had results, hasn't it?
Ja, meine Tante hat erwähnt, (dass) die Mitarbeiter erhälten bessere Arbeitsbedingungen (erhälten). (Target-New)
Yes, my aunt mentioned that the employees are getting better working conditions.
Ja, meine Tante hat erwähnt, (dass) er hat zu Ergebnissen geführt (hat). (Target-Given)
Yes, my aunt mentioned that it has had results.

35. Die Buchhandlung wurde geschlossen, oder? (Context)
The bookstore will close, won't it?
Ja, meine Schwester hat mir erzählt, (dass) es gibt in der Stadt gar keine Buchhandlung mehr (gibt). (Target-New)
Yes, my sister told me that there are no bookstores left in town.
Ja, meine Schwester hat mir erzählt, (dass) sie wurde geschlossen (wurde). (Target-Given)
Yes, my sister told me that it will close.

36. Der Weihnachtsmarkt war von Holländern überfüllt, oder? (Context)
The Christmas market was packed with Dutch people, wasn't it?
Ja, meine Mutter hat erwähnt, (dass) er war besonders voll (war) am Samstag. (Target-New)
Yes, my mother mentioned that it was very crowded on Saturday.
Ja, meine Mutter hat erwähnt, (dass) er von Holländern überfüllt (war). (Target-Given)
Yes, my mother mentioned that it was packed with Dutch people.

A.2 Filler Items

1. Wie geht's Ivars Tochter in der Schule? (Context)
How's Ivar's daughter doing in school?
Keine Ahnung. Ivar hat die Elternabende immer verpasst. (Target)
No idea. Ivar never went to the parents' evenings.

2. Bist du dir sicher, dass Felix unschuldig ist? (Context)
Are you sure that Felix is innocent?
Könnte sein, aber Felix hat kein gutes Alibi. (Target)
Could be, but Felix doesn't have a good alibi.

3. Ich finde es sehr gut, dass Karolina das Dissertationsprojekt beendet hat. (Context)
I think it's very good that Karolina quit her dissertation.
Ja, ich auch, aber Maike gefällt es nicht. (Target)
Yes, mee too, but Maike doesn't like it.

4. Wie hat Emily diesen Kurs jemals bestanden? (Context)
   How did Emily ever pass this course?
   Emily hat in letzter Zeit keine Labor-Treffen ausgelassen. (Target)
   Emily hasn't missed a lab meeting recently.

5. War die Party gut gestern? (Context)
   Was the party good yesterday?
   Sie war okay, aber Walter kann die Freunde seiner Frau nicht leiden. (Target)
   It was alright, but Walter can't stand his wife's friends.

6. War Per der einzige aus seinem Team auf der Party? (Context)
   Was Per the only one from his team at the party?
   Ja, aber das war kein Problem. Per mochte die Leute auf der Party sehr. (Target)
   Yes, but it was no problem. Per liked the people at the party a lot.

7. Ist Miriam in den Yoga-Lehrer verliebt? (Context)
   Does Miriam have a crush on the yoga teacher?
   Ja, aber Wilhelmina hat sich schon mit dem Yoga-Lehrer getroffen. (Target)
   Yes, but Wilhelmina has already had a date with the yoga teacher.

8. Hat Alexandra etwas über das Konzert gesagt? (Context)
   Did Alexandra say anything about the concert?
   Ja, Alexandra hat das letzte Konzert sehr gefallen. (Target)
   Yes, Alexandra really liked the last concert.

9. Warum hat Max in letzter Zeit Witze über Frederik gemacht? (Context)
   Why has Max made so many jokes about Frederik recently?
   Frederik ist in die Yoga Lehrerin verliebt, und Max findet das witzig. (Target)
   Frederik is in love with the yoga teacher, and Max thinks that's funny.

10. Elias darf das Auto nicht fahren, oder? (Context)
    Elias is not allowed to drive that car, is he?
    Ja, Elias darf das Auto, das seine Frau gehört, nicht fahren. (Target)
    Yes, Max is not allowed to drive the car that belongs to his wife.

11. Wie war das Restaurant gestern? (Context)
    How was the restaurant yesterday?
    Nicht schlecht, aber Kerstin konnte die Bedienung im Restaurant nicht leiden. (Target)
    Not bad, but Kerstin couldn't stand the servers in the restaurant.

12. Warum wurde Oliver aus der Firma entlassen? (Context)
    Why was Oliver fired from the company?
    Oliver hat das Abendessen mit dem Geschäftsführer verpatzt. (Target)
    Oliver screwed up the dinner with the CEO.

13. Wie findet Marie, dass Ernst dem Buchclub beigetreten ist? (Context)
    How does Marie like it that Ernst joined the book club?
    Marie findet das gut, glaube ich. (Target)
    Marie is okay with it, I believe.

14. Ist Lovis glücklich mit der Schule ihres Sohnes? (Context)
    Ist Lovis happy with her son's school?
    Ja, weil David eine gute Ausbildung bekommt. (Target)
    Yes, because David is getting a good education there.

15. Spricht der neue Lehrer Deutsch? (Context)
Does the new teacher speak German?
Kaum, Stefan kann ihn nicht gut verstehen. (Target)
Hardly, Stefan can't understand him well.

16. Hast du Maria gesehen? (Context)
Have you seen Maria?
Maria ist zu Hause geblieben. (Target)
Maria stayed home.

17. Ist Malte stolz, dass er das Finale erreicht hat? (Context)
Is Malte proud that he reached the final?
Eigentlich nicht, weil Jakob den Backwettbewerb gewonnen hat. (Target)
No, actually, because Jacob won the baking contest.

18. Was hältst du davon, was Luna gesagt hat? (Context)
What do you think of what Luna said?
Ich finde das okay. (Target)
I think it's okay.

19. Warum ist Laura so teilnahmslos? (Context)
Why is Laura so indifferent?
Olivia wird den Wettkampf nie gewinnen, und Laura akzeptiert das. (Target)
Olivia is never gong to win the competition and Laura has accepted that.

20. Fühlt Margareta sich unsicher, wenn Leo fährt? (Context)
Does Margareta feel unsafe when Leo is driving?
Ja, Leo ist ein schlechter fahrer. (Target)
Yes, Leo is a bad driver.

21. Weisst du, warum Matilda so wütend auf ihren Freund ist? (Context)
Do you know why Matilda is so angry at her friend?
Scheinbar steht Laura auf den Hochzeitsplaner und das gefällt Matilda nicht. (Target)
Apparently Laura is on the wedding planner and Matilda doesn't like that.

22. Bist nu nervös, ob du den Job bekommst? (Context)
Are you nervous about getting the job or not?
Sehr nervös! Jemand anderes hat auch Interesse an der Stelle. (Target)
Very nervous. Somebody else also has an interest in getting the position.

23. Hat Louis Kitty im Volleyballverein vorgestellt? (Context)
Has Louis introduced Kitty at the volleyball club?
Ja, und Kitty mag die Leute vom Volleyballverein. (Target)
Yes, and Kitty likes the people at the volleyball club.

24. Weisst du, was Lucas zur Polizei gesagt hat? (Context)
Do you know what Lucas told the police?
Nicht genau, aber Lucas hat nicht geleugnet, dass Caroline sich mit dem Buchhalter verschworen hat. (Target)
Not exactly, but Lucas didn't deny that Caroline conspired with the accountant.

25. Warum war Martha gestern so wütend? (Context)
Why was Martha so angry yesterday?
Marta ist wütend, weil Robin durch die Prüfung gefallen ist. (Target)
Marta is angry because Robin failed the test.

26. Was hält Samuel von seinen Mitbewohnern? (Context)
What does Samuel think of his roommates?
Samuel hasst die Leute, mit denen er zusammen lebt. (Target)
Samuel hates the people he lives together with.

27. Wie hat sich Sophia beim Familientreffen geschlagen? (Context)
How did Sophia do at the family reunion?
Sie hat sich gut geschlagen. (Target)
She did well.

28. Ist Lara alleine zu Hause heute abend? (Context)
Is Lara home alone tonight?
Andreas ist nicht zu Hause. (Target)
Andreas isn't home.

29. Wie geht's Jon? (Context)
How is Jon doing?
Jon steht auf das Mädchen aus dem Kunstunterricht. (Target)
Jon likes the girl from art class.

30. Ist Leo durch die Fahrprüfung gefallen? (Context)
Did Leo fail the driving test?
Leo hat sein Abitur gemacht. (Target)
Leo did his final exams.

31. Wusste Mattias, dass Matilda die Spendenaktion abgesagt hat? (Context)
Did Mattias know that Matilda canceled the fundraiser?
Matilda hat meine Email nicht beantwortet. (Target)
Matilda hasn't answered my email.

32. Steht Laura auf den Hochzeitsplaner? (Context)
Is Laura on the wedding planner?
Greta mag Laura sowieso nicht. (Target)
Greta doesn't like Laura anyways.

33. Hat Eva die alte Einrichtung weggeworfen? (Context)
Did Eva throw out the old furniture?
Eva hat ein neue Auto gekauft. (Target)
Eva bought a new car.

34. Will Roland die Stelle auch haben? (Context)
Does Roland also want to get that position?
Roland tut weniger als die anderen Kandidaten. (Target)
Roland is doing less than the other candidates.

35. Hat Anna die Vorstandsmitglieder bedroht? (Context)
Did Anna lie to the board members?
Aber es bleibt immer noch unprofessionell. (Target)
But it is still very unprofessional.

36. Mag Kitty die Leute vom Volleyballverein? (Context)
Does Kitty like the people from the volleyball club?
Ja, ich verstehe, der Volleyballverein bedeutet Louis sehr viel. (Target)
Yes, I understand that the volleyball club means a lot to Louis.

37. Besucht Thomas die Buchclub-Treffen oft? (Context)
Does Thomas often visit the book club meetings?
Wie verrückt, warum hat sie das nicht erzählt? (Target)
That's crazy, why hasn't she told me that?

38. Hat Caroline sich mit dem Buchhalter verschworen? (Context)
Did Caroline conspire with the accountant?
Caroline hat sich in den Buchhalter verliebt. (Target)
Caroline has fallen in love with the accountant.

39. Hat Stella einen Kredit aufgenommen? (Context)
Did Stella take out a loan?
Stella hat eine Torte gebacken. (Target)
Stella baked a cake.

40. Ist Robin durch die Prüfung gefallen? (Context)
Did Robin fail the test?
Sie muss wütend gewesen sein! (Target)
She must have been so angry!

41. Ist Mayas Mann wütend? (Context)
Is Maya's husband angry?
Ich wäre auch sauer. (Target)
I would also be irritated.

42. Hasst Samuel die Leute, mit denen er zusammen lebte? (Context)
Does Samuel hate the people he lives with?
Er zieht nicht aus. (Target)
He isn't moving out.

43. Hat Mona die Leute auf der Party ignoriert? (Context)
Did Mona ignore the people at the party?
Nur weil er das nicht gesagt hat, heisst das nicht, dass es nicht so ist. (Target)
Just because he didn't say that, doesn't mean that it isn't true.

44. Nimmt Molly an, dass Ben der Service nicht gefallen hat? (Context)
Does Molly assume that Ben wasn't satisfied with the service?
Ben arbeitet bei der Bank. (Target)
Ben works at the bank.

45. Mag Cornelius mittelalterliche Kunst nicht? (Context)
Doesn't Cornelius like art from the middle ages?
Vielleicht hat er nur kein grosses Interesse daran. (Target)
Maybe he just doesn't have a big interest in it.

46. Mag Sophia die Familientreffen? (Context)
Does Sophia like the family gathering?
Sofie sollte mit Maximilian ehrlich darüber reden. (Target)
Sofie should talk about that honestly with Maximilian.

47. Milton hat erwähnt, dass Sebastian nicht zum Sprachkurs gegangen ist. (Context)
Milton mentioned that Sebastian didn't go to the language course.
Denkst du, dass Milton lügt? (Target)
Do you think Milton is lying.

48. Ist Sigrid sehr fit? (Context)
Is Sigrid a fit person?
Das glaube ich auch. (Target)
I believe so, too.

49. Geniesst Andreas die Abendessen mit der Familie? (Context)
Does Andreas enjoy the dinner with his family?
Andreas hat keinen Grund, eifersüchtig zu sein. (Target)
Andreas doesn't have any reason to be jealous.

50. Steht Jon auf das Mädchen aus dem Kunstunterricht? (Context)
Does Jon like the girl from art class?
Jon hat keine Freundin. (Target)
Jon doesn't have a girlfriend.

51. Hat Florian erwähnt, ob David die Party gefallen hat? (Context)
Did Florian mention whether David liked the party?
Vielleicht hat Florian sein Handy vergessen. (Target)
Maybe Florian forgot his cell phone.

52. Hat Ulrike den Lärm nicht gehört? (Context)
Hasn't Ulrike heard the noise?
Ulrike wird heiraten. (Target)
Ulrike is getting married.

53. Hat Martin die Besucher beleidigt? (Context)
Did Martin offend the visitors?
Mona versucht, ihn zu verteidigen. (Target)
Mona is trying to defend him.

54. Hat Phillipp das Abendessen geschmeckt? (Context)
Did Phillipp enjoy dinner?
Ich fand das Abendessen auch sehr schlecht. (Target)
I also think that dinner was very bad.

Appendix B

Items Experiment 2

All context sentences were as follows, following Djärv (2019b):

> GERMAN: Stell dir vor, du bist auf einer Party, und du hörst zufällig ein Gespräch zwischen zwei deiner Freunde, *x* und *y*. Du hörst *x* sagen:
>
> ENGLISH: Imagine that you're at a party, and you happen to overhear a conversation between two of your friends, *x* and *y*. You hear *x* say:

The speaker *x* consistently comes back in the target item with a proper name; the question following the target item was consistently structured as follows:

> GERMAN: Laut *x*, p.
> ENGLISH: According to *x*, p.

B.1 Test Items

1. ...aber Leah sagt, (dass) die Vermieterin *ist/sei* nachlässig (*ist/sei*).
   ...however, Leah says that the landlady is negligent.

2. ...aber Lena sagt, (dass) Klaus *ist/sei* der neue Lottogewinner (*ist/sei*).
   ...however, Lena says that Klaus is the new Lottery winner.

3. ...aber Leila erwähnte, (dass) Cornelia *ist/sei* losgezogen (*ist/sei*) und das teuerste Auto im Autohaus gekauft hat.
   ...however, Leila mentioned that Cornelia set off and bought the most expensive car at the dealership.

4. ...aber Nellie erwähnte, (dass) Theodor *ist/sei* Mitglied eines Kults (*ist/sei*).
   ...however, Nellie mentioned that Theodor is member of a cult.

5. ...aber Nils nimmt an, (dass) sein Vater *ist/sei* sauer (*ist/sei*).
   ...however, Nils assumes that his dad is annoyed.

6. ...aber Linnea nimmt an, (dass) Casper *ist/sei* der beste Student (*ist/sei*).
   ...however, Linnea assumes that Casper is the best student.

7. ...aber Maja meint, (dass) Ulrich *ist/sei* an einer Einweihungsparty (*ist/sei*).
   ...however, Maja thinks that Ulrich is at a housewarming party.

8. ...aber Klara meint, (dass) Frans *ist/sei* in die Yoga-Lehrerin verliebt (*ist/sei*).
   however, Klara thinks that Frans has a crush on the yoga teacher.

9. ...aber die Polizistin glaubt, (dass) der Autofahrer *ist/sei* unschuldig (*ist/sei*).
   however, the police officer believes that the car driver is innocent.

10. ...aber Liv glaubt, (dass) Derek *ist/sei* ein neues Mitglied (*ist/sei*).
    ...however, Liv believes that Derek is a new member.

11. ...aber Liam behauptet, (dass) Minna *ist/sei* bewaffnet (*ist/sei*).
    ...however, Liam claims that Minna is armed.

12. ...aber Livia behauptet, (dass) Joanna *ist/sei* in den Typ von nebenan verknallt (*ist/sei*).
    ...however, Livia claims that Joanna is in love with the guy next door.

13. ...aber Lukas vermutet, (dass) der BMW *ist/sei* nicht so schnell (*ist/sei*).
    ...however, Lukas suspects that the BMW isn't very fast.

14. ...aber Lo vermutet, (dass) Mel *ist/sei* die Gewinnerin des Turniers (*ist/sei*).
    ...however, Lo suspects that Mel is the winner of the tournament.

15. ...aber Niklas erzählte mir, (dass) Jons neue Freundin *ist/sei* sehr nett (*ist/sei*).
    ...however, Niklas told me that Jon's new girlfriend is very nice.

16. ...aber Leon erzählte mir, (dass) der neue Lehrer *ist/sei* streng *ist/sei*.
    ...however, Leon told me that the new teacher is strict.

B.2 Filler Items

1. ...aber Ivar hat die Elternabende immer verpasst.
   ...however, Ivar always missed the parents' evenings.

2. ...aber Marcus missfällt, dass Felix die Richter bestochen hat.
   ...however, Marcus doesn't like that Felix bribed the judge.

3. ...aber Maike gefällt nicht, dass Karolina das Dissertationsprojekt aufgegeben hat.
   ...however, Maike doesn't like that Karolina gave up on her thesis project.

4. ...aber Mats fand nicht heraus, dass Emily die Labor-Treffen in letzter Zeit oft verfehlt hat.
   ...however, Mats didn't find out that Emily often missed out on the lab meetings recently.

5. ...aber Walter kann die Freunde seiner Frau nicht leiden.
   ...however, Walter can't stand his wife's friends.

6. ...aber Per mochte die Leute auf der Party sehr.
   ...however, Per liked the people at the party a lot.

7. ...aber Miriam entdeckte nicht, dass Vilhelmina sich mit dem Yoga-Lehrer getroffen hat.
   ...however, Miriam didn't find out that Vilhelmina met with the yoga teacher.

8. ...aber Alexandra hat das letzte Konzert sehr gefallen.
   ...however, Alexandra really liked that last concert.

9. ...aber Max merkte, dass Fredrik in die Yoga Lehrerin verknallt war.
   ...however, Max noticed that Fredrik was in love with the yoga teacher.

10. ...aber Elias kann das Auto, das seine Frau gekauft hat, nicht fahren.
    ...however, Elias cannot drive the car that his wife bought.

11. ...aber Kerstin konnte die Bedienung im Restaurant nicht leiden.
    ...however, Kerstin couldn't stand the servers in the restaurant.

12. ...aber Oliver hat das Abendessen für die Geschäftsführer verpatzt.
    ...however, Oliver messed up the dinner for the CEO.

13. ...aber Marie hasste nicht, dass Ernst dem Buchclub beigetreten ist.
    ...however, Marie didn't hate that Ernst joined the book club.

14. ...aber Lovis akzeptiert nicht, dass David nicht in den besten Studiengang kommen wird.
    ...however, Lovis doesn't accept that David will not get into the best study program.

15. ...aber Lars beschwerte sich, dass Stefan den neuen Lehrer nicht verstehen konnte.
    ...however, Lars complained that Stefan couldn't understand the new teacher.

16. ...aber Maria hasste, dass Liesel die erste Mannschaft verlassen hat.
    ...however, Maria hates that Liesel left the A-team.

17. ...aber Malte liebte nicht, dass Jakob den Backwettbewerb gewonnen hat.
    ...however, Malte didn't love that Jakob won the baking contest.

18. ...aber Luna gab nicht zu, dass Samuel die Nachbarn hasst.
    ...however, Luna didn't admit that Samuel hates the neighbor.

19. ...aber Laura akzeptiert, dass Olivia den Wettkampf nie gewinnen wird.
    ...however, Laura accepts that Olivia will never win the competition.

20. ...aber Margareta missfällt nicht, dass Leo durch die Fahrprüfung gefallen ist.
    ...however, Margareta is not displeased that Leo failed his driving test.

21. ...aber Matilda fand heraus, dass Laura auf den Hochzeitsplaner stand.
    ...however, Matilda discovered that Laura is on the wedding planner.

22. ...aber Ludwig gab zu, dass Roland die Stelle auch haben will.
    ...however, Ludwig admitted that Roland also wants to have the job.

23. ...aber Louis gefällt, dass Kitty die Leute vom Club mag.
    ..however, Louis is pleased that Kitty likes the people from the club.

24. ...aber Lucas leugnet nicht, dass Caroline sich mit dem Buchhalter verschworen hat.
    ...however, Lucas doesn't deny that Caroline conspired with the accountant.

25. ...aber Marta entdeckte, dass Robin durch die Prüfung gefallen ist.
    ...however, Marta found out that Robin failed the test.

26. ...aber Samuel hasste die Leute, mit denen er zusammen lebte, sehr.
    ...however, Samuel hates the people he lives together with a lot.

27. ...aber Maximilian merkte nicht, dass Sophia die Familientreffen nicht mag.
    ...however, Maximilian didn't notice that Sofia doesn't like the family gathering.

28. ...aber Lara gefällt nicht, dass Andreas die Abendessen mit der Familie genießt.
    ...however, Laura doesn't like that Andreas is enjoying dinner with the family.

29. ...aber Magnus bezweifelt nicht, dass Jon auf das Mädchen aus dem Kunstunterricht steht.
    ...however, Magnus doesn't doubt that Jon has a crush on the girl from art class.